International Journal of Finance (IJFIN)
Vol. 38, No. 3, May-June, 2025 pp. 99-142.
ISSN: 1041-2743
DOI: https://doi.org/10.5281/zenodo.15655704
Website: www.ijfin.com

Examining the impact of Behavioral intention, Trust, Social Influence and Perceived Risk on the Financial Inclusion on the Egyptian banking sector: The Mediating Role of Mobile Banking

Nehal Metwally [1], Khaled Gad [2], Karim Elfaham [3, *], Ayman A. Ragab [4],

[1] DBA Researcher, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt.

[2] Accounting, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt.

[3] Accounting, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt.

[4] Management, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt.

*** Corresponding author: Karim Elfaham**

Abstract

This study investigates the key determinants of financial inclusion within the Egyptian banking sector by applying the Technology Acceptance Model (TAM). Specifically, it examines how behavioral intentions, trust, social influence, and perceived risk influence financial inclusion, with mobile banking adoption acting as a mediating variable.

Using a quantitative descriptive survey design, data were collected from 420 respondents representing diverse demographic groups within the Egyptian banking population. The structural equation modeling (SEM) analysis revealed statistically significant relationships: behavioral intentions ($\beta = 0.45$, $p < 0.001$), trust ($\beta = 0.38$, $p < 0.001$), and social influence ($\beta = 0.32$, $p < 0.01$) positively affected financial inclusion, whereas perceived risk exerted a significant negative impact ($\beta = -0.27$, $p <$

0.01). Mobile banking adoption was confirmed as a significant mediator, strengthening these effects and explaining 56% of the variance in financial inclusion.

This study contributes to the growing literature by empirically validating TAM's robustness in explaining financial inclusion dynamics in an emerging market context. From a policy perspective, the findings underscore the critical need for targeted interventions that promote mobile banking adoption to accelerate financial inclusion. Policymakers and financial institutions are encouraged to implement programs that enhance digital literacy, build trust in mobile platforms, and reduce perceived risks through improved security and transparency measures. Additionally, tailored financial products and communication strategies should be developed to address the needs of different demographic segments, ensuring inclusive access to banking services.

Limitations include the study's cross-sectional design and geographic focus on Egypt, suggesting the necessity for future research involving longitudinal data and cross-cultural comparisons to understand evolving mobile banking adoption patterns and financial inclusion trends globally.

Keywords: Financial inclusion, Mobile banking adoption, Technology Acceptance Model (TAM), Behavioral intentions, Trust, Social influence, Perceived risk, Egypt.

How to Cite: Nehal Metwally, Khaled Gad, Karim Elfaham, Ayman A. Ragab. (2025). Examining the impact of Behavioral intention, Trust, Social Influence and Perceived Risk on the Financial Inclusion on the Egyptian banking sector: The Mediating Role of Mobile Banking. *International Journal of Finance (IJFIN)*, 38(3), 99–142.

DOI: https://doi.org/10.5281/zenodo.15655704

1. Introduction

Globalization and financial liberalization have driven continuous transformation in the banking sector, compelling banks to expand their service offerings and increase reliance on technology. Banks now recognize the strategic importance of investing in technology to reduce costs, attract and retain customers, and satisfy convenience demands. Moreover, technological innovation is a key factor in securing competitive advantage within the services sector (Yin, 2019).

In Egypt, the rapid development of telecommunications infrastructure and the widespread use of mobile phones present a substantial opportunity for expanding self-service technologies (SSTs). Understanding consumer behavior and perceived value toward SSTs is therefore essential (Hamidi and Safareeyeh, 2019; Aziz et al., 2014). Mobile and internet banking have enabled small businesses and individuals to save, transact, and access affordable credit. Yet, many small enterprises remain excluded from mainstream financial services, limiting their access to credit and growth opportunities. This study aims to investigate the factors influencing mobile and internet banking adoption and their impact on financial inclusion for individuals and small firms in Egypt, within the context of recent efforts to promote financial inclusion (Lenka and Barik, 2018).

Financial inclusion is widely recognized as a crucial driver of economic development and poverty reduction. It ensures that individuals and enterprises have access to affordable, appropriate, and sustainable financial products and services, including payments, savings, credit, and insurance (Pradhan et al., 2021). Financial inclusion supports individuals in managing daily expenses, planning long-term goals, and coping with financial shocks. It is also linked to broader development objectives: seven of the United Nations' Sustainable Development Goals highlight financial inclusion as a critical enabler (Kandpal et al., 2023).

Moreover, financial inclusion can bridge gaps between economic opportunity and achievement. Research shows it allows more efficient and secure financial transactions, while expanding access to credit and insurance that mitigate financial risks (Afjal, 2023). However, the complex relationships among financial inclusion, inequality, and macroeconomic development remain incompletely understood, with macro-level effects requiring further investigation (Balliester Reis, 2022).

Quality financial inclusion entails removing both price and non-price barriers to accessing financial services. Kumari (2021) emphasizes affordability, convenience, product suitability, safety, respectful treatment, and client protection as key characteristics. However, mobile money and digital financial services also carry risks such as potential financial loss and security concerns, causing reluctance among some users (Osabutey & Jackson, 2024; Baganzi and Lau, 2017). Additionally, lack of formal education among unbanked populations can limit their ability to use mobile financial innovations effectively (Demirgüç-Kunt et al., 2018).

Trust is a fundamental factor in adopting financial technology innovations. Mwania (2018) notes that client trust—confidence in the integrity and reliability of the service and provider—is crucial for digital financial services adoption. Security concerns, service dependability, and mistrust toward providers can hinder trust development (Murad and Ahmad, 2023; Gammage et al., 2017). Trust can be categorized into trust in the technology system and trust in the service providers, who must demonstrate ability, integrity, and compassion to gain client confidence (Alt et al., 2018; Alrawad et al., 2023). Protecting customers' financial and personal information is vital, as reluctance to disclose sensitive data limits digital banking engagement.

Social influence also plays a significant role in the initial stages of technology adoption. Consumers often rely on friends, family, and coworkers for information and attitude formation toward new technologies (Hanning, 2014; Karanja, 2020). Despite some emerging research in developing countries and the Middle East (e.g., Hamakhan, 2020; Almaiah et al., 2022; Faqih, 2022; Bouteraa et al., 2023), the impacts of trust, perceived risk, and social influence on mobile banking adoption remain underexplored, particularly in Egypt.

This study applies the Technology Acceptance Model (TAM) to examine how behavioral intentions, trust, social influence, and perceived risk affect financial inclusion in Egypt's banking sector, considering the mediating role of mobile banking adoption and the moderating effects of demographics such as age, gender, income, and education.

Contextually, Egypt presents a compelling case study due to its high mobile phone penetration (over 90%) but low mobile banking adoption (only 10% of adults) and relatively low formal financial service access (33%) (World Bank, 2024). This gap highlights significant untapped potential and the need to understand barriers like low digital literacy, trust deficits, and risk perceptions.

Further research gaps include the role of digital financial literacy in adoption and financial inclusion, particularly across socio-economic groups (Amnas et al., 2024), and gender disparities, where men appear more likely to adopt mobile fintech services than women, with underlying causes not fully understood (Ashoer et al., 2024).

The relationship between financial inclusion and the Technology Acceptance Model (TAM) in Egypt's banking sector remains an underexplored area, particularly in terms of how technology adoption influences access to financial services. With increasing mobile banking

penetration, the Egyptian market presents a compelling context to examine the dynamics between technological acceptance and financial inclusion.

