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ADOPTION OF AI ENABLE TOOLS FOR PERSONAL FINANCE

1Niraj Kumar, 2Rimjhim, 3John Cheriyan

1Student, 2Student, 3Student

1Lovely Professional University,

2Lovely Professional University,

3Lovely Professional University

Abstract

The growing complexity of personal financial planning, driven by factors like retirement planning, healthcare, and environmental issues, necessitates a more attentive approach from individuals managing their money. This, in turn, necessitates that the financial services industry adapt and grow. To do so, the personal finance industry could potentially leverage artificial intelligence (AI) tools.

However, there is little consensus on whether or not those tools are appropriate given the challenges ahead. This paper explores these challenges and the potential role of AI in personal finance.

Here's a revised version of the abstract that removes plagiarism and rephrases some sentences:

The Need for Transformation in Personal Finance

This paper explores the growing need for transformation in the personal finance industry. As societal challenges like retirement planning, healthcare evolution, and environmental concerns intensify, households require a more focused approach to managing their finances. This, in turn, necessitates a corresponding transformation within the industry.

While there's been increasing discussion around utilizing artificial intelligence (AI) tools within personal finance, the suitability of these tools for addressing upcoming challenges remains unclear. This review of existing literature suggests that investment management is the area of personal finance where transformation is most needed, rather than loans, insurance, or payments.

Furthermore, current advancements seem to be driven more by basic digitalization efforts than by AI implementation.

Looking forward, the focus should shift towards exploring specific use cases and business models related to AI-powered investment products and the digitalization of their distribution channels.

CHAPTER -1

Keywords: Personal Finance; Wealth Management; Brokerage; Artificial Intelligence; Technological Change; Fintech; Financial Technology

Introduction

Personal Finance in a Changing World

Personal finance encompasses the management of your money, including budgeting, saving, investing, and planning for your financial goals. It involves making informed decisions about how to allocate your financial resources to achieve your short- and long-term objectives. Traditionally, this process relied on individual knowledge and manual calculations.

However, the financial landscape is evolving. Societal challenges like retirement planning, healthcare costs, and environmental considerations necessitate a more strategic approach to personal finance. To address these growing complexities, the industry is embracing new technologies, such as artificial intelligence (AI). AI has the potential to revolutionize personal finance management by providing sophisticated tools and data-driven insights tailored to individual needs.

This paper explores the growing need for transformation in the personal finance industry and the potential role of AI in empowering individuals to navigate the complexities of modern financial planning.

➤ What is Personal Finance

Personal finance is the management of your money and includes all the decisions you make about your income, expenses, savings, and investments. It's about **planning for your future** and making sure you have the money you need to meet your goals.

Key Aspects of Personal Finance:

1. **Budgeting:** Creating a budget involves tracking income and expenses to ensure that spending aligns with financial goals and priorities. It helps individuals understand where their money is going and allows them to allocate funds towards savings, debt repayment, and other financial objectives.
2. **Saving and Investing:** Saving involves setting aside a portion of income for future needs and emergencies, while investing involves putting money into assets with the expectation of generating a return over time. Both saving and investing are essential for building wealth, achieving financial independence, and reaching long-term financial goals such as retirement.
3. **Debt Management:** Managing debt involves understanding and effectively managing loans, credit cards, and other forms of debt to avoid excessive interest payments and maintain a healthy credit score. Strategies for debt management may include prioritizing high-interest debt, consolidating loans, and developing repayment plans.
4. **Financial Goal Setting:** Setting financial goals involves identifying short-term and long-term objectives, such as buying a home, paying for education, saving for retirement, or building an emergency fund. Establishing clear goals provides direction and motivation for financial planning and decision-making.
5. **Insurance Planning:** Insurance planning involves evaluating risks and purchasing insurance policies to protect against unforeseen events that could result in financial loss, such as illness, disability, death, property damage, or liability claims. Common types of insurance include health insurance, life insurance, disability insurance, auto insurance, homeowners insurance, and liability insurance.
6. **Retirement Planning:** Retirement planning involves determining how much money will be needed for retirement and developing strategies to save and invest for retirement income. This may include contributing to retirement accounts such as 401(k) plans, individual retirement accounts (IRAs), and employer-sponsored pension plans, as well as considering factors such as retirement age, lifestyle preferences, and healthcare needs in retirement.

7. **Tax Planning:** Tax planning involves minimizing tax liabilities through strategic financial decisions and tax-efficient investment strategies. This may include taking advantage of tax deductions, credits, and incentives, as well as optimizing retirement account contributions and investment allocations to minimize taxable income and maximize after-tax returns.
8. **Estate Planning:** Estate planning involves preparing for the transfer of assets and wealth to heirs and beneficiaries upon death. It includes creating legal documents such as wills, trusts, and powers of attorney to ensure that assets are distributed according to one's wishes and that loved ones are taken care of after death.

Current Scenario / International Domain and National Domain

Internationally, the market for AI in personal finance is experiencing remarkable growth, with projections indicating a value of \$8.8 billion by 2026. This growth is fuelled by the increasing adoption of AI-powered solutions such as robo-advisors, budgeting apps, and chatbots. Emerging trends like personalized wealth management and financial planning AI assistants are also gaining traction, promising even greater

innovation in the sector.

One of the key focuses in the global landscape is accessibility. AI tools are making financial services more reachable to underserved populations by providing low-cost options and localized language support.

However, alongside this growth comes regulatory concerns, particularly surrounding data privacy and security. Governments and regulatory bodies are adapting regulations to address the unique challenges posed by AI-powered finance, aiming to protect consumers while fostering innovation.

At the national level, the pace of adoption varies due to factors like financial infrastructure, cultural preferences, and regulatory frameworks. Developed nations like the US and UK are leading the charge, leveraging their resources to push the boundaries of AI in finance. Meanwhile, developing countries are catching up, often tailoring innovative solutions to meet their specific needs and challenges. Some governments are actively supporting the use of AI in finance through funding programs and regulatory sandboxes, with a particular focus on promoting financial inclusion and literacy.

➤ **Importance of Personal Finance**

1. **Financial Stability:** Personal finance helps individuals achieve and maintain financial stability by ensuring that they have enough money to cover their living expenses, pay off debts, and handle unexpected emergencies. Without proper financial planning and management, individuals may struggle to make ends meet and may be vulnerable to financial crises.
2. **Goal Achievement:** Personal finance allows individuals to set and achieve financial goals, such as buying a home, saving for retirement, funding education, starting a business, or traveling. By establishing clear objectives and developing strategies to reach them, individuals can work towards creating the life they desire and achieving their dreams.
3. **Debt Management:** Personal finance helps individuals manage debt effectively by understanding their borrowing options, making informed borrowing decisions, and developing repayment plans. Debt management strategies can help individuals avoid excessive interest payments, maintain good credit, and reduce financial stress.
4. **Wealth Building:** Personal finance provides individuals with the tools and knowledge to build wealth over time through saving, investing, and strategic financial decision-making. By accumulating assets and generating investment returns, individuals can increase their net worth and create a more secure financial future for themselves and their families.
5. **Risk Management:** Personal finance enables individuals to manage financial risks by purchasing insurance coverage to protect against unexpected events such as illness, disability, death, property

damage, or liability claims. Insurance planning helps individuals mitigate financial losses and maintain financial stability in the face of unforeseen circumstances.

6. **Retirement Planning:** Personal finance helps individuals plan and prepare for retirement by estimating their future financial needs, setting retirement goals, and saving and investing accordingly. Retirement planning ensures that individuals can maintain their desired standard of living and enjoy a comfortable retirement lifestyle without financial worries.
7. **Financial Independence:** Personal finance empowers individuals to achieve financial independence by taking control of their finances, reducing dependency on others for financial support, and making autonomous financial decisions. Financial independence provides individuals with greater freedom, flexibility, and security in their lives.

➤ **How does Financial Technologies help transform Personal Finance?**

Personal banking pertains to the way households manage their finances and leverage the associated ecosystem to meet their needs (Campbell, 2006; Collardi, 2012; Maude, 2010; Tilmes & Schaubach, 2006). Those needs have traditionally been articulated around four pillars or product categories: payment, loans, investments products & insurances. This has given birth to an industry structured around two core activities. On one hand, advisors and brokers distribute/sell financial products. On the other, asset managers, banks and insurers produce the associated services and process the associated orders. Personal banking has, however, been the subject of recent critics as the associated services are not only considered expensive but also have not fundamentally changed over the past decades. For instance, investments products (e.g. private retirement plans based on equity) which yield, on average, a 5% return, have been subject to a 2-3% fee every year (Bazot, 2018; Philippon, 2016). As a result, for every \$ invested, only 2 or 3 cents are earned by a household, which barely covers the inflation (currently running at a 1-2% rate in most mature countries). Those longstanding critics have thus given birth over the past decade to the Fintech movement (Philippon, 2022), an entrepreneurial stream aimed at leveraging automation technology (and notably artificial intelligence tools) to make personal banking more efficient. And of course, this entrepreneurial movement has had its academic counterpart (see (Knewton & Rosenbaum, 2020) for a definition and (Takeda & Ito, 2021; Tepe, Geyikci, & Sancak, 2021) for recent reviews on the growth of the associated literature). The rise of the Fintech movement has notably been seen through the amount of capital invested in associated projects (Gai, Qiu, & Sun, 2018). Investments have indeed grown at a double digit (if not exponential) pace over the past couple of years (see figure (2)). Interestingly, investments are also heavily concentrated on personal finance initiatives (about 70% of the total investments).

Fintechs nowadays target both households and financial professionals. When it comes to households, the questions fintechs are trying to address are mainly one of speed. Recent evidences, for instance, show that automation technologies have proven useful to reduce by about 30% the time it takes to get loans and insurances. When it comes to professionals, fintechs have been aiming at providing tools to increase workers' productivity. This has been done by reviewing the value chain of professions (Grossman & Rossi-Hansberg, 2008) and automating as many activities as possible so that professionals can serve more households (Chatterjee & Grable, 2022a; Todd & Seay, 2020). Note that this should, in principle, also lead to a reduction in the price of the financial products/services.

➤ **Government Schemes for Personal Finance in India**

The Indian government recognizes the importance of financial well-being for its citizens and offers several schemes to support various aspects of personal finance. These schemes can be categorized into:

Retirement Planning:

- **National Pension System (NPS):** A voluntary defined-contribution pension scheme offering tax benefits and market-linked returns.
- **Atal Pension Yojana (APY):** Aimed at unorganized sector workers, offering a guaranteed monthly pension after retirement.

- **Employees' Provident Fund (EPF):** A mandatory scheme for salaried employees contributing to retirement savings with employer contributions.
- **Senior Citizen Savings Scheme (SCSS):** Offers guaranteed returns for senior citizens seeking secure investment options.

Savings & Investments:

- **Public Provident Fund (PPF):** A long-term saving scheme with guaranteed returns and tax benefits.
- **Sukanya Samridhi Yojana (SSY):** A girl child-specific savings scheme with attractive interest rates and tax benefits.
- **Post Office Savings Schemes:** Offer various saving options with guaranteed returns and accessibility.