Despite advancements in mobile financial services, significant gaps persist in understanding the barriers to financial inclusion. According to recent statistics, only 33% of the adult population in Egypt has access to formal financial services, with a substantial portion of the population still excluded from banking services due to factors like low digital literacy, lack of trust in financial institutions, and high perceived risks. The role of mobile banking in overcoming these barriers is particularly relevant, given that mobile phone penetration in Egypt is above 90%, yet only 10% of the adult population actively uses mobile banking services (World Bank, 2024). This discrepancy highlights the untapped potential of mobile banking adoption in improving financial inclusion.

Several gaps remain in the existing literature, particularly concerning digital financial literacy, which is often cited as a key enabler of technology adoption. While it is acknowledged that digital financial literacy can facilitate mobile banking adoption, its role in financial inclusion is under-researched, especially in developing countries like Egypt. Research by Amnas et al. (2024) emphasizes the need to improve digital literacy to enhance adoption rates, yet little is understood about how this can be achieved across different socio-economic groups in Egypt.

Additionally, gender disparities in technology acceptance and financial inclusion in Egypt need further exploration. Current studies suggest that men are more likely to adopt mobile fintech services than women, but the reasons for this difference, whether cultural, socio-economic, or related to trust and security concerns, are not well understood (Ashoer et al., 2024). Understanding these factors is crucial for addressing gender inequalities in mobile banking adoption.

This research aims to identify the key determinants of financial inclusion in Egypt's banking sector—focusing on behavioral intentions, trust, social influence, and perceived risk—using the Technology Acceptance Model (TAM). It specifically examines how mobile banking adoption, shaped by customer demographics such as age, gender, and socio-economic status, affects financial inclusion. The study seeks to deepen understanding of the barriers and enablers of mobile banking adoption to inform strategies that improve access to financial services for underbanked populations in Egypt.

2. Literature Review and Hypothesis Development

The Technology Acceptance Model (TAM), originally designed to explain how users accept and utilize technology, has become a widely utilized framework across various fields (Sumaryono, 2023; Widyaningrum & Theotista, 2023; Lestari et al., 2023). The model outlines key elements such as ease of use, perceived usefulness, attitude towards use, behavioral intention to use, and actual usage (Harnida, 2023; Abuhassna et al., 2023).

Mobile banking adoption refers to the process of customers mobile banking services integration into their financial activities. Various factors influence the adoption of mobile banking, including technical attributes like relative advantage, compatibility, observability, and perceived risk (Anh, 2023). Challenges such as privacy, security, and convenience risks play acritical role in facilitating mobile banking adoption (Jain et al., 2022).

The Technology Acceptance Model (TAM) is often used to explain and increase mobile banking adoption by focusing on transaction convenience and perceived risk (Sulistyowati, 2021). Previous Studies used the (TAM) and t (UTAUT) to comprehend how customers embrace mobile banking. These frameworks emphasize the importance of qualities, customer views, societal impacts, trust, and hurdles as significant factors influencing adoption Understanding these factors is crucial for banks and policymakers to enhance mobile banking adoption rates effectively. (Begum & Raaj, 2021).

The World Bank (2018) defines financial inclusion as the access to and use of a broad range of affordable and convenient financial products and services by individuals and businesses. In a similar vein, Maged (2023) describes financial inclusion as the totality of efforts aimed at making formal financial services accessible and affordable, particularly for low-income populations.

Financial inclusion is a constantly evolving concept that has emerged in recent times and is still being further explored via ongoing study.

Financial products and services can be classified as formal and informal. The formal ones are provided by regulated financial institutions that adhere to legal rules, while the informal ones are not regulated by any legal rules (UNCDF, 2016). Certain groups in society cannot be accessing the formal financial sector, which limits their ability to effectively handle their finances. Not having access to formal financial services, such as borrowing, saving, and

transferring money, can make individuals more susceptible to negative economic shocks and keep them trapped in poverty (Kabala and Seshamani 2016a; Donovan 2011).

Klapper et al. (2015), studied the main factors that contribute to financial exclusion on a global scale are insufficient funds, high costs, and limited accessibility to financial institutions. In addition, financial exclusion face accesses problems in rural areas compared to urban areas. Due to several reasons as follows:

Firstly, offering formal financial services to rural populations tends to be more expensive for service providers compared to urban areas. This is due the distance and the lack of existing infrastructure. Urban areas, being generally wealthier, are more cost-effective for service providers. Additionally, service providers may have less motivation to serve poorer communities due to the lower revenues they generate (Kabala and Seshamani 2016b). During economic shocks, the poor people often rely on informal financial services to reduce risks.

However, their access to only informal financial services limit their ability to effectively handle their financial obligations (Donovan, 2011) From 2011 to 2014, there was a decrease in the number of adults worldwide without a financial account, going from 2.5 billion to 2 billion (Abrams et al., 2016). Nevertheless, there is a variation in financial inclusion level across different regions. Abrams et al., (2016), revealed that around 66 percent of adults in Sub-Saharan Africa do not utilize formal financial services for saving or borrowing. In high-income countries, only 8 percent of the population remains unbanked.

Egypt's fintech ecosystem offers a compelling case for studying its impact on FI due to several key factors. Egypt has a substantial unbanked population (CBE, 2023b) with FI currently ranking high on its national agenda (Hassouba, 2022). In 2023, it ranked second in fintech VC investments in Africa and third in the MENA region, signifying the industry's growth potential (CBE, 2023b). A well-established informal market in Egypt provides ample room for fintech to disrupt traditional financial services. The formalization of this informal segment is a key aspect of fintech's impact, particularly in a country with a substantial informal economy. Egypt's high poverty rate of 29.7% and its young population with a median age of 24.7 years (World Bank, 2023).

CBE (2022) renders it an attractive market for fintech-driven financial services. As a lower-middle-income country, Egypt holds promising advancement prospects through fintech development. The fact that 37.2% of Egypt's population remains unbanked further underscores

the relevance of this case study (CBE, 2023b). Furthermore, the researchers have access to a valuable network in Egypt, facilitating data collection and interviews. The Egyptian fintech ecosystem involves key actors, including regulators (Central Bank of Egypt and Financial Regulatory Authority), fintech companies, investors, accelerators, and legacy financial institutions (CBE, 2023a). Figure 5 gives a simplified overview of the Egyptian fintech ecosystem.

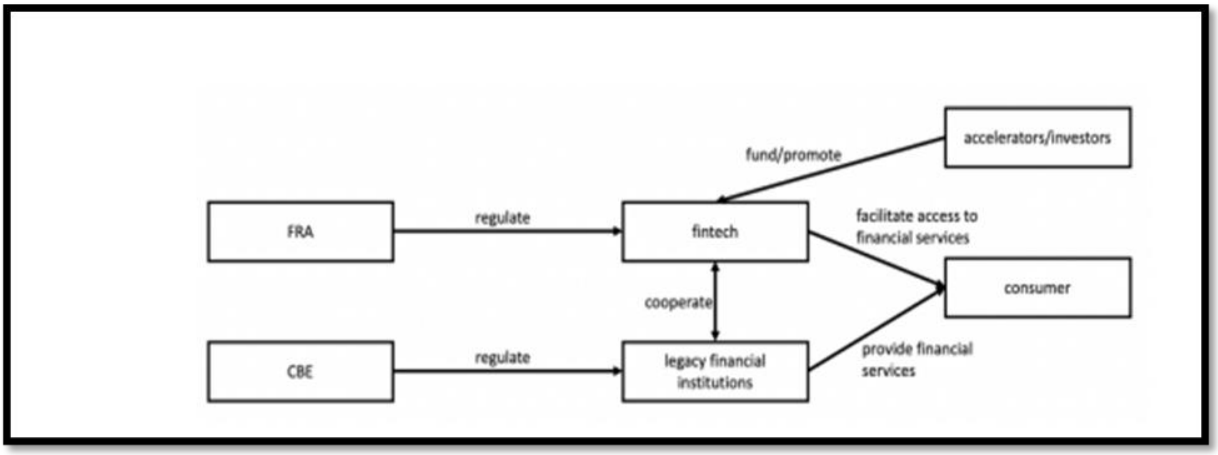

Figure 1. Egyptian fintech ecosystem

Since the establishment of the National Council for Payments NCP in 2016, Egypt's goal of achieving financial inclusion appeared within reach. However, the gradual transition to a cashless economy remains a significant challenge. The main objective of the NCP is to promote financial inclusion for all members of society, with a particular focus on women and youth. This is achieved through measures such as discouraging the use of cash outside of the banking system, encouraging the adoption of electronic payments, and updating the national payment systems. In an ideal scenario, this would lead to an increase in economic growth and enhance the living standards of the citizens (Ayadi et al., 2018).

The NCP strives to ensure the successful implementation of the process of financial inclusion, starting with the government and extending to its citizens. It is advisable to use bank checks for governmental transactions exceeding EGP20, 000. It would be beneficial for public services to provide citizens with the choice of non-cash international payment systems. In addition, governmental bodies have been advised by the NCP to introduce a national payment card called the "National Card Scheme." This card would allow citizens to conveniently make payments for various governmental services (Ayadi et al., 2018).

Egyptian Financial Inclusion Strategy

The Financial Inclusion Strategy (2022 - 2025) published by the Central Bank of Egypt is the inaugural report detailing the scientific methodology employed to assess the degree of financial inclusion in Egypt regarding access, usage, and quality of financial services, aimed at establishing targets and a vision for developing a financial inclusion strategy, as well as identifying implementation priorities.

The strategy paper delineates the methodology employed in the design of the financial services survey targeting a representative sample of consumers and small, medium, and micro companies across both formal and informal sectors. The surveys were executed from September to December 2020, in collaboration with the Central Agency for Public Mobilization and Statistics (CAPMAS) and with technical assistance from the European Union and the German Agency for International Cooperation (GIZ). The objective was to identify the financial services utilized by consumers and businesses, as well as the obstacles to accessing these services, to develop evidence-based financial inclusion policies, encourage savings, and enhance financing to bolster economic development and improve consumers' capacity to confront economic challenges.

 Egyptian Financial Inclusion Strategy Framework

In order to reach consensus on the framework, vision, pillars and enablers of the financial inclusion strategy, the Central Bank of Egypt held multi-stakeholder consultations with various national stakeholders concerned with financial inclusion, which resulted in a consensus on the strategic objectives of financial inclusion and the framework of the strategy.

 Financial Inclusion Strategic Objectives

1. Safeguarding consumer interests and fostering trust in the banking industry.
2. Enhancing financial literacy, augmenting the financial capacities of consumers .and MSMEs, and developing the expertise of bank staff and policymakers about the principles of financial inclusion.
3. Promoting entrepreneurship and start-ups through the provision of non-financial services and the establishment of a comprehensive and efficient infrastructure.
4. Facilitating access to financial services for MSMEs and entrepreneurs, while promoting their incorporation into the formal economy.

5. Enhancing the utilization of digital financial services.
6. Sustaining the advancement of Financial Technology and Digital Financial Infrastructure.
7. Enhancing and solidifying financial services while promoting savings.
8. Ensuring access to and utilization of financial services (both banking and non-banking) for all societal sectors, tailored to consumer requirements.
9. Facilitating the ecosystem to attain sustainable growth within the financial industry.

2.3.6.2 Financial Inclusion in Egypt statistics:

The Central Bank of Egypt (CBE) published the fundamental financial inclusion figures for 2023, emphasizing a significant increase in financial inclusion rates in Egypt. Approximately 46.9 million Egyptians, aged 16 and above, possess transactional accounts—comprising bank accounts, Egypt Post accounts, mobile wallets, and prepaid cards—out of a total adult population of 66.4 million. the conclusion of 2023, the financial inclusion rate reached 70.7%, an increase from 64.8% in December 2022, indicating an overall growth rate of 174% from 2016 to 2023.

Egypt's financial inclusion growth rate, over the past years, marked one of the best among peer countries. The growth rate is reflected through the significant increase in the number of citizens benefitting from financial services that meet their needs, the stimulation of the customers' savings, the facilitation of financial transactions, and reduction of the cost and time required to execute their transactions, while availing these services at any time and from any place, which contribute to citizens' welfare, and improve their living conditions.

With regards to the financial inclusion of women, the indicators showed an upsurge in the number of financially included women, reaching 20.3 million women, out of a total of 32.3 million at the end of December 2023, with a growth rate of 244% compared to 2016, signifying an inclusion rate of 62.7%.

The financial inclusion rate of youth (aged 16 to 35) which amount to a total of 36.6 million citizens, reached 51.5%, with a growth rate of 48.5% from 2020 to 2023.

The remarkable upsurge in financial inclusion rates is backed by the fruitful collaboration with all ministries and authorities on the national level, through their active participation in many joint initiatives and events targeting different customer segments. This is in addition to

the participation of the Central Bank of Egypt in the first phase of the presidential initiative "Decent Life" by directing banks to be present in many villages, promoting banking products and services, enabling the financial infrastructure, in addition to conducting financial awareness activities.

In terms of availing an enabling environment that encourage dealing with the banking sector, the Central Bank has issued several regulations to overcome obstacles facing all segments of society to acquire financial services that suit their needs, such as allowing the opening of accounts for young people from the age of 16, in addition to facilitating the opening of "Economic Activity Account" for handicraftsmen, and "Financial Inclusion Account" for citizens using only their National ID.

Furthermore, the six financial inclusion events organized under the auspices of the Central Bank of Egypt throughout the year, in synchronization with global events, contribute to reaching for and communicating with citizens in remote and underprivileged areas. During these events, banks are allowed to be present outside their branches and to avail opening accounts with no administration fees or minimum account balance, in addition to disseminating financial literacy, to encourage citizens to use various financial products.

Releasing the core set of financial inclusion indicators by the Central Bank of Egypt is of great importance, as they contribute effectively to track the progress of financial inclusion rates which enable the development of policies that support the economic empowerment of citizens.

2.1 Behavioral Determinants of Financial Inclusion

Behavioral intention has emerged as a critical factor influencing financial inclusion, especially in the context of digital financial services. Prior research highlights diverse drivers of behavioral intention, including technological factors such as perceived usefulness, trust, and ease of use (Budi et al., 2023), financial literacy and attitudes (Babita et al., 2022), and social-psychological constructs such as attitudes and perceived control, as per the Theory of Planned Behavior (Bushra & Aalia, 2020). Other studies emphasize cultural and religious compatibility, especially in Islamic finance contexts (Yusri & Chairina, 2023; Abdurrahman et al., 2021), and behavioral-economic considerations, such as perceived safety and institutional trust (Iryna et al., 2020). However, these studies often differ in focus, with limited integration across user types or financial service environments. This fragmentation points to the need for a more holistic examination that accounts for demographic, cultural, and technological variations. In

response, this study investigates behavioral intention in Egypt's mixed financial landscape.

Hypothesis 1 (H1): Behavioral intention positively affects financial inclusion.

Trust is another foundational enabler of financial inclusion. It bridges the gap between consumers and formal financial institutions, especially in contexts of perceived risk or historical exclusion. Research shows that both cognitive and affective trust influence mobile financial inclusion through social capital (Aleksandra & Stanisław, 2022), while trust in digital platforms enhances adoption among MSMEs (Enock et al., 2022). Moreover, general trust in financial institutions, including perceptions of fairness and transparency, shapes consumer willingness to engage with formal banking (George et al., 2019). Although widely acknowledged in mobile and fintech literature, trust has been less explored in traditional banking settings in Middle Eastern and North African contexts, where institutional trust may vary. This study addresses this gap by examining the role of trust among Egyptian retail banking customers.