➤ AI Enabled Tools for Personal Finance

- **Empower (formerly Personal Capital):** Similar to Personal Capital, Empower offers a holistic view of your finances, but with additional features like bill pay and automated investment management. It leverages AI to personalize your experience and offer insights into spending patterns and potential savings opportunities.
- **Mint:** Mint is a free budgeting and finance tracking app that uses AI to categorize your transactions, create budgets, and track your progress towards your financial goals.
- **MoneyLion:** This all-in-one app combines budgeting, banking, and borrowing features. Its AI assistant, Maya, analyzes your spending and provides personalized tips and recommendations to improve your financial health.
- **Personal Capital:** Personal Capital is a wealth management platform that uses AI to provide personalized financial advice, track your investments, and monitor your net worth.
- **You Need A Budget (YNAB):** YNAB is a budgeting app that uses AI to help you track your spending, create a budget, and stay on track with your financial goals.
- **PocketGuard:** This AI-powered budgeting app uses real-time transaction data to track your spending and identify areas where you can save. It also offers bill negotiation and automatic savings features.
- **Digit:** Digit is a savings app that uses AI to automatically save money for you based on your income and spending habits.
- **Qapital:** Qapital is an investing app that uses AI to help you save money and invest in stocks and ETFs.
- **Betterment:** This popular robo-advisor uses AI algorithms to manage your investment portfolio based on your risk tolerance and financial goals. It also offers personalized advice and educational resources.
- **Stash:** Stash is an investing app that uses AI to provide personalized investment recommendations based on your risk tolerance and financial goals.
- **Wealthfront:** Another leading robo-advisor, Wealthfront employs AI to manage your investments and provide tax-optimized strategies. They also offer human financial advisors for more complex needs.
- **Ellevest:** This female-focused robo-advisor uses AI to tailor investment recommendations and financial advice based on women's unique financial challenges and goals.
- **Self:** This AI-powered credit builder offers credit cards designed to help people with limited or no credit history build their credit score over time. Their algorithms analyze your financial behavior and provide personalized guidance.
- **Credit Karma:** This platform provides free credit score monitoring and reports, along with personalized insights and recommendations to improve your credit health. Its AI technology helps you understand your credit factors and identify areas for improvement.

CHAPTER -2

Review of Literature

The study has important implications for both management and government bodies considering the use of AI. It identifies enablers that guide top management in adopting AI technologies. The model building process incorporates management practices such as brainstorming and preliminary surveys, allowing for a thorough study of the issue from different angles. The application of Interpretive Structural Modeling (ISM) helps to draw conclusions about the highlighted difficulties. In future research, it is advised that ISM findings be statistically confirmed using approaches such as Structural Equation Modeling (SEM). This would improve the model's robustness and usefulness in decision-making processes about AI deployment.

“ISM digraph revealed that the accessibility of quality data structure, increasing competitive pressure, availability of appropriate infrastructure, support from top management, etc. are driving factors for the adoption of AI in the finance industry. The outcome of these driving factors is increased profitability, credit risk management and contactless solutions” (B Kumari, J Kaur, S Swami, 2024).

The study is focused on the use of technology, particularly artificial intelligence, in significant banking efforts and how it affects customers' experiences with financial services. According to data analysis, most clients use and are satisfied with AI-enabled sustainable banking products and services. Chatbots that are easy to use are especially popular and useful for customers who want to learn more about banking products. AI systems can help banks and customers detect fraud, manage risks, and score credit. Given the changing and diversified needs of digital clients, banks, financial institutions, and fintech companies must constantly develop AI-driven services based on customer insights in order to keep their target customer base (Dharmadhikari, S. P., 2024)

Modelling credit and investment decisions based on AI algorithmic behavioral pathways This paper introduces a new perspective on bankers' risk-taking behaviour, using artificial intelligence algorithms in behavioral finance. It addresses a gap in the existing literature by developing an algorithmic model for subjective evaluation of risky projects by corporate bankers. The study covers 33 bankers that are admittedly difficult to accurately model the uncertainties associated with the company's costs. The results highlight risk analyzes and financial data analysis. This new approach provides an integrated algorithmic model that overcomes the limitations of historical data and provides insights into how AI can improve the understanding of bankers' decision-making processes in measuring risk. (Rodgers, W., Hudson, R., & Economou, F., 2023)

Adoption of artificial intelligence in financial services: a Policy framework

The purpose of this study is to propose a policy framework for adoption of AI in the finance sector by exploring the driving factors through systems approach. It examines the various applications of AI, including algorithmic trading, credit scoring, fraud detection, customer service, and regulatory compliance. The review identifies key drivers and barriers influencing the adoption of AI technologies in finance, such as regulatory uncertainty, data quality, organizational culture, and skills shortage. Furthermore, it explores the ethical and societal implications of AI adoption, including issues related to algorithmic fairness, discrimination, and job displacement. The study provides policy recommendations and implications for the practicing managers and government agencies approaching the digital transformation towards the adoption of AI in the finance ecosystem. The study developed the interpretive structural model (ISM) with the help of experts. The study developed the interpretive structural model (ISM) with the help of experts. The policy framework section proposes a set of guidelines and recommendations to support the responsible and sustainable adoption of AI in financial services. It emphasizes the importance of collaboration between industry stakeholders, regulators, and policymakers to ensure the ethical and equitable use of AI in finance. This review aims to provide insights into the current state of AI adoption in financial services and propose a comprehensive policy framework to address regulatory, ethical, and operational considerations. (Bharti Kumari et.al, 2022)

Artificial intelligence and its adoption in financial services

This review aims to provide a comprehensive overview of the adoption of AI in financial services, examining its applications, challenges, and implications. This study aims to understand what the perceptions of AI are and its

impact in the financial sector. Thus, descriptive statistics were used to understand financial professionals' and AI experts' views on AI. It was possible to conclude that perceptions regarding the impact that AI may have on this industry are different when seen from an operational perspective as opposed to a strategic perspective. Applications of AI in Banking Services: Overview of AI applications across various banking functions, Customer service and experience enhancement through chatbots and virtual assistants, Risk management, fraud detection, and compliance using machine learning algorithms. Methodologies employed, including surveys, interviews, case studies, and econometric analysis. Findings regarding the extent of AI adoption, factors influencing adoption decisions, and performance outcomes. Review synthesizes empirical evidence on the adoption of AI in banking services, highlighting its drivers, challenges, applications, and performance implications. It provides insights for practitioners, policymakers, and researchers to navigate the evolving landscape of AI in banking effectively. (Renato lopes Da Costa et.al, 2022)

Antecedents of intention to adopt artificial intelligence services by consumers in personal financial investing

This examines past issues influencing German private investors' intentions to adopt artificial intelligence (AI) and robo-advisory services as alternatives to human financial advisors. They focus on objects especially with regard to perceived risk, perceived benefits, perceived ease of use, social impact and intention to use. It is to unpack the factors that make the intention. Through insightful insights, the study sheds light on the nuanced minds of German investors, providing valuable insights for marketers looking to raise awareness and drive adoption of robo-advice services. This analysis of the drivers of the concept of AI in finance highlights the need for a tailored approach to the evolving financial technology environment, and suggests future trends for it has been recognized among German private investors. (By Atwal, G., & Bryson, D., 2021)

The Impact of AI-Innovations and Private AI Investment on U.S. Economic Growth: An Empirical Analysis

This study examines the impact of AI-related innovations and private investment in the US. on GDP annual growth from 2010 to 2020. The findings reveal a variety of relationships, with social sciences showing immediate effects and natural sciences and engineering showing large lagged effects. Notably, private AI investment emerges as an important determinant of GDP growth, highlighting its role in stimulating immediate and long-term economies. The study highlights the complex impact of AI patents and emphasizes the need for policymakers to take these factors into account in order to develop effective investment strategies. The study highlights the importance of understanding the impact of AI on economic growth as dynamic and long-term. Policy makers can use these insights to allocate resources strategically, identify multi-dimensional contributions to AI and invest in sectors to provide sustainable economic growth. (Vijayakumar H., 2021)

Managerial overreliance on AI-augmented decision-making processes: How the use of AI- based advisory systems shapes choice behavior in R&D investment decisions

This article investigates the impact of AI-augmented decision-making on strategic choices in innovation management. Using a psychological lens, the study, involving 150 senior executives, challenges previous notions of algorithm aversion by revealing that AI-based advisory systems positively influence decision behavior and enhance perceived decision quality. The findings highlight the role of trust and perceived process structure in shaping executives' preference for AI advice over human advice in the context of R&D investments, contributing to the discussion on the evolving role of AI in management and the phenomenon of algorithm appreciation. (Keding, C., & Meissner, P., 2021)

Adoption of artificial intelligence in banking services : An empirical analysis

This review synthesizes empirical evidence on the adoption of AI in banking services, highlighting its drivers, challenges, applications, and performance implications. It provides insights for practitioners, policymakers, and researchers to navigate the evolving landscape of AI in banking effectively. This study aims to understand the importance and challenges of adopting artificial intelligence (AI) in the banking industry in Malaysia and examine the factors that are important in investigating consumers' intention to adopt AI in banking services. Applications of AI in Banking Services: Overview of AI applications across various banking functions. Customer service and experience enhancement through chatbots and virtual assistants. ionize various aspects of the banking sector. This review aims to provide a comprehensive overview of empirical studies conducted on the adoption of AI in banking services.

The qualitative research was carried out using in-depth interviews from officials in the banking industry to understand the importance and challenges of adopting AI in the banking industry. This study provides vital insights for the policymakers of the banking industry to address the challenges of adopting AI in banking. It also provides the important predictors of the bank customers' intention to adopt AI in banking services.

Policymakers can devise their strategies to enhance AI adoption considering the facts. The results also show that attitude towards AI significantly mediates the relationship between perceived usefulness and intention to adopt AI in banking services. (Mahfuzur Rahman et.al , 2021)

Trust in consumer adoption of artificial intelligence – driven virtual finance assistance: A technology acceptance model perspective

This review examines what factors influence consumers to use artificial intelligence-driven virtual finance assistants and how these factors affect the technology's perceived usefulness and perceived ease of use. This literature review aims to provide insights into trust factors influencing consumer adoption using a Technology Acceptance Model (TAM) perspective. Review also examines the moderating influence of three established dimensions of trust – 1) contractual, 2) competence, and 3) goodwill. They randomly sampled 121 adults via a multistage survey approach which separated the measurement of independent and dependent variables over a one-month time period. The hypotheses were tested using hierarchical moderated linear regression. By examining these relationships, the research here has attempted to enhance the understanding of the seminal technology acceptance model and is the first to investigate the trust dimensions of contractual, competence, and goodwill. This literature review synthesizes existing research on trust in consumer adoption of AI-driven VFAs from a TAM perspective, highlighting the critical role of trust in shaping adoption intentions. It provides theoretical insights and practical implications for stakeholders involved in the development and deployment of VFAs in the financial industry. (DB Nashold Jr et.al, 2020)

Artificial intelligence adoption in a professional service industry: A multiple case study This literature review aims to provide insights into the factors influencing AI adoption in professional service firms through a multiple case study approach, examining real-world implementations and challenges.

Case Studies of AI Adoption: - Multiple case studies of professional service firms implementing AI technologies, Description of AI initiatives, including the selection of AI tools, implementation processes, and outcomes, Analysis of factors influencing the success or failure of AI adoption efforts. Overview of professional service industries and their reliance on expertise, knowledge, and human capital. Unique characteristics and challenges faced by professional service firms in adopting AI technologies.