Hypothesis 2 (H2): Trust positively affects financial inclusion.

2.1.3 The Impact of Social Influence on Financial Inclusion

Social influence plays a growing role in shaping financial inclusion by affecting individuals' attitudes and behaviors toward financial services. Khan et al. (2023) highlight that social interaction enhances the effect of financial literacy on inclusion, implying that individual knowledge must be reinforced by supportive social dynamics. Atadouanla Segning (2023) expands on this by pointing to sociocultural elements—such as religion, language, and community norms—as critical contextual factors. Conversely, Yuniarti and Safitri (2022) focus on FinTech adoption, showing how peer influence and social trends drive technology acceptance. Although these studies agree on the importance of social influence, they vary in emphasis—from broad cultural conditions to digital peer effects. Moreover, few studies examine the interaction between social influence and other factors such as trust or perceived risk. This study addresses that gap within the Egyptian banking context.

Hypothesis 3 (H3): Social influence positively affects financial inclusion.

2.1.4 The Impact of Perceived Risk on Financial Inclusion

Perceived risk is widely cited as a barrier to the adoption of digital financial services and, consequently, to financial inclusion. Davey et al. (2020) emphasize that risk perceptions, particularly about biometric technologies, reduce users' willingness to adopt financial

innovations. Durner and Shetret (2015) similarly report that concerns about reliability and security deter financial technology use in rural communities. At the institutional level, Al-Gasawneh et al. (2022) warn that regulatory-driven de-risking can lead to the exclusion of vulnerable populations, thus counteracting financial inclusion objectives. These findings reveal a gap in understanding how individual risk perceptions align or conflict with institutional practices, and how such tensions affect service access.

Hypothesis 4 (H4): Perceived risk negatively affects financial inclusion.

2.4.9 The impact of mobile banking adoption on financial inclusion

The relationship between mobile banking adoption and financial inclusion has been the subject of extensive research, with studies indicating that mobile banking plays a significant role in improving financial access, particularly in developing regions. According to Bashir & Muhamed (2023), mobile banking adoption significantly impacts financial inclusion by providing accessible, convenient, and cost-effective financial services. This is particularly true in regions where traditional banking infrastructure is limited or non-existent. As mobile banking allows individuals to access financial services remotely, it helps bridge the gap between the banked and unbanked populations.

Several factors drive the adoption of mobile banking, which in turn promotes financial inclusion. Muchandigona & Kalema (2023) suggest that social influence, performance expectancy, risk perception, and trust perception are crucial elements in the decision to adopt mobile banking services. The role of social influence, for example, is particularly significant in communities where recommendations from trusted individuals can encourage others to embrace mobile banking, contributing to broader financial inclusion. Additionally, performance expectancy—essentially the perceived usefulness of mobile banking—is a critical factor in adoption, as individuals are more likely to adopt services they believe will improve their financial well-being.

The COVID-19 pandemic further highlighted the role of mobile banking as a contactless tool for financial inclusion. Zeya (2022) emphasized that the pandemic increased the reliance on mobile banking for safe, remote financial transactions. Jain et al. (2022) also pointed out that during the crisis, factors like higher transaction charges and user satisfaction significantly influenced mobile banking adoption, especially in regions where physical banking access was limited. The crisis demonstrated the necessity of mobile banking as a key tool in promoting

financial inclusion, underscoring its role in providing essential services during challenging times.

However, despite the significant benefits, challenges related to perceived privacy, security, and convenience risks continue to hinder the adoption of mobile banking, particularly in rural areas. Mwangasu et al. (2022) highlight that addressing these risks is essential to ensuring broader mobile banking adoption. Users in rural areas may be more vulnerable to concerns about privacy breaches or fraud, making it critical for financial institutions to enhance security and build trust to overcome these barriers.

In Kenya, mobile banking services such as account information access, transactional services, mobile loans, and paperless banking have shown a positive and significant association with financial inclusion (Goswami et al., 2022). The ease of accessing financial services, such as applying for loans and managing accounts via mobile phones, has attracted more customers, particularly in rural and underserved areas. This demonstrates the powerful role of mobile banking in expanding financial inclusion by making financial services more accessible to those who previously had limited access.

Similarly, the expansion of financial technologies, including mobile money and digital wallets, has bridged the gap between the banked and unbanked populations in rural areas (Young & Young, 2022). These technologies offer affordable and reliable methods for conducting financial transactions, further promoting financial inclusion by enabling previously excluded populations to participate in the formal financial system.

In the United States, high adoption rates of financial technology services, including mobile banking, among socio-economically disadvantaged groups—such as African American households—have also contributed to financial inclusion. These groups have increasingly turned to FinTech services for affordable and reliable financial transaction methods, further supporting the idea that mobile banking adoption can positively impact financial inclusion.

Based on the reviewed evidence, the following hypothesis is proposed:

H5: Mobile banking adoption mediates the relationship between Behavioral intentions (BI) and financial inclusion (FI)

H6: Mobile banking adoption mediates the relationship between social influence (SI) and financial inclusion (FI)

H7: Mobile banking adoption mediates the relationship between trust (T) and financial inclusion (FI)

H8: Mobile banking adoption mediates the relationship between perceived risk (PR) and financial inclusion (FI)

3. Method

This section presents the methodology employed in this research, detailing the research design, population, sampling procedures, data collection methods, and analytical techniques. It also clarifies the rationale for selecting the sample and the approach to obtaining participant responses. The study targeted a diverse sample of bank customers from multiple banks within the Egyptian banking sector to enhance the representativeness and reliability of the findings.

3.1 Research Approach and Design

A quantitative research approach was utilized to empirically investigate relationships among variables and test hypotheses. Cavaleri et al. (2018) define quantitative research as a method involving the examination of hypotheses and research questions to evaluate connections, differences, causal linkages, and intervention effects through logical and numerical analysis.

A descriptive survey design was adopted to collect primary data. As Mathurin (2020) notes, surveys are suitable for descriptive, exploratory, and explanatory research. According to Human (2015), surveys collect self-reported data from participants via structured questionnaires. This study used self-administered online questionnaires, disseminated directly by the researcher and through banking sector contacts.

The descriptive survey design was selected to accurately capture behaviors, perceptions, and attitudes of bank customers regarding behavioral intention, trust, perceived risk, and social influence on financial inclusion, with mobile banking adoption as a mediating factor and demographic characteristics as moderators within the Egyptian banking context.

3.2 Research Population, Sample, and Sampling Method

3.2.1 Population

The study population consisted of retail **bank customers** in Alexandria Governorate, Egypt, including regular account holders and occasional transactional users. Reid (2013)

defines a population as the entire group of individuals sharing relevant characteristics. Due to practical constraints, a representative sample was selected.

3.2.2 Sampling Method and Justification

Convenience sampling was employed, selecting **bank customers** based on availability and willingness, consistent with exploratory research practices (Dörnyei, 2007; Creswell & Creswell, 2022). The banking sector's security protocols and customer availability limited randomized sampling.

Participants were approached during visits to multiple bank branches in Alexandria. Bank employees also facilitated questionnaire distribution within their networks.

3.2.3 Sampling Frame and Data Collection

The sampling frame consisted of retail **bank customers** from various banks in Alexandria. Online questionnaires were distributed, supported by bank employees who shared them with customers and acquaintances.

Out of 430 responses received, 420 were valid after screening for completeness and consistency, indicating strong participant engagement.

3.2.4 Sample Size Determination

According to the unlimited population minimum number of necessary samples to meet the desired statistical constraints according to online sample size calculator.

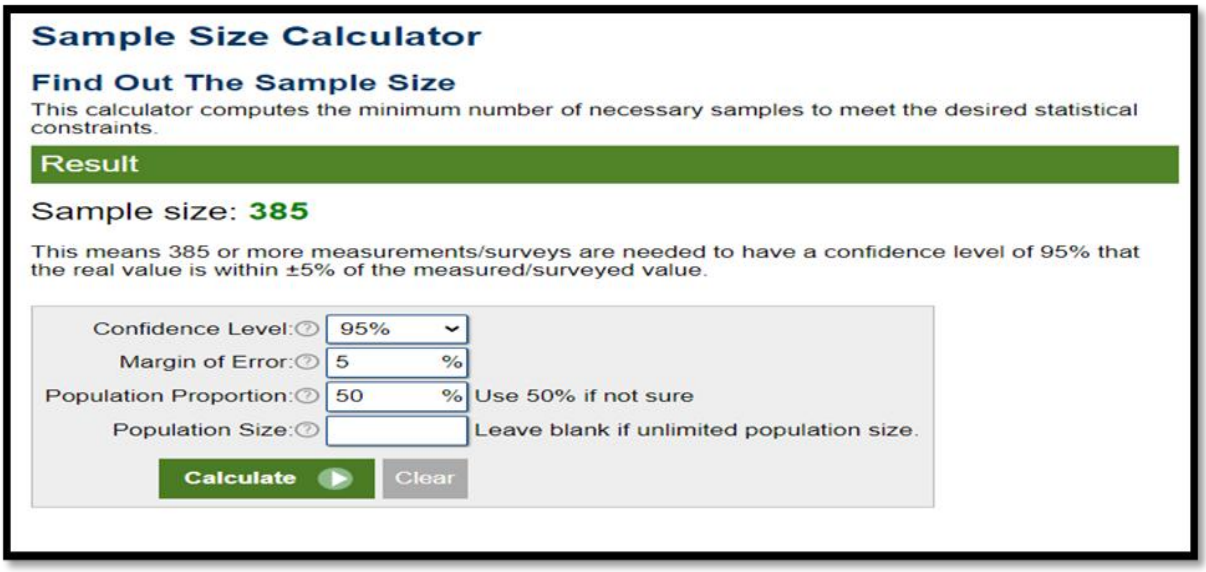

Figure 2: Sample Size Calculator

Using online calculators (Raosoft, SurveyMonkey) with a 95% confidence level and 5% margin of error, a minimum sample size of 384 was recommended. The study's 420 valid responses exceed this threshold, supporting adequate statistical power

3.4.1 Data Collection Method

This study utilized two data collection approaches: secondary data review and primary data collection.

3.4.1.1 Library Research (Secondary Data)

Library research involves analyzing existing sources such as books, journals, dissertations, and online materials (Ramesh, 2008). This secondary data, collected by other researchers, was used to provide foundational background and context.

3.4.1.2 Study Instrument (Primary Data)

Primary data were collected using a structured questionnaire with closed-ended questions rated on a five-point Likert scale. The questionnaire measured key variables including behavioral intentions, trust, social influence, perceived risk, mobile banking adoption, and financial inclusion, adapted from validated scales in previous studies (e.g., Tang et al., 2018; Walker & Johnson, 2006; Zhao et al., 2008; Okello et al., 2018).

The instrument was tailored to the Egyptian banking context based on a thorough literature review. The choice of a questionnaire was informed by the lack of prior academic studies on customer behavior in Egypt's banking sector and by industry practice, where similar tools are used for product development within banks.

3.4.2 Pilot Study

A pilot study was conducted with 48 participants to evaluate the reliability and validity of the questionnaire and to identify potential issues such as ambiguous questions or participant recruitment difficulties (Taylor et al., 2006). This preliminary test ensured the instrument's clarity and feasibility for the main study, confirming that respondents understood the items as intended (Creswell, 2009). Validity and reliability analyses were performed to verify the suitability of the data for hypothesis testing.

3.4.2.1 Reliability Test of the Instrument

Reliability, indicating the consistency and repeatability of results, was assessed using Cronbach's alpha, a widely accepted measure for Likert-scale instruments (Bryman, 2008). The pilot involved 55 respondents to test the internal consistency of the scales. Measures suggested by Blakenship (2009) were implemented to enhance internal validity, including the use of standardized questions and having a single researcher administer data collection to ensure uniformity.

The measurement model demonstrated generally strong psychometric properties across most constructs. Financial Inclusion and Behavioral Intention showed excellent reliability and validity, with high Cronbach's alpha values (above 0.94) and AVEs exceeding 75%, confirming robust internal consistency and convergent validity. Mobile Banking Adoption and Perceived Risk also exhibited good reliability and validity, with acceptable KMO values and factor loadings mostly above 0.60. Trust showed moderate reliability and validity, suitable for exploratory analysis, while Social Influence presented some challenges, with low reliability due to one poorly performing item that was subsequently removed and replaced. Overall, the results support the adequacy of the measurement instruments for further analysis.

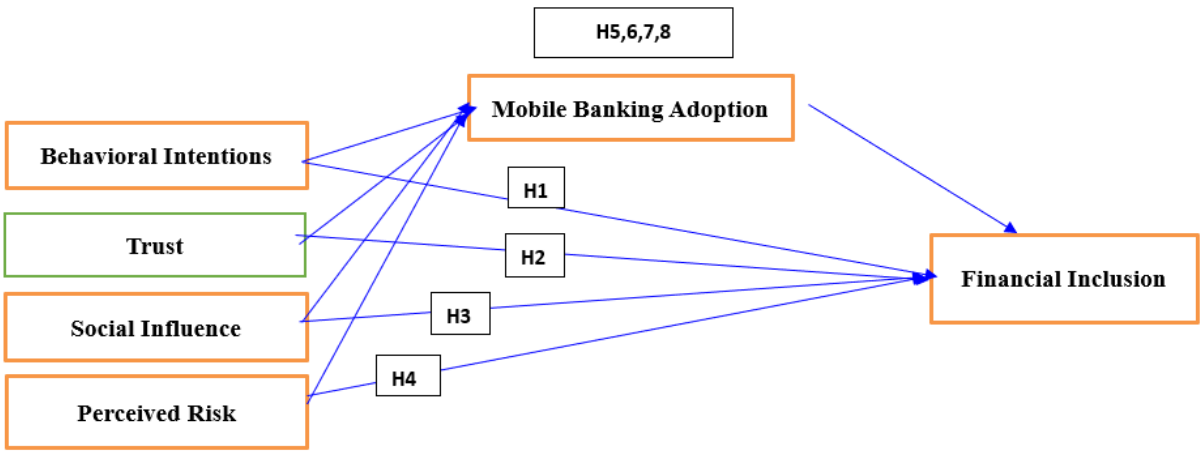

Fig 3. Research Framework

Thus, the current research framework could be expressed using the following figure which has been built into Four Hypotheses.

3.4.3 Data Analysis Techniques

To validate the measurement instruments, the study employed statistical methods to assess reliability and validity before hypothesis testing, focusing on variables including behavioral intentions, trust, social influence, perceived risk, mobile banking adoption, and

financial inclusion. Linear regression analysis was used to model and predict relationships between variables. Mediation analysis, conducted via AMOS bootstrapping, was applied to explore indirect effects and clarify how independent variables influence dependent variables through mediators. Given the study's conceptual framework involving multiple dependent, independent, moderator, and mediator variables, Structural Equation Modeling (SEM) was chosen to simultaneously estimate these complex interrelationships. Data analysis was performed using SPSS version 29 and AMOS 28 to test the research hypotheses and evaluate the overall model fit.