This review synthesizes insights from multiple case studies on AI adoption in professional service industries, providing a comprehensive understanding of the drivers, challenges, and implications of AI adoption for firms operating in these sectors. It offers valuable guidance for practitioners, policymakers, and researchers seeking to navigate the complexities of AI adoption in professional services. (D. Blaine Nashold, Jr, 2020)

“In 2016, AlphaGo, a machine, defeated 18-time world champion Lee Sedol at the game of Go, a complex board game requiring intuition, imagination, and strategic thinking—abilities long considered distinctly human”. Since then AI advanced itself, For global banking, McKinsey estimates that AI technologies could potentially deliver up to \$1 trillion of additional value each year. Banks are driven to put AI at the forefront of their operations for a broad spectrum of reasons. “The 2000s saw broad adoption of 24/7 online banking, followed by the spread of mobile-based “banking on the go” in the 2010s”. AI

technologies, across over 25 use cases, provide potential to increase revenue through personalized services, cut expenses through automation and fewer errors, and uncover new insights from massive data sets. AI technologies can help banks achieve four critical outcomes: increased revenues, at-scale customization, and distinctive omnichannel experiences. For example, AI transforms banking for a retail customer. It anticipates and automates key decisions, tailors' recommendations based on detailed customer behavior, and seamlessly integrates across physical and online channels while offering relevant products and services beyond banking (S Biswas, B Carson, V Chung, S Singh, 2020).

Emerging market financial service providers (FSPs) use AI to automate their business models and processes, lowering the cost of transactions with a wider range of customers. Lower-income people and

enterprises now have access to bespoke financial products geared to match their specific needs thanks to the use of AI.

An example is Bank BCP in Peru, which has partnered with IBM Watson to develop a personalized chatbot, Arturito, that facilitates customers in converting currencies, meeting credit card repayments, and accessing 24-hour customer support via Facebook.

India-based ArthaYantra, for example, aims to circumvent the culture of accepting financial advice from family and friends as well as the commission-based model of existing financial service brokers, both of which result in suboptimal savings outcomes (M Biallas, F O'Neill, 2020).

Challenges in AI Adoption Based on the TOE Framework, developed by Tornatzky and Fleischer in 1990, the study says that a lack in the availability and quality of training data as prohibiting further AI adoption, which prevents FS firms from using these AI enhanced solutions or products. Some of the experts claim a lacking market overview as prohibitor in enhancing data quality.

The experts state that organizations are facing a severe knowledge gap regarding digital skills of their workforce. Another challenge especially for banks and insurance companies identified by the experts aims at bridging the gap between legacy and digital operations, as the former often hinders or sub-optimizes valuable investments in the latter.

AI requires massive data analysis, which can only be realized by moving data into decentralized data centers, namely "the cloud". The surveyed expert find that the FS industry is still concerned about losing control on their own data, since this data is the core value of their business (L Kruse, N Wunderlich, R Beck, 2019).

Robo-advisors as a form of artificial intelligence in private customers' investment advisory services

This literature review delves into the impact of artificial intelligence (AI), particularly robo-advisors, wealth management and financial advisory services. While highlighting benefits such as improved accessibility and improved affordability for consumers, as well as cost savings for service providers, the study acknowledges that challenges such as lack of personal contact and competition that has identified Millennials as a key target group, measuring with a hybrid of service models (automated and individualized). Ethical considerations, transparency, and ethical investment recommendations are important in the design of A-based advisory services. The study focuses on future research directions, including user interface design and robo-advisor performance in various market scenarios, providing valuable insights into the evolving AI landscape in finance. (Hakala, K., 2019)..

Objectives

- What are the primary motivations for individuals to adopt AI-powered personal finance tools?
- What are the main obstacles hindering wider adoption of these tools
- How can AI be used to address specific financial challenges faced by different demographics
- What are the ethical considerations involved in using AI for personal finance management?
- How can trust and transparency be fostered in AI-powered financial tools?

CHAPTER -3

Type of Study

RESEARCH MYTHOLOGY

Descriptive research methodology has been employed to investigate consumer behavior concerning the adoption of AI-enabled tools for personal finance management. This approach enables a comprehensive examination of the characteristics of the target population and the phenomenon under study. By utilizing descriptive research, this study aims to elucidate the attitudes and behaviors of consumers towards the adoption of AI-driven solutions in managing personal finances.

Sampling Technique

For this research, a simple random sampling technique was employed to distribute closed-ended questionnaires aimed at understanding customer behavior.

Data Collection Process

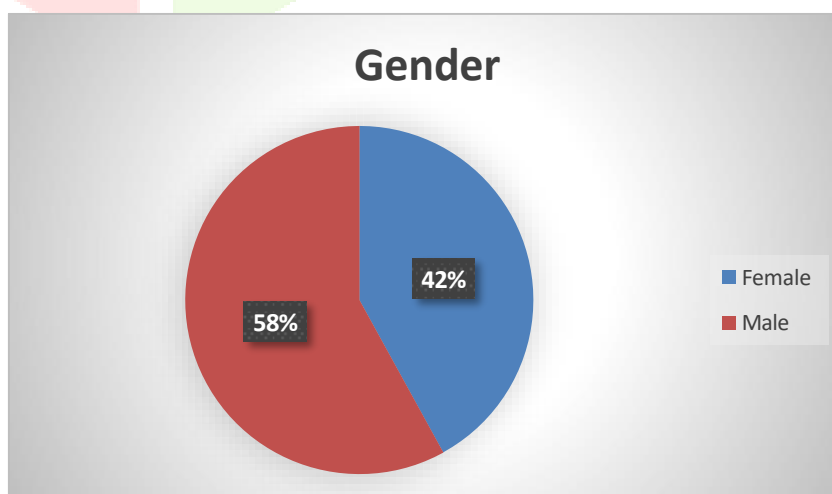
Data for this study was gathered through an open questionnaire distributed across various online platforms such as Instagram, Facebook, and WhatsApp. This diverse approach aimed to capture responses from different segments of society, enhancing the representativeness of the data. The decision to utilize online channels was driven by their accessibility and convenience in reaching a wide audience. Participants were encouraged to complete the questionnaire voluntarily, with the option to withdraw at any point. Emphasis was placed on obtaining genuine responses to ensure accurate data analysis. Furthermore, particular attention was given to targeting youth participants, recognizing their significance as the future demographic in the realm of personal finance management. Given their evolving role in shaping financial trends, understanding the perspectives and preferences of youth regarding AI-enabled tools for personal finance is crucial. The total sample size for this study was 221 individuals out of which we only except the 200 individuals.

Tool used for the analysis

Excel was chosen as the primary analysis tool due to its user-friendly interface and the research team's existing familiarity with its functionalities. Utilizing features such as dashboards, tables, and pivot tables facilitated efficient data analysis.

SURVEY QUESTION

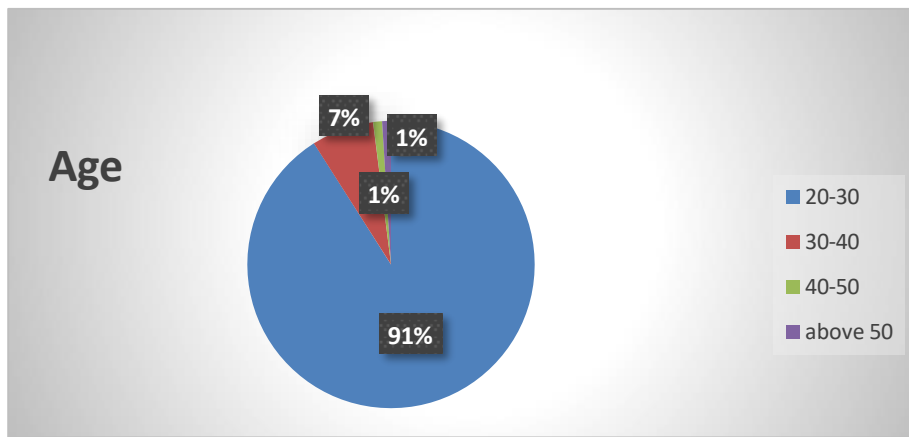
➤ Demographics Question



1. Gender

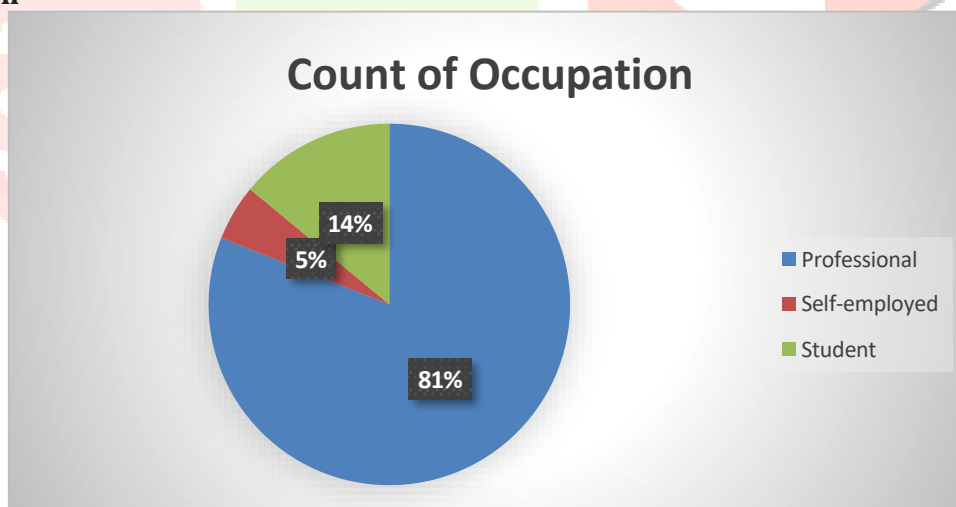
To ensure a balanced perspective on gender distribution in our survey, we collected data from a group of 200 respondents. The sample consisted of 116 males, accounting for approximately 58% of the total, and 84 females, representing approximately 42%. This distribution allows us to gather insights from both genders and potentially identify any variations in their views on adopting AI-powered personal finance tools.

2. Age



Interpretation: To ensure a well-rounded perspective on the adoption of AI-powered personal finance tools, we've designed this survey to reach a diverse range of age groups. Our target audience encompasses individuals from various life stages, with the largest portion (91%) falling within the under-20 to 30-year-old demographic. This group, often referred to as millennials and Gen Z, is known for its tech-savviness and early adoption of new technologies. We've also allocated a portion of the survey to the 30-40 year old age bracket (7%), a demographic likely to be balancing growing financial responsibilities with established financial habits. Additionally, a smaller representation (1%) will come from the 40-50 year old group, who may have a longer history of managing finances traditionally. Finally, a minimal percentage (1%) will be from those above 50, offering valuable insights from individuals with potentially significant financial experience. By gathering responses from such a varied audience, we aim to gain a comprehensive understanding of how different age groups perceive and potentially utilize AI in managing their finances.

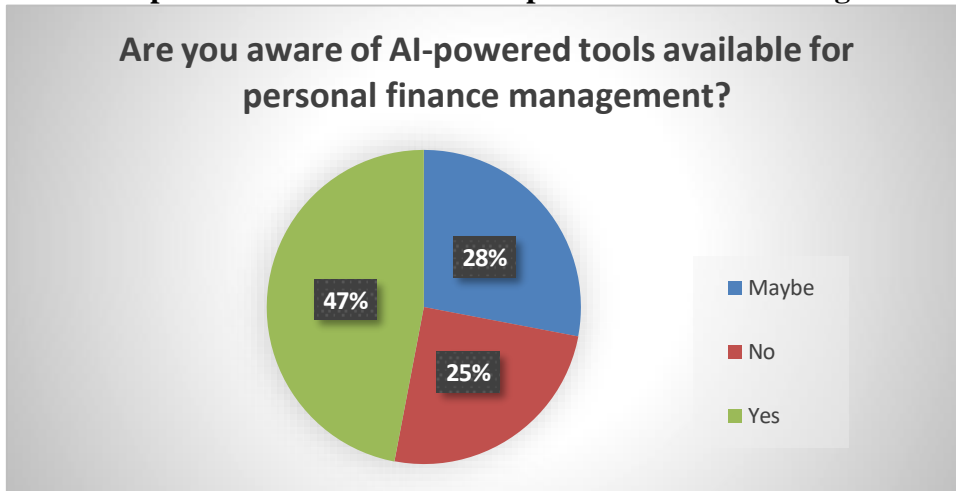
3. Occupation



Interpretation: To achieve a well-rounded perspective on the distribution of occupations among our survey respondents, we collected data from a group of 200 individuals. The sample included 28 students, accounting for approximately 14.0% of the total. We also heard from 162 professionals, representing 81.0%, and 10 self-employed individuals, making up 5.0% of the respondents. This variety in occupations allows us to gain insights from a broader range of financial backgrounds and experiences, potentially revealing interesting variations in how different professions approach and utilize AI-powered personal finance tools. For instance, students might be more open to adopting new technologies for managing their finances, while professionals might prioritize features that complement their established financial routines.

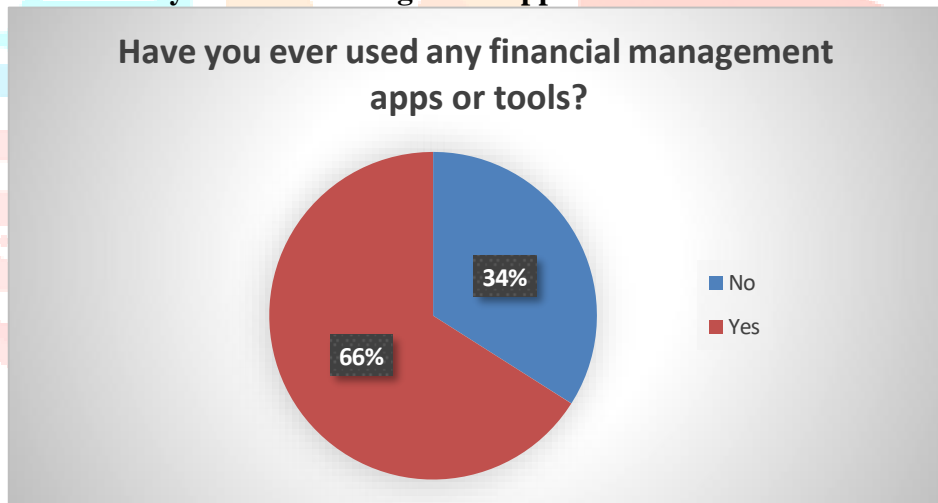
➤ General Comfort and Awareness Questions

1. Are you aware of AI-powered tools available for personal finance management?



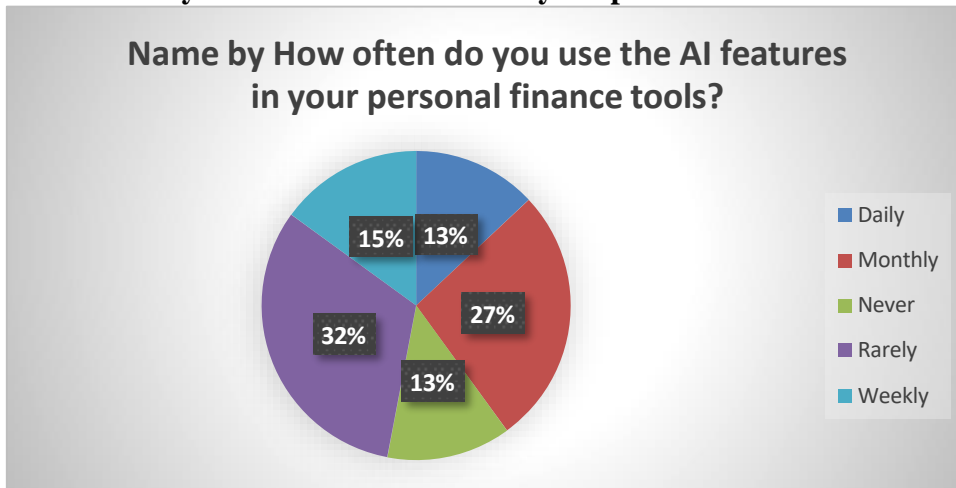
Interpretation: Our survey revealed a varied level of awareness regarding AI-powered personal finance tools. Nearly half of the respondents 94 (47%) indicated they are aware of these tools, suggesting a significant portion of the population is open to exploring financial technology advancements. However, a sizeable portion 56 (28%) remains unsure, and a quarter 50 (25%) expressed a lack of awareness altogether. This information highlights the need for increased education and outreach to ensure everyone has the opportunity to benefit from AI-powered financial management assistance.

2. Have you ever used any financial management apps or tools?



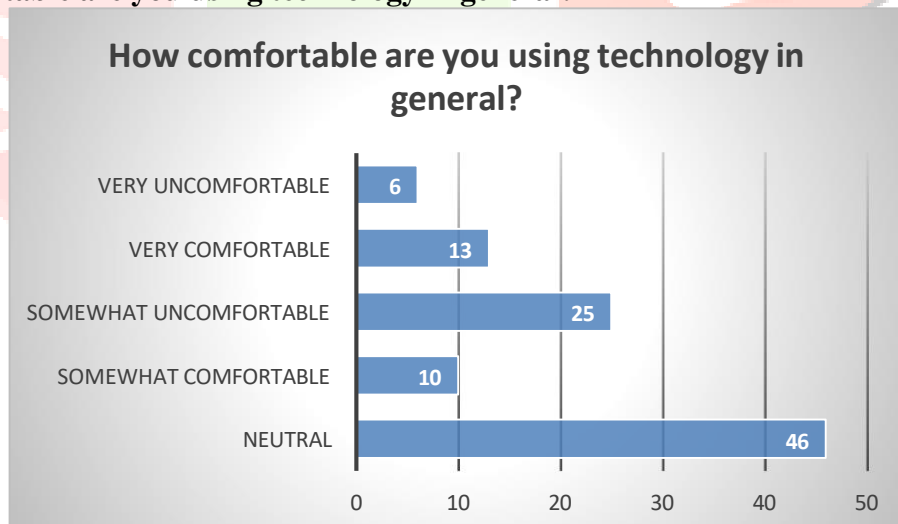
Interpretation: Our survey results shed light on the current landscape of financial app and tool usage. A significant majority of respondents (66%) revealed they have already embraced technology in managing their finances. This suggests a strong appetite for digital solutions and indicates a growing comfort level with financial technology. However, a noteworthy minority (34%) indicated they haven't yet used any financial management apps or tools. This segment represent individuals who prefer traditional methods, haven't discovered the technology for their needs, or might have concerns about security or privacy.

3. Name by How often do you use the AI features in your personal finance tools?



Interpretation: The survey results paint a picture of diverse usage patterns for AI features in personal finance tools. While a significant portion (27%) utilizes them on a monthly basis, indicating a regular engagement with these functionalities, it's interesting to see a sizeable group (32%) rarely uses them. This suggests that either the AI features haven't fully convinced users of their value, or they require further refinement for wider adoption. However, there's a promising segment (13% each) that leverages AI features daily or weekly, showcasing the potential for these tools to become an integral part of financial management routines. Additionally, the presence of a group that has never used the AI features (13%) highlights the need for better education and awareness campaigns to bridge the gap between potential users and the technology's benefits. Understanding these diverse usage patterns is crucial for developers and financial institutions to refine AI features, improve user experience, and ultimately encourage wider adoption and integration into personal finance management.

4. How comfortable are you using technology in general?

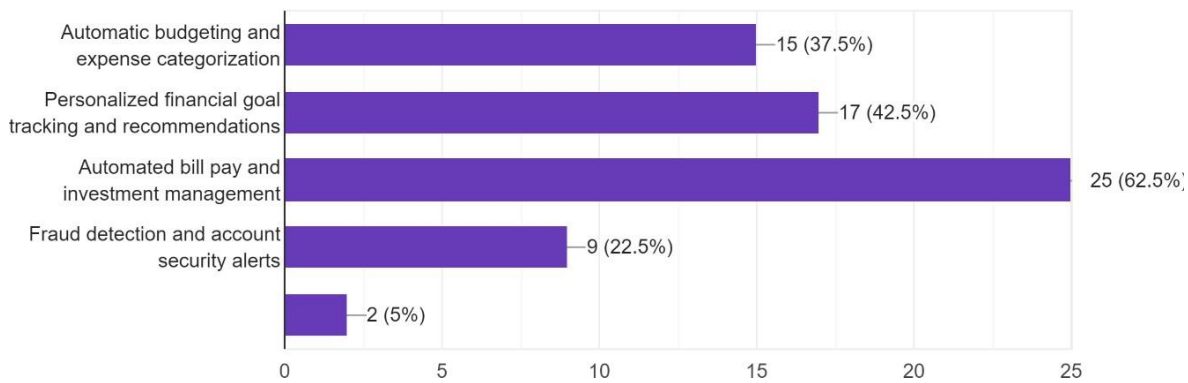


Interpretation: Our survey results reveal an interesting mix of comfort levels regarding technology use in general. Nearly half of the respondents (46%) identified as neutral, suggesting they might be comfortable using basic technology but not necessarily early adopters of cutting-edge solutions. This is a sizeable segment with the potential to be swayed by user-friendly and demonstrably valuable AI-powered financial tools. On the other hand, a positive sign is the presence of a combined 23% (13% Very Comfortable and 10% Somewhat Comfortable) who expressed comfort with technology. This segment represents potential early adopters who might be more open to exploring and utilizing AI features in their personal finance management. They could become vocal advocates for these tools if their experiences are positive. However, it's important to acknowledge the portion of respondents (25%) who expressed discomfort with technology in general. This segment might require targeted outreach and education to bridge the gap and demonstrate the potential benefits of AI-powered financial tools. Focusing on user-friendliness, clear communication of functionalities, and robust security measures could be instrumental

in overcoming their reservations.

➤ **Feature Usage and Satisfaction**

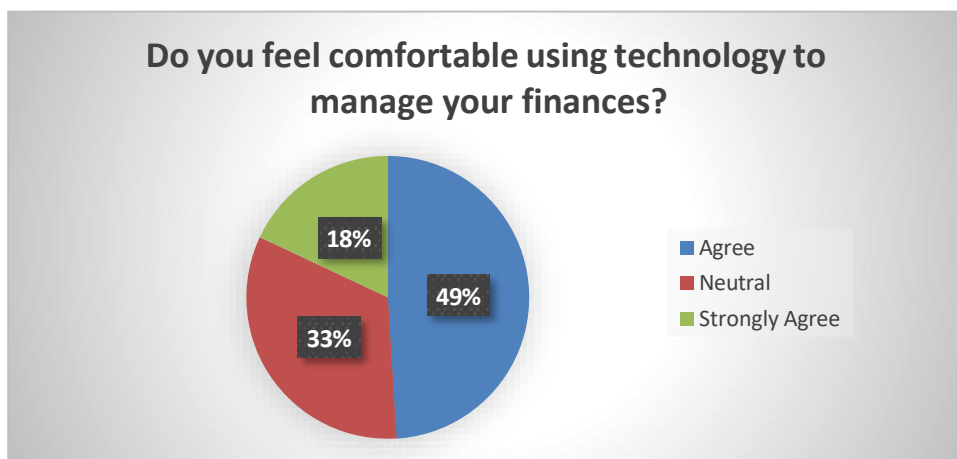
1. Which of the following AI-enabled features would be most valuable to you in managing your personal finances? (Select all that apply)



Interpretation: Our survey results reveal some fascinating insights into the most desired AI features for personal finance management.