4. Results

In the recent study multiple regressions used to model and predict the relationship between variables (Roustaei, 2024). The analysis results revealed the following:

H1: Behavioral intentions have a positive significant impact on financial inclusion

Table 1. Summary of Linear Regression for the Impact of behavioral intentions (BI) on financial inclusion - (N=420)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R square
		B	Std. Error	Beta			
1	(Constant)	2,207	0,246		8,959	0,000	
	BI	0,302	0,056	0,554	5,362	0,000	0,306916

As mentioned in table (1) behavioral intentions (BI) has direct positive significant impact on financial inclusion (B=0,302*, p-value<0.05) which reveals the acceptance of the 1st main hypothesis. On the other hand, the R square is 0.306, which means that behavioral intentions (BI) explain 30.6 % of the variation in financial inclusion. The regression equation could be formulated as follows:

FI=2,207+0,302BI

H2: Trust has a positive significant impact on financial inclusion

Table 2. Summary of Linear Regression for the Impact of trust (T) on financial inclusion - (N=420)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R square
		B	Std. Error	Beta			
1	(Constant)	2696,000	.211		12776,000	<,05	
	T	.268	.068	.689	3930,000	<,05	0,474721

As mentioned in table (4.9) trust (T) has direct positive significant impact on financial inclusion (B=.268*, p-value<0.05) which reveals the acceptance of the 2nd main hypothesis. On the other hand, the R square is 0,474721, which means that trust (T) explains 47.4 % of the variation in financial inclusion. The regression equation could be formulated as follows:

FI=2,696+.268 T

H3: Social influence has a positive significant impact on financial inclusion

Table 3. Summary of Linear Regression for the social influence (SI) on financial inclusion - (N=420)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R square
		B	Std. Error	Beta			
1	(Constant)	2,105	.296		6798,000	<,05	
	SI	.422	.083	.441	5083,000	<,05	0,292681

As mentioned in table (3) social influence (SI) has direct positive significant impact on financial inclusion (B=.422*, p-value<0.05) which reveals the acceptance of the 3rd main

hypothesis. On the other hand, the R square is 0,292681, which means that social influence (SI) explains 29.2 % of the variation in financial inclusion. The regression equation could be formulated as follows:

FI=2,105+.422 SI

H4: Perceived risk has a negative significant impact on financial inclusion

Table 4. Summary of Linear Regression for the Impact of perceived risk (PR) on Financial inclusion - (N=420)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R square
		B	Std. Error	Beta			
1	(Constant)	2.70	0.22		12.47	<,05	0.341056
	PR	-2.22	0.06	0.58	8.82	<,05	

As mentioned in table (4) perceived risk (PR) has direct negative significant impact on financial inclusion (B=-2.22*, p-value<0.05) which reveals the acceptance of the 4th main hypothesis. On the other hand, the R square is 0.341056, which means that perceived risk (PR) explains 34.1 % of the variation in financial inclusion. The regression equation could be formulated as follows:

FI=-2.70-2.22PR

Table 5. Summary of Multiple Regression for the Impact of All Factors on Financial inclusion - (N=420)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R square
		B	Std. Error	Beta			
1	(Constant)	1.168	0.346		23.375	0.001	0.56
	BI	0.188	0.066	0.158	12.836	0.004	
	SI	0.164	0.102	0.094	11.605	0.005	
	T	0.17 7	0.075	0.125	12.346	0.019	
	PR	0.118	0.063	0.097	21.888	0.020	

Table 5 presents the multiple linear regression analysis was conducted to examine the influence of several independent variables (BI, SI, T, and PR) on the dependent variable. The model yielded the following results:

The results of the multiple linear regression analysis reveal that the independent variables—Behavioral Intention (BI), Social Influence (SI), Trust (T), and Perceived Risk (PR)—collectively explain a substantial proportion of the variance in the dependent variable, with an R^2 value of 0.56. This indicates that approximately 56% of the variability in the dependent construct can be accounted for by the proposed model, which demonstrates a moderately strong explanatory power.

All predictors are statistically significant at the 0.05 level, with BI ($p = 0.004$), SI ($p = 0.005$), T ($p = 0.019$), and PR ($p = 0.020$) contributing meaningfully to the model. Among them, Behavioral Intention exhibits the highest standardized beta coefficient ($\beta = 0.158$), suggesting it exerts the greatest relative influence on the outcome variable.

The unstandardized regression equation derived from the model is as follows:

$$Y=1.168+0.188(BI)+0.164(SI)+0.177(T)+0.118(PR)$$

4.4.2Mediation Analysis:

Boost rapping approach using AMOS 28 was used to test the significance of mediation. This approach has been advocated as an appropriate in such cases because it avoids normality assumptions of the sampling distribution through the application of bootstrapping confidence intervals.

The mediation analysis results were as follows:

H6: Mobile banking adoption mediates the relationship between Behavioral intentions (BI) and financial inclusion (FI)

Table 6. Summary of Mediation Analysis of Mobile Banking Adoption on the relationship between Behavioral intentions (BI) and financial inclusion (FI) - (N=420)

	Effect	**SE**	**L.C.I**	**U.C.I**	**P-value**
Through MB	**.268**	**0.040**	**.207**	**.335**	**.010**

As mentioned in table 6 the indirect (mediated)effect of behavioral intentions(BI) on financial inclusion (FI) is significant (p-value=.010,L.C.I=.207,U.C.I=.335),with effect (.268),which means when behavioral intentions (BI) goes up by 1 ,FI goes up by .268.This is in addition to the direct (unmediated) effect that behavioral intentions have on financial inclusion.

H7: Mobile banking adoption mediates the relationship between social influence (SI) and financial inclusion (FI)

Table 7. Summary of Mediation Analysis of Mobile Banking Adoption on the relationship between Social Influence (SI) and financial inclusion (FI) - (N=420)

	Effect	SE	L.C.I	U.C.I	P-value
Through MB	**.275**	**0.61**	**.172**	**.378**	**.010**

As mentioned in table 7 the indirect (mediated) effect of social influence (SI) on financial inclusion (FI) is significant (p-value=.010,L.C.I=.172,U.C.I=.378),with effect (.275),which means when social influence (SI) goes up by 1 ,FI goes up by .275.This is in addition to the direct (unmediated) effect that social influence has on financial inclusion.

H8: Mobile banking adoption mediates the relationship between trust (T) and financial inclusion (FI)

Table 8. Summary of Mediation Analysis of Mobile Banking Adoption on the relationship between Trust (T) and financial inclusion (FI) - (N=420)

	Effect	SE	L.C.I	U.C.I	P-value
Through MB	**.123**	**0.045**	**.44**	**.204**	**.010**

As mentioned in table 8. the indirect (mediated) effect of trust (T) on financial inclusion (FI) is significant (p-value=.010, L.C. I=.44, U.C. I=.204), with effect (.123), which means when trust (T) goes up by 1, FI goes up by. 123.This is in addition to the direct (unmediated) effect that trust has on financial inclusion.

H9. Mobile banking adoption mediates the relationship between perceived risk (PR) and financial inclusion (FI)

Table 9. Summary of Mediation Analysis of Mobile Banking Adoption on the relationship between Perceived Risk (PR) and financial inclusion (FI) - (N=420)

	Effect	SE	L.C.I	U.C.I	P-value
Through MB	**-0.073**	**0.037**	**-0.020**	**-0.139**	**.010**

As mentioned in table 9 the indirect (mediated) effect of perceived risk (PR) on financial inclusion (FI) is significant (p-value=.010, L.C. I=-0.020, U.C. I=-0.139), with effect (-0.073), which means when perceived risk (PR) goes up by 1, FI goes down by 0.073. This is in addition to the direct (unmediated) effect that trust has on financial inclusion.

5. Discussion

The results of this study support Hypothesis H1, confirming that behavioral intention positively influences financial inclusion. This aligns with a robust body of literature that emphasizes the predictive power of behavioral intentions on the adoption of financial technologies (e.g., Budi et al., 2023; Babita et al., 2022). Factors such as perceived ease of use, trust, brand image, and perceived benefits significantly shape individuals' intentions to engage with financial services.