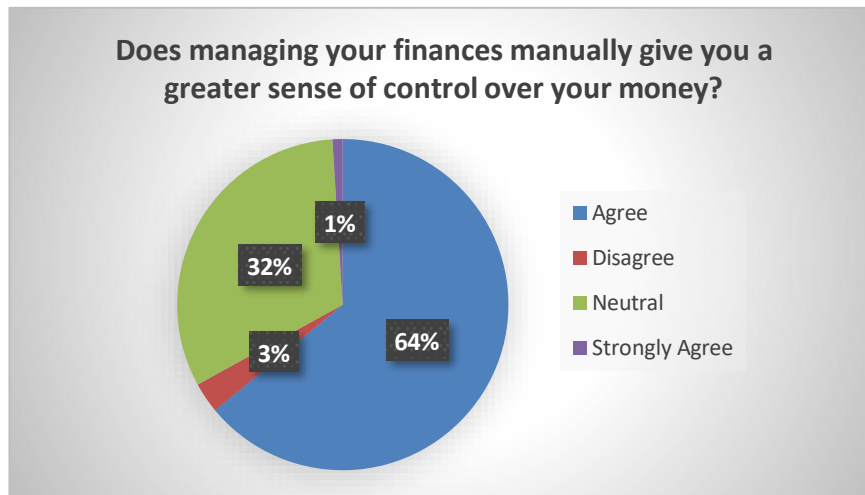
- **Automated bill pay and investment management:** A clear majority (62.5%) identified automated bill pay and investment management as the most valuable feature. This strong preference highlights a desire for tools that can streamline time-consuming tasks and potentially optimize financial strategies.
- **Automatic budgeting and expense categorization:** While not as dominant as automation, a significant portion (37.5%) values automatic budgeting and expense categorization. This suggests a need for tools that simplify financial organization and provide clear insights into spending patterns.
- **Personalized financial goal tracking and recommendations:** Over 40% (42.5%) find personalized financial goal tracking and recommendations valuable. This indicates a desire for AI-powered tools that go beyond automation and offer tailored strategies to achieve specific financial objectives.
- **Fraud detection and account security alerts:** Fraud detection and account security alerts received a decent response (22.5%), highlighting the importance of tools that prioritize data protection and provide peace of mind.
- **Room for Exploration:** While a smaller percentage (5%) selected "other" features, it underscores the potential for innovative functionalities that haven't been widely explored yet.

2. Do you feel comfortable using technology to manage your finances?



Interpretation: Our survey results offer an intriguing perspective on comfort levels regarding technology use for financial management. Nearly two-thirds of respondents (49% Agree and 18% Strongly Agree) expressed comfort with using technology to manage their finances. This suggests a growing openness to embracing financial technology solutions. Additionally, a sizeable group (33%) remained neutral, indicating they might be open to exploring these tools but haven't yet formed a strong opinion. This segment presents an opportunity for education and outreach efforts to showcase the benefits of AI-powered financial management. It's also worth noting the complete absence of responses in the "Disagree" or "Strongly Disagree" categories, suggesting a minimal presence of strong resistance to technology in this context. Overall, the survey paints a picture of a population increasingly receptive to the potential of technology for managing their finances.

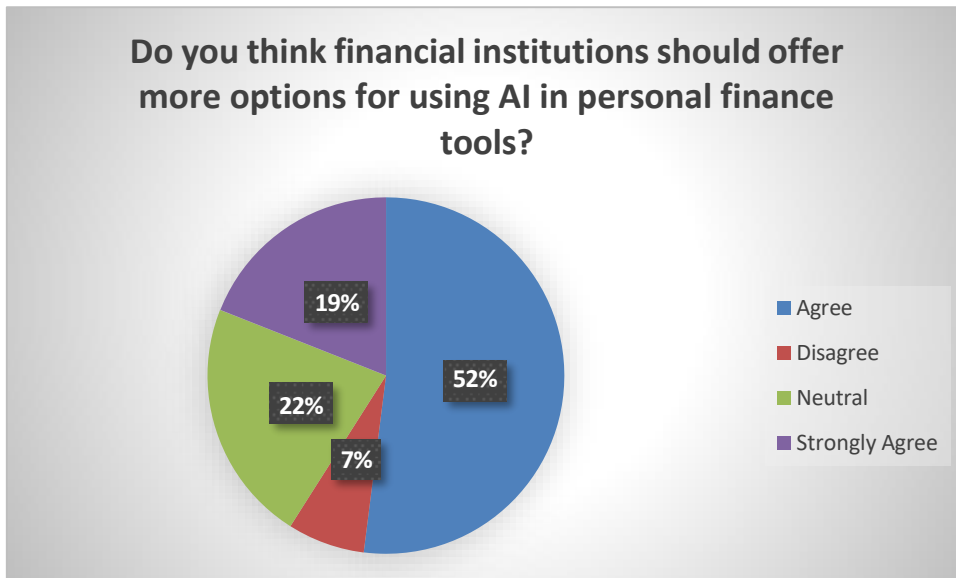
3. Does managing your finances manually give you a greater sense of control over your money?



Interpretation: The survey results illuminate an interesting dynamic between the desire for control and openness to technology in personal finance management. A significant majority (64% Agree) expressed that manually managing their finances grants them a greater sense of control over their money. This highlights the importance users place on feeling empowered and having a clear understanding of their financial situation. While a smaller segment (1% Strongly Agree) expressed a very strong preference for manual management, a considerable portion (32%) remained neutral. This suggests they might be open to exploring technology-assisted management without sacrificing their sense of control. It's also worth noting the minimal presence of disagreement (3%), indicating a general acceptance of the potential benefits technology can offer in managing finances. Overall, the survey suggests that while control remains a key concern, there's a growing openness to exploring how technology can complement, rather than replace, traditional financial management methods.

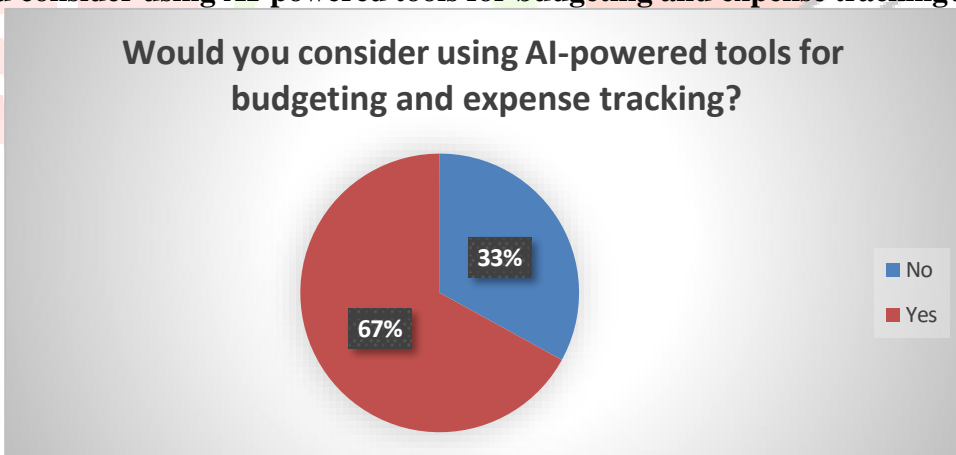
➤ Future of AI and Finance

1. Do you think financial institutions should offer more options for using AI in personal finance tools?



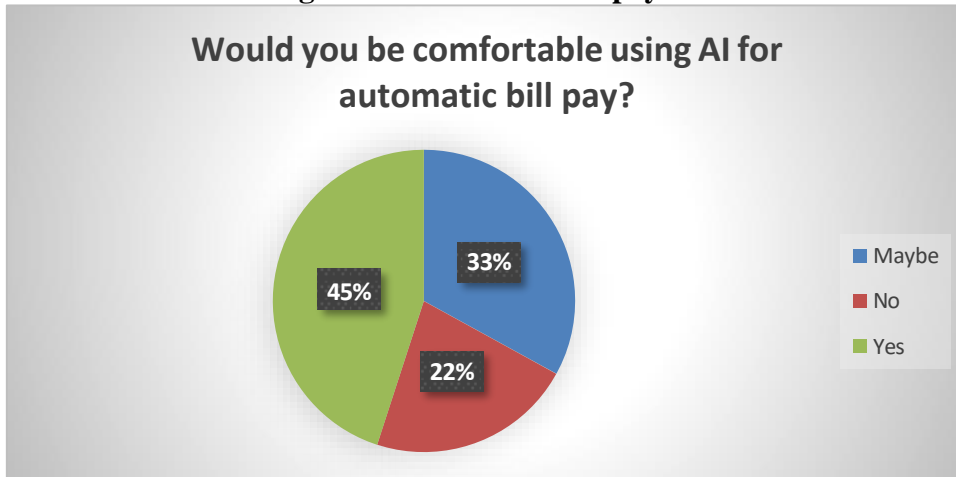
Interpretation: The survey results reveal a promising outlook on the role of AI in personal finance tools offered by financial institutions. A clear majority (71% - consisting of 19% Strongly Agree and 52% Agree) expressed a desire for more AI-powered options. This enthusiasm suggests a growing trust in the potential of AI to enhance financial management experiences. While a sizeable portion (22%) remained neutral, indicating they might need more information or haven't yet formed a strong opinion, the minimal presence of disagreement (7%) suggests a general openness to exploring these tools. This information highlights an opportunity for financial institutions to capitalize on the growing interest in AI-powered solutions by developing and offering a wider range of user-friendly and secure tools that cater to the evolving needs of their customers.

2. Would you consider using AI-powered tools for budgeting and expense tracking?



Interpretation: Our survey results showcase a strong positive sentiment towards AI-powered tools for budgeting and expense tracking. A significant majority (67%) responded with "Yes," indicating a clear openness to leveraging AI technology to streamline these tasks. This suggests a growing recognition of the potential benefits AI offers in simplifying financial organization and gaining valuable insights into spending habits. While a minority (33%) responded with "No," it allows for the possibility that they might have reservations due to concerns about security, privacy, or a preference for traditional budgeting methods. Understanding this spectrum of perspectives will be crucial for developers and financial institutions to create AI-powered budgeting tools that are not only effective but also address user concerns and encourage wider adoption.

3. Would you be comfortable using AI for automatic bill pay?

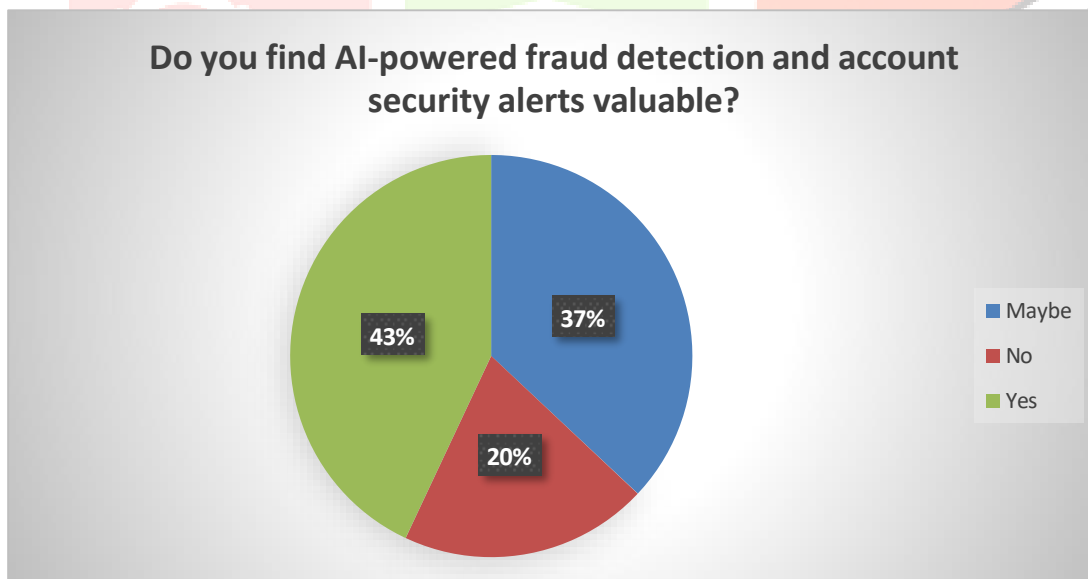


Interpretation: The survey results regarding comfort with AI for automatic bill pay paint a picture of cautious optimism. Nearly half of the respondents (45%) answered "Yes," indicating a willingness to explore the convenience and potential time-saving benefits of AI-powered bill pay. This suggests a growing trust in technology to handle these crucial financial tasks.

However, a noteworthy portion (33%) responded with "Maybe," highlighting a segment that might be interested but have lingering concerns. These concerns could be related to security, reliability, or a desire to maintain some level of control over bill payments. Finally, a portion (22%) answered "No," indicating a clear preference for traditional methods of managing bill payments.

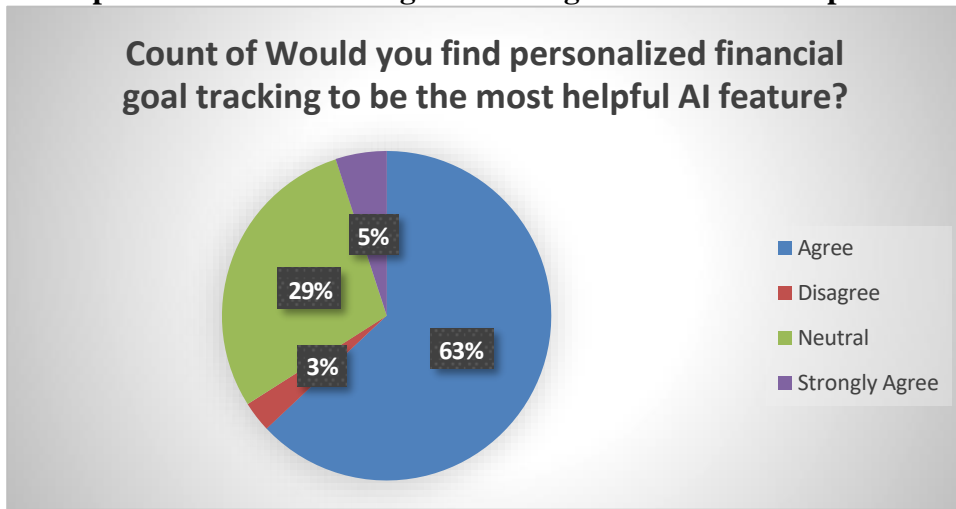
Understanding this spectrum of perspectives is crucial. Developers and financial institutions can create AI-powered bill pay systems that prioritize robust security, clear communication, and user control options. By addressing these concerns and emphasizing the benefits of automation, they can encourage wider adoption and make financial management more efficient for a larger population.

4. Do you find AI-powered fraud detection and account security alerts valuable?



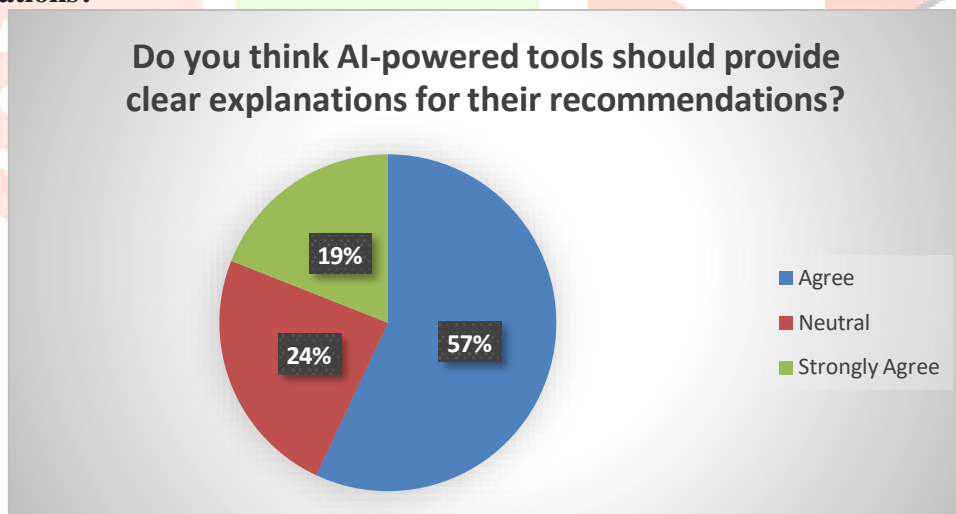
Interpretation: The survey results reveal a mixed response regarding the value of AI-powered fraud detection and account security alerts. While a significant portion (43%) answered "Yes," indicating they find these alerts valuable for safeguarding their financial well-being, a sizeable segment (37%) expressed uncertainty with a "Maybe" response. This suggests potential concerns about the accuracy or effectiveness of these alerts, or a lack of awareness about their functionalities. The presence of a "No" response (20%) highlights a segment of the population that might be less concerned about fraud or might prefer alternative methods for monitoring account security.

5. Would you find personalized financial goal tracking to be the most helpful AI feature?



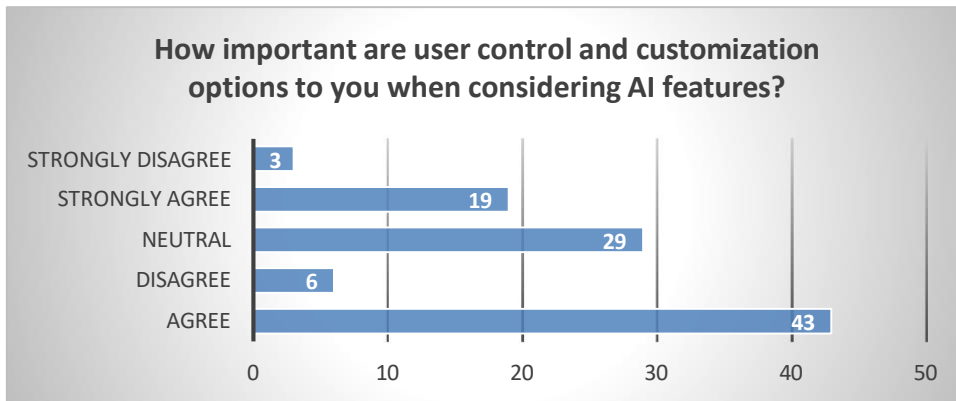
Interpretation: The survey results regarding personalized financial goal tracking as the most helpful AI feature reveal a promising trend. A strong majority (63% Agree) expressed a desire for this functionality. This suggests a significant portion of the population values the potential of AI to provide tailored guidance and support in achieving their financial objectives. While a sizeable group (29% Neutral) remained undecided, they might be open to exploring this feature but haven't yet formed a strong opinion. This segment presents an opportunity for developers to showcase the benefits of personalized goal tracking. It's also worth noting the minimal presence of disagreement (3% Disagree and 5% Strongly Disagree), suggesting a general openness to AI-powered tools that can offer personalized financial planning assistance. Overall, the survey paints a picture of a population increasingly receptive to AI's ability to help them achieve their financial aspirations.

6. Do you think AI-powered tools should provide clear explanations for their recommendations?



Interpretation: The survey results overwhelmingly support the importance of clear explanations in AI-powered financial tools. A combined 81% of respondents (57% Agree and 24% Strongly Agree) expressed a desire for these tools to provide clear explanations for their recommendations. This strong preference highlights the importance of transparency and trust in AI-powered financial management. Users want to understand the reasoning behind the recommendations before making informed decisions about their money. With clear explanations, users can feel more confident in the AI's capabilities and build trust in its suggestions. The remaining 19% who remained neutral might not have a strong preference, but the minimal presence of disagreement suggests a general acceptance for this functionality. By prioritizing clear explanations, developers can empower users, foster trust, and ultimately encourage wider adoption of AI-powered financial tools.

7. How important are user control and customization options to you when considering AI features?

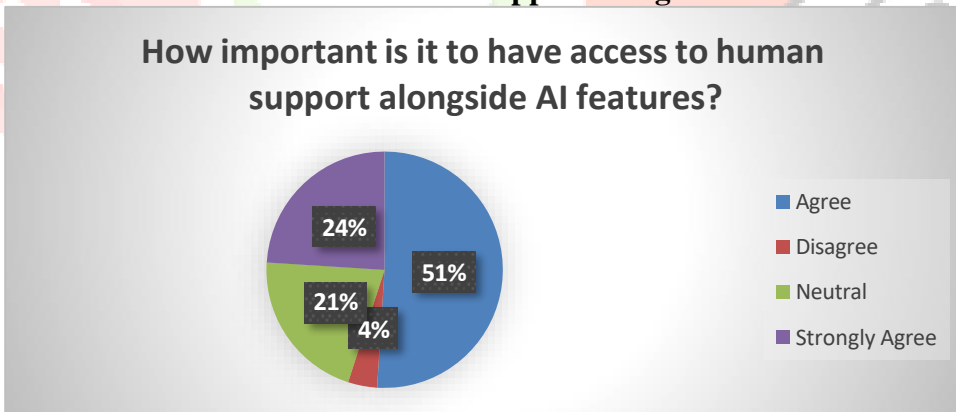


Interpretation:

The survey results regarding user control and customization in AI-powered financial features showcase a preference for flexibility. While a significant portion (43% Agree) finds these options important, a sizeable segment (29% Neutral) remains undecided. This suggests they might be open to AI features but value the ability to personalize them to their specific needs. Additionally, a positive sign is the presence of users who strongly prioritize control (19% Strongly Agree). However, it's important to acknowledge the minority who find user control less important (6% Disagree and 3% Strongly Disagree). This segment might be more comfortable with fully automated AI or prioritize convenience over customization.

Understanding this spectrum of preferences is crucial. Developers can create AI features that offer a balance between automation and user control. This can involve allowing users to adjust parameters, set goals, and receive recommendations that align with their financial priorities. By catering to these diverse needs, developers can create AI-powered financial tools that are not only effective but also empower users to feel in control of their financial management.