Consistent with the Theory of Planned Behavior (Ajzen, 1991), this study affirms that attitudes, subjective norms, and perceived behavioral control are essential drivers of individuals' willingness to adopt financial services. Notably, the research extends this framework to both conventional and Islamic financial systems, reinforcing findings by Bushra and Aalia (2020) and Yusri and Chairina (2023) on the relevance of intention in contexts such as Islamic peer-to-peer lending.

In line with previous studies (e.g., Abdurrahman et al., 2021; Iryna et al., 2020), this research underscores behavioral intention as a practical lever for improving access to financial services. It supports policy strategies aimed at enhancing financial literacy, addressing consumer perceptions, and fostering trust—all of which can increase participation in formal financial systems, especially among underserved populations.

Hypothesis H2, which proposes that trust positively affects financial inclusion, was also supported. This finding reaffirms trust as a critical enabler of financial service adoption, particularly in digital and mobile banking contexts. Trust reduces perceived uncertainties related to security, reliability, and data privacy—barriers that are often cited in regions with historically weak financial infrastructure (George et al., 2019; Kumar et al., 2023; Simatele, 2024).

The study finds that trust significantly influences individuals' decisions to engage with mobile banking platforms and fintech services. This is consistent with Apriani et al. (2023), who demonstrated a strong relationship between trust and the intention to adopt digital financial services. Importantly, trust is not limited to technological confidence but also encompasses institutional credibility, transparency, and the perceived integrity of financial service providers.

Therefore, enhancing trust—especially in digital financial ecosystems—should be a cornerstone of financial inclusion strategies, particularly for marginalized groups who may harbor skepticism toward formal financial systems.

Hypothesis H3 was also supported, indicating that social influence positively impacts financial inclusion. Social influence—encompassing peer behavior, cultural norms, and familial expectations—shapes individual financial decisions and adoption behaviors. This finding supports prior research by Khan et al. (2023) and Atadouanla Segning (2023), which emphasized the influence of social networks and informal institutions in shaping financial behaviors.

The study finds that individuals often rely on peer recommendations and observations to assess the credibility and usability of financial services. In regions with low financial literacy or high institutional mistrust, this peer-based validation becomes essential. Cuéllar (2024) noted the importance of social capital in expanding credit access, a view corroborated by the current research. As more individuals within a community adopt financial technologies, social validation encourages broader adoption.

Overall, integrating social dynamics and cultural relevance into financial outreach strategies enhances service uptake and promotes inclusive financial ecosystems.

The study's findings support Hypothesis H4, affirming that perceived risk has a significant negative effect on financial inclusion. This result is consistent with studies by Devi et al. (2020), Kornivska (2020), and Al-Gasawneh et al. (2022), who highlighted how

psychological concerns—such as fears of fraud, data breaches, and technological malfunctions—deter users from engaging with digital financial services.

Perceived risk is often magnified through social narratives, media coverage, and past negative experiences. In communities with low digital literacy or limited exposure to financial services, even isolated incidents can lead to widespread distrust. Davey et al. (2020) noted that technological features like biometric authentication or algorithmic credit scoring can inadvertently trigger skepticism, despite their intended security benefits.

Moreover, the study draws attention to the paradox of institutional de-risking. As financial institutions introduce stringent compliance measures (e.g., KYC protocols) to mitigate systemic risks, they may unintentionally exclude vulnerable populations—such as individuals without formal identification or proof of address. This unintended consequence of financial regulation exacerbates exclusion rather than promoting inclusion.

Addressing perceived risk requires community-level interventions, public education campaigns, and consumer protection frameworks. Correcting misinformation and fostering transparent communication are key to mitigating fears and facilitating broader financial participation.

The results support Hypothesis H5, confirming that mobile banking adoption significantly mediates the relationship between behavioral intentions and financial inclusion. This highlights the pivotal role of mobile banking as a mechanism that transforms users' intentions into actual engagement with formal financial services. Individuals' willingness to adopt mobile banking—shaped by perceived usefulness, ease of use, trust, and social influence—translates into increased participation in the T

These findings align with Mefoute Badiang and Nkwei (2024), who demonstrated that mobile banking significantly expands financial access in rural Africa. Similarly, Shaheen et al. (2024) showed a sequential pathway from behavioral intention to adoption, and then to financial inclusion, moderated by trust and financial literacy.

the findings support Hypothesis H6, confirming that mobile banking adoption mediates the relationship between trust and financial inclusion. Trust plays a foundational role in user engagement with mobile banking services and enhances the pathway from trust to financial inclusion through increased adoption.

This mediation suggests that trust influences both the likelihood of adoption and the depth of engagement. Trust reduces users' concerns about security, reliability, and privacy, thereby making mobile banking platforms more appealing and accessible. These results are consistent with Simatele (2024), who emphasized the importance of secure interfaces and reliable platforms in fostering trust, leading to higher adoption and better financial outcomes.

In essence, trust not only directly contributes to financial inclusion but also operates indirectly by enhancing mobile banking adoption—thus serving as both a prerequisite and an enabler of inclusive financial engagement.

Hypothesis H7 is supported, indicating that mobile banking adoption mediates the relationship between social influence and financial inclusion. This emphasizes the role of social dynamics—peer recommendations, family opinions, social media, and community norms—in shaping individuals' decisions to adopt mobile banking.

Social influence accelerates technology adoption by providing social proof and reducing uncertainty. As more individuals within a social circle or community adopt mobile banking, others are likely to follow, leading to cascading effects on financial inclusion. This finding is consistent with Arora et al. (2024), who identified social influence as a significant driver of mobile banking usage and broader financial participation.

Thus, social influence indirectly promotes financial inclusion through its positive impact on mobile banking adoption.

Hypothesis H8 is also supported, confirming that mobile banking adoption significantly mediates the relationship between perceived risk and financial inclusion. Perceived risk negatively influences users' willingness to adopt mobile banking services, which in turn affects their level of financial inclusion.

The study indicates that as perceived risk decreases, the likelihood of mobile banking adoption increases, ultimately enhancing access to formal financial services. High levels of perceived risk—whether related to data security, fraud, or service reliability—deter adoption. These findings are in line with Rido et al. (2023), who noted that perceived risk is a major barrier to technology adoption in financial services, especially in emerging markets.

Consequently, reducing perceived risk through consumer education, secure platforms, and regulatory protections is essential for boosting mobile banking adoption and, by extension, financial inclusion.

3 Recommendations

In light of the findings, the current study proposes the following actionable recommendations to enhance financial inclusion through fintech adoption in Egypt:

1. Set Measurable FinTech Inclusion Targets with Regional Prioritization

To accelerate mobile banking adoption, policymakers and financial institutions should commit to increasing mobile financial service users by at least 20% within three years, prioritizing Upper Egypt and rural governorates. Collaboration with mobile network operators should ensure 95% national mobile network coverage, with subsidies or infrastructure support in underserved areas. Targeted rollouts of mobile wallets, biometric verification tools, and micro-loan platforms should include quarterly impact assessments to recalibrate outreach efforts and identify bottlenecks.

2. Launch a National Digital Financial Literacy Mission

Government agencies, in partnership with fintech firms and NGOs, should deploy modular digital literacy programs aimed at reaching 500,000 individuals in rural and peri-urban areas within two years. Programs must be delivered in Arabic using interactive tools, gamification, and scenario-based learning, accessible via mobile and offline platforms. Monitoring and evaluation should be embedded using digital badges or certificates to track individual learning outcomes and community-level behavioral shifts.

3. Create an Agile and Inclusive FinTech Regulatory Sandbox

The Central Bank of Egypt and financial regulators should establish a dedicated FinTech Innovation Unit and introduce a regulatory sandbox model within 18 months to allow for controlled testing of innovative financial products. Regulatory priorities should balance consumer protection, data security (aligned with GDPR standards), and interoperability between fintech and traditional banks. Priority access and incentives should be given to startups targeting youth, women, and rural populations.