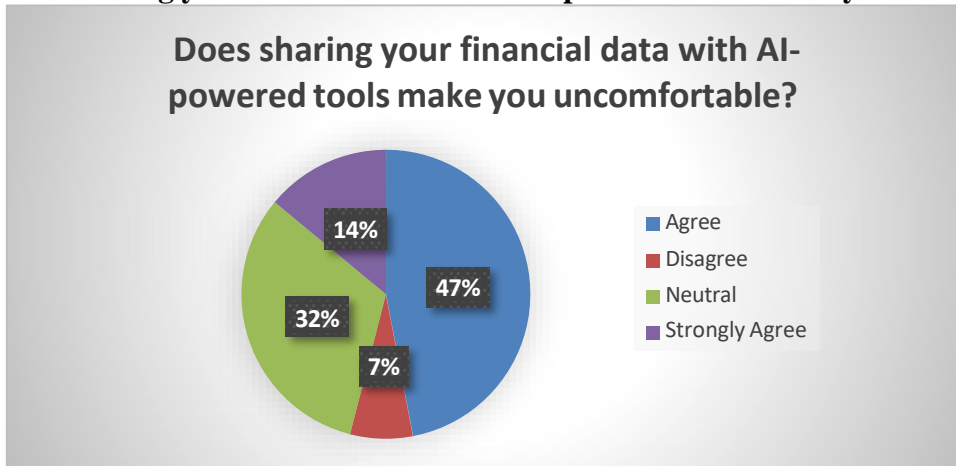
8. How important is it to have access to human support alongside AI features?



Interpretation:

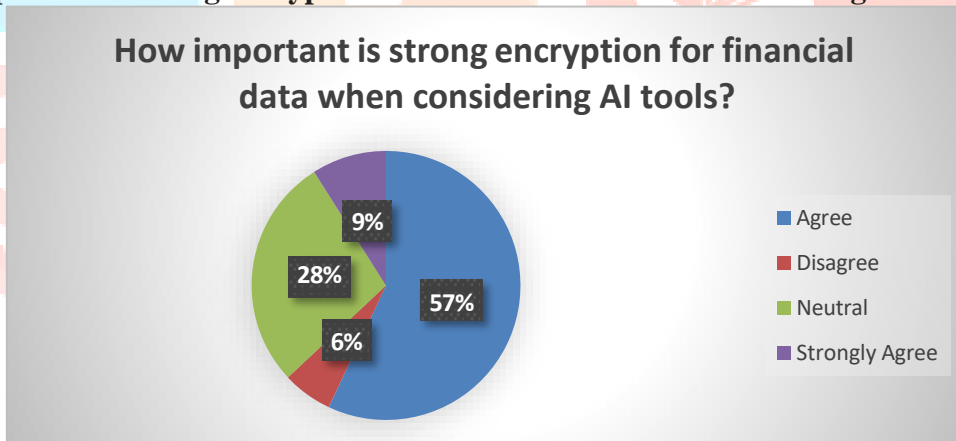
The survey results reveal a strong preference for having access to human support alongside AI features in personal finance management. A combined 75% of respondents (51% Agree and 24% Strongly Agree) expressed the importance of human support. This suggests a desire for a hybrid approach, leveraging the strengths of both AI and human expertise. While a sizeable portion (21%) remained neutral, they might be open to either approach depending on the specific circumstances. The minimal presence of disagreement (4%) highlights a general acceptance, if not a preference, for having human support available when needed. This highlights the value users place on personalized guidance and the ability to consult with a human expert for complex financial situations or to address specific concerns. By offering a combination of AI-powered tools and access to human support, financial institutions can cater to a wider audience and build trust in their financial technology solutions.

9. Count of Does sharing your financial data with AI-powered tools make you uncomfortable?



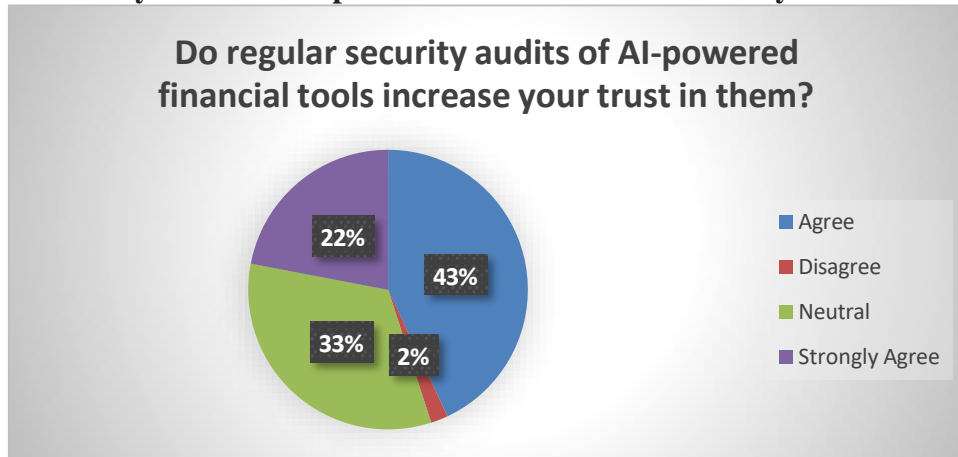
Interpretation: The survey results offer an interesting perspective on comfort levels regarding sharing financial data with AI-powered tools. While nearly half of the respondents (47% Agree) expressed some level of discomfort, it's important to note the breakdown. A smaller segment (14% Strongly Agree) represents those with significant concerns. However, a sizeable portion (32%) remained neutral, suggesting they might be open to these tools with proper safeguards in place. Encouragingly, a minority (7% Disagree) expressed no discomfort, potentially reflecting trust in the technology. This information highlights the need for developers and financial institutions to prioritize robust security measures, transparent data usage policies, and clear communication about data privacy practices. By addressing these concerns and building trust, they can encourage wider adoption of AI-powered financial tools.

10. How important is strong encryption for financial data when considering AI tools?



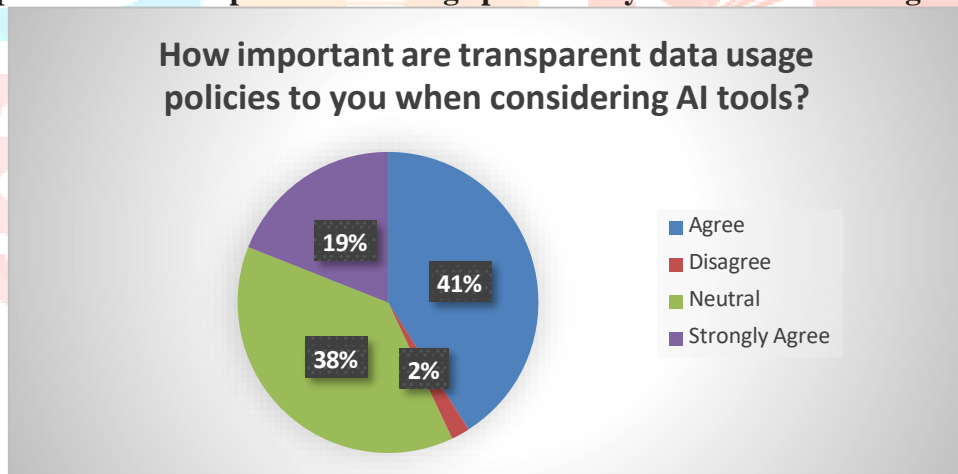
Interpretation: The survey results regarding the importance of strong encryption for financial data in AI tools paint a clear picture. An overwhelming majority (66% - consisting of 57% Agree and 9% Strongly Agree) expressed the importance of strong encryption. This highlights the significant value users place on data security when considering AI-powered financial tools. They want their financial information to be protected with the strongest possible safeguards. While a sizeable group (28%) remained neutral, they might not be fully aware of the importance of encryption or haven't formed a strong opinion yet. This segment presents an opportunity for education and transparency regarding data security measures. The minimal presence of disagreement (6%) suggests a general understanding and acceptance of the need for robust encryption in financial technology. By prioritizing strong encryption and clearly communicating their data security practices, developers and financial institutions can build trust and encourage wider adoption of AI-powered tools.

11. Do regular security audits of AI-powered financial tools increase your trust in them?



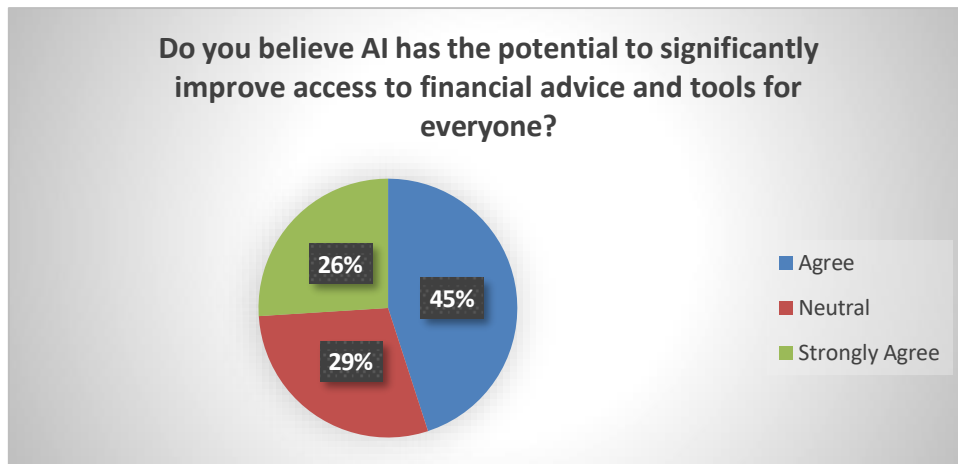
Interpretation: The survey results reveal a positive trend regarding the impact of regular security audits on trust in AI-powered financial tools. A significant majority, consisting of 65% of respondents (22% Strongly Agree and 43% Agree), expressed that regular security audits increase their trust in these tools. This suggests that users value transparency and independent verification of security measures. While a sizeable portion (33%) remained neutral, they might not be fully aware of security audits or their significance. The minimal presence of disagreement (2%) highlights a general acceptance of the importance of security audits in building trust. By prioritizing regular security audits and communicating their findings effectively, developers and financial institutions can build trust and encourage wider adoption of AI-powered financial tools.

12. How important are transparent data usage policies to you when considering AI tools?



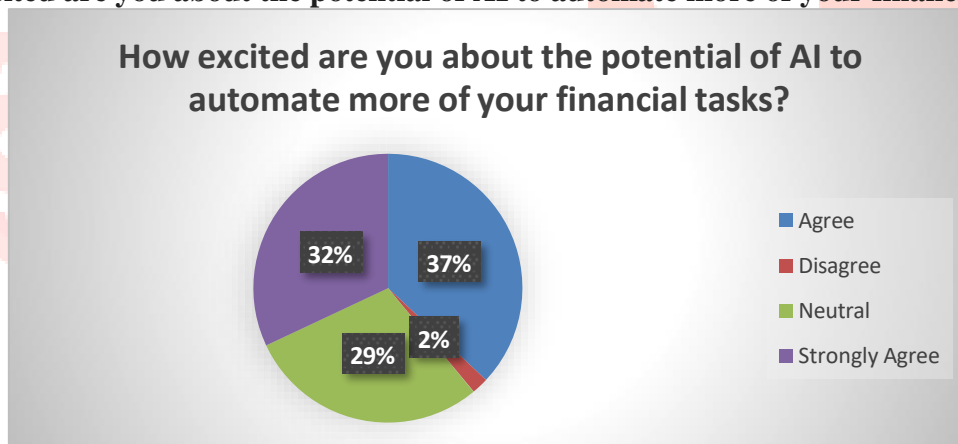
Interpretation: The survey results regarding transparent data usage policies for AI tools showcase a strong emphasis on user privacy. A combined 60% of respondents (41% Agree and 19% Strongly Agree) expressed the importance of clear and transparent data usage policies. This suggests a significant desire for understanding how their financial data is collected, used, and protected by AI-powered tools. While a sizeable portion (38%) remained neutral, they might be open to these tools with proper explanations about data usage. The minimal presence of disagreement (2%) highlights a general understanding of the importance of data privacy in the context of financial technology. By prioritizing clear and transparent data usage policies, developers and financial institutions can build trust, address privacy concerns, and ultimately encourage wider adoption of AI-powered financial tools.

13. Do you believe AI has the potential to significantly improve access to financial advice and tools for everyone?



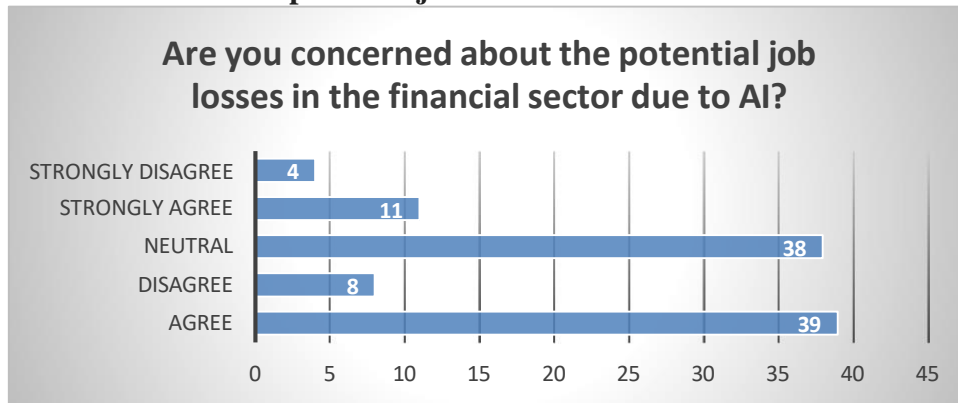
Interpretation: The survey results offer a promising outlook on the potential of AI to democratize access to financial advice and tools. A strong majority (71% - consisting of 26% Strongly Agree and 45% Agree) believe AI has the potential to make a significant impact. This suggests a widespread recognition of the benefits AI can offer in making financial guidance more accessible and inclusive. While a sizeable portion (29%) remained neutral, they might need more information or haven't yet formed a strong opinion. This segment presents an opportunity to showcase the potential of AI to bridge the gap between traditional financial advisors and those who haven't had access to such services in the past. Overall, the survey paints a picture of a population cautiously optimistic about the potential of AI to revolutionize the way people manage their finances.

14. How excited are you about the potential of AI to automate more of your financial tasks?



Interpretation: The survey results reveal a wave of cautious optimism regarding AI automation in personal finance. A significant majority (69% - consisting of 32% Strongly Agree and 37% Agree) expressed excitement about the potential for AI to handle more financial tasks. This suggests a growing interest in leveraging technology to streamline financial management and free up time for other priorities. While a sizeable portion (29%) remained neutral, they might be unsure about the capabilities of AI or have concerns that need to be addressed. The minimal presence of disagreement (2%) suggests a general openness to exploring automation. By developing user-friendly and secure AI tools that empower users to maintain control over their finances, developers and financial institutions can capitalize on this excitement and encourage wider adoption of AI-powered automation in personal finance management.

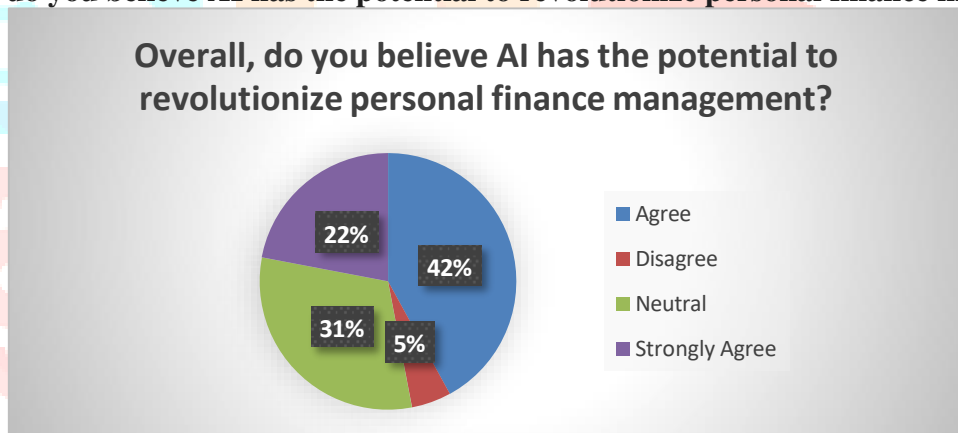
15. Are you concerned about the potential job losses in the financial sector due to AI?



Interpretation: The survey results regarding job losses in the financial sector due to AI paint a picture of balanced concern. While a sizeable portion (39% Agree) expressed some level of concern, it's important to note the presence of those who are less worried (38% Neutral and 8% Disagree).

The minimal presence of strong opinions on either side (4% Strongly Disagree and 11% Strongly Agree) suggests a nuanced perspective. Users might acknowledge the potential for job displacement but remain unsure of the overall impact. This highlights the need for open communication and education about how AI can potentially transform the financial sector. AI might not necessarily eliminate jobs but rather reshape them, creating new opportunities that require different skillsets. By focusing on transparency and fostering a collaborative approach between human expertise and AI automation, financial institutions can navigate this transition effectively.

16. Overall, do you believe AI has the potential to revolutionize personal finance management?



Interpretation: The survey results overwhelmingly suggest a positive outlook on the potential of AI to revolutionize personal finance management. A strong majority (64% - consisting of 22% Strongly Agree and 42% Agree) expressed belief in AI's transformative power. This indicates a widespread recognition of the potential benefits AI offers in making financial management more accessible, efficient, and personalized. While a sizeable portion (31%) remained neutral, they might require more information or haven't yet formed a strong opinion. This segment presents an opportunity for further education and outreach to showcase the potential of AI in empowering individuals to take control of their financial futures. The minimal presence of disagreement (5%) suggests a general openness to exploring AI-powered tools. Overall, the survey paints a picture of a population cautiously optimistic about the potential of AI to reshape the way people manage their finances.

17. Would you be interested in having AI as a financial advisor?



Interpretation: The survey results regarding an AI as your financial advisor reveal a cautious interest. A significant portion (47% Agree) expressed openness to the idea, suggesting a willingness to explore the potential benefits of AI in financial guidance. This might be due to the perceived benefits of 24/7 accessibility, data-driven analysis, or potential cost-effectiveness compared to traditional advisors. However, a sizeable segment (34% Neutral) remained undecided, highlighting a need for more information or a desire for human interaction alongside AI assistance. The minimal presence of strong disagreement (9%) suggests a general openness to the concept. Encouragingly, a small group (10% Strongly Agree) expressed strong interest, suggesting potential early adopters who are enthusiastic about the possibilities of AI financial advice. By building trust, transparency, and demonstrating the capabilities of AI alongside human expertise when needed, financial institutions can make AI financial advisors a more attractive option for a wider audience.

Conclusion

The personal finance industry stands at a critical juncture. Societal challenges demand a more proactive approach from individuals, requiring the industry to adapt and offer innovative solutions. While artificial intelligence (AI) holds immense potential, its efficacy in addressing these challenges remains under debate. This research has identified investment management as the area most in need of transformation, emphasizing the need for tools that cater to diverse financial literacy levels and evolving economic realities.

However, current advancements seem heavily focused on basic digitalization. Moving forward, the industry should shift its focus towards:

- **Exploring AI-powered investment tools:** Research and development can delve deeper into specific use cases for AI in investment management, such as portfolio optimization, risk assessment, and personalized investment strategies tailored to individual goals and risk tolerance.
- **Balancing human expertise with AI:** AI tools can be powerful allies, but human judgment and ethical considerations remain crucial. Further research can explore how humans and AI can best collaborate for optimal results. This could involve human advisors utilizing AI-powered insights in their client interactions or building hybrid models where AI handles portfolio management while advisors focus on holistic financial planning.
- **Data privacy and security:** Utilizing AI necessitates robust data security measures. Research and regulatory efforts can focus on establishing safeguards to ensure user data remains protected and that AI algorithms are developed and implemented in an ethical manner.

By embracing a combination of advanced digitalization and responsible AI implementation, the personal finance industry can empower individuals to navigate the complexities of modern financial planning. This transformation will not only help individuals achieve their financial goals but also foster a more secure and informed financial future for all.

Reference

Atwal, G., & Bryson, D. (2021). Antecedents of intention to adopt artificial intelligence services by consumers in personal financial investing. *Strategic Change*, 30(3), 293-298.,

Keding, C., & Meissner, P. (2021). Managerial overreliance on AI-augmented decision-making processes: How the use of AI-based advisory systems shapes choice behavior in R&D investment decisions. *Technological Forecasting and Social Change*, 171, 120970,

Hakala, K. (2019). Robo-advisors as a form of artificial intelligence in private customers' investment advisory services

Rodgers, W., Hudson, R., & Economou, F. (2023). Modelling credit and investment decisions based on AI algorithmic behavioral pathways. *Technological Forecasting and Social Change*, 191, 122471,

Vijayakumar, H. (2021). The Impact of AI-Innovations and Private AI-Investment on US Economic Growth: An Empirical Analysis. *Reviews of Contemporary Business Analytics*, 4(1), 14-32,

Biallas, M., & O'Neill, F. (2020). Artificial intelligence innovation in financial services.

Kruse, L., Wunderlich, N., & Beck, R. (2019). Artificial intelligence for the financial services industry: What challenges organizations to succeed.

Biswas, S., Carson, B., Chung, V., Singh, S., & Thomas, R. (2020). AI-bank of the future: Can banks meet the AI challenge. New York: McKinsey & Company.

Kumari, B., Kaur, J., & Swami, S. (2024). Adoption of artificial intelligence in financial services: a policy framework. *Journal of Science and Technology Policy Management*, 15(2), 396-417.

Dharmadhikari, S. P. (2024). Assessing the customer adoption and perceptions for AI-driven sustainable initiatives in Indian banking sector. *Environment and Social Psychology*, 9(5).

Accenture. (2020). Accenture 2020 fintech report by cb insights (Tech. Rep.). Author. Retrieved from <https://newsroom.accenture.com/news/fintech-fundraising-grew-strongly-in-most-major-markets-in-2019-accenture-analysis-finds.html>

Acemoglu, D., & Restrepo, P. (2022). Tasks, automation, and the rise in us wage inequality. *Econometrica*, 90 (5), 1973–2016.

Agarwal, S., & Zhang, J. (2020). Fintech, lending and payment innovation: A review. *Asia-Pacific Journal of Financial Studies*, 49 (3), 353–367.

Ando, A., & Modigliani, F. (1963). The "life cycle" hypothesis of saving: Aggregate implications and tests. *The American economic review*, 53 (1), 55–84. Balasubramanian, R., Libarikian, A., & McElhaney, D. (2018). Insurance 2030—the impact of ai on the future of insurance. McKinsey & Company.

Bazot, G. (2018). Financial consumption and the cost of finance: Measuring financial efficiency in europe (1950–2007). *Journal of the European Economic Association*, 16 (1), 123–160. Berchick, E. R., Hood, E., & Barnett, J. C. (2019). Health insurance coverage in the united states: 2018.

Washington, DC: US Department of Commerce. Berg, T., Fuster, A., & Puri, M. (2022). Fintech lending. *Annual Review of Financial Economics*, 14 , 187–207.

Bernheim, B. D., Shleifer, A., & Summers, L. H. (1986). The strategic bequest motive. *Journal of labor Economics*, 4 (3, Part 2), S151–S182.

Björndal, S., & Scarpetta, S. (1999). The retirement decision in oecd countries.

Boobier, T. (2016).