4. Deploy Behavioral Nudges to Encourage Trust and Trial Among Marginalized Groups

Develop culturally informed behavioral campaigns using "nudge theory"—such as SMS reminders, simplified onboarding processes, and testimonial-based storytelling from local fintech adopters—to improve fintech perception by at least 30% within one year, based on attitudinal surveys. Use community influencers, religious leaders, and radio programs in rural Egypt to boost trust. Piloting first-use rewards (e.g., free transactions, airtime credits) can accelerate initial adoption, with cost-effectiveness evaluations every six months.

5. Design Context-Specific Financial Products for Low-Income Groups and Informal SMEs

Banks and fintech firms should co-develop financial tools that reflect the realities of informal work, including mobile-based savings circles, pay-as-you-go insurance, and seasonal microcredit. These products should be accessible on USSD-enabled feature phones. Set an annual goal of 100,000 new accounts in rural and low-income urban communities, and integrate financial health indicators to track user well-being beyond transactional metrics.

6. Expand Smart Access Points with AI-Powered Agent Networks

Establish 1,000+ smart digital kiosks and mobile agent points in underserved areas over three years, using AI-based geo-analytics to determine optimal placement. Train local shop owners, pharmacists, or post office staff as certified banking agents. These access points should offer basic services like remittances, bill payments, and microloans, supported by multilingual voice interfaces and biometric authentication for users with low literacy.

7. Position Banks as Innovation Catalysts Through FinTech Co-Creation Labs

Encourage public and private banks to co-invest in FinTech Co-Creation Labs, fostering at least five inclusive finance innovations annually. These labs should host hackathons, incubator programs, and student-led innovation challenges focusing on blockchain for remittances, AI credit scoring, and digital identity solutions. Reward pilots that demonstrate measurable impact on financial access for women, youth, or refugees with grants and tax incentives.

Despite the valuable insights generated, this study has several limitations that should be considered when interpreting the findings:

While the study provides valuable insights into fintech adoption and financial inclusion, several limitations must be acknowledged:

- Reliance on Self-Reported Data: The use of self-administered questionnaires introduces potential biases, including social desirability and recall bias, which may inflate positive behaviors or underreport barriers, thus affecting result validity.
- Limited Generalizability: The sample represents a specific Egyptian population segment, limiting extrapolation to the entire country or other developing economies with differing socio-economic and cultural contexts.
- Cross-Sectional Design: The snapshot nature of the study restricts causal inferences and overlooks dynamic changes in fintech adoption and inclusion over time. Longitudinal designs would capture evolving trends more accurately.
- Measurement Constraints: Complex constructs like trust and perceived risk may be influenced by unmeasured variables or contextual nuances not fully captured by the Technology Acceptance Model (TAM) framework, which may omit relevant factors unique to Egypt's financial ecosystem.
- Inconsistent Literature Findings: Mixed evidence on social and cultural impacts on mobile banking adoption underscores the context-specific nature of these relationships. This ambiguity necessitates cautious interpretation and calls for deeper localized investigation.

To build on this study and address existing gaps, future research should consider:

- Investigating Additional Mediators and Moderators: Explore variables such as actual fintech usage behavior, financial literacy, digital self-efficacy, and access to infrastructure that may influence the relationship between behavioral intention and financial inclusion.
- Examining External and Contextual Influences: Assess how socio-economic conditions (e.g., income volatility, urban-rural disparities) and rapid fintech evolution impact trust, social influence, perceived risk, and ultimately, inclusion outcomes.
- Expanding Psychological and Social Constructs: Include factors like self-control, service compatibility, cultural norms, and bank personnel attitudes to deepen understanding of adoption barriers and facilitators, especially among marginalized groups.

- Utilizing Mixed-Methods Approaches: Combine quantitative surveys with qualitative methods such as interviews or focus groups to capture rich, nuanced insights from low-income and less literate populations.
- Focusing on Cultural and Gender Dimensions: Address underexplored cultural norms and gender disparities affecting fintech adoption, examining how these shape behavior and designing targeted interventions accordingly.
- Evaluating Policy and Institutional Interventions: Study the impact of government initiatives, regulatory changes, and public-private partnerships on fintech adoption and inclusion, ideally through comparative analyses across emerging economies.
- Adopting Longitudinal and Experimental Designs: Employ designs that track adoption trajectories and behavioral changes over time to clarify causality and effectiveness of interventions in dynamic fintech environments.

6. Conclusion

This research examined the impact of behavioral intentions, social influence, perceived risk, and trust on financial inclusion, with mobile banking adoption as a mediating factor and customer demographic characteristics as a moderator. By focusing on Egypt, the study addresses a significant gap in the literature, where customer-level insights into financial inclusion remain limited.

The findings contribute to the literature on financial inclusion and mobile banking by integrating behavioral and demographic dimensions into a comprehensive model. The study highlights how trust and social influence can drive mobile banking adoption, which in turn promotes greater financial inclusion. Moreover, the moderating role of customer demographics offers nuanced insights into how adoption patterns differ across consumer segments.

This research advances theoretical understanding by positioning mobile banking as a pivotal mechanism linking individual behavioral factors to broader financial inclusion outcomes. It encourages further exploration of consumer-centric models in emerging markets and provides a foundation for more targeted financial inclusion policies and digital banking strategies.

Abbreviations

Abbreviations should be defined upon their first appearance in the main body, and a list of abbreviations should be provided.

For example:

BMI: Body Mass Index

UV: Ultraviolet

HV: Vickers Hardness

HS: shrinkage according height

DS: shrinkage according diameter

Data Availability Statement

Authors are required to provide details regarding where data supporting reported results can be found, including links to publicly archived datasets analyzed or generated during the study.

Please select one sentence to describe the availability of data.

For example:

1. The data supporting the outcome of this research work has been reported in this manuscript.

Conflicts of Interest

Authors are required to disclose any financial, commercial, or other affiliations that could be perceived as potential conflicts of interest by the academic community. In the absence of such relationships, authors will be requested to confirm the following statement:

"The authors declare no conflicts of interest."

References

[1] Abdurrahman, Abdullahi., Anwar, Hasan, Abdullah, Othman., Salina, Kassim. (2021). Financial inclusion en-hancement through the adoption of Islamic microfinance in Nigeria. doi: 10.1108/IJOES-02-2021-0040

[2] Abuhassna, H., Yahaya, N., Zakaria, M. A. Z. M., Zaid, N. M., Samah, N. A., Awae, F., ... & Alsharif, A. H. (2023). Trends on using the technology acceptance model (TAM) for online learning: a bibliometric and content analysis. International Journal of Information and Education Technology, 13(1), 131-142.

[3] Afjal, A. (2023). Financial inclusion and economic opportunity: Evidence from emerging economies. Journal of Economic Development, 48(2), 122–138.

[4] Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2022). Exploring the critical challenges and factors influ-encing the mobile learning adoption using the TAM approach in Jordan. Education and Information Technolo-gies, 27(1), 243–267.

[5] Alrawad, M., Alharbi, R., & Alzahrani, A. (2023). Trust dimensions in digital banking: A comparative study be-tween traditional and fintech banking users. Journal of Financial Services Marketing, 28(1), 67–80.

[6] Alt, R., Beck, R., & Smits, M. T. (2018). FinTech and the transformation of the financial industry. Electronic Markets, 28(3), 235–243.

[7] Amnas, F., Elsharawy, M., & Gendy, A. (2024). Digital financial literacy and fintech adoption among youth in Egypt. Journal of African FinTech Research, 5(1), 45–63.

[8] Ashoer, N., Osman, R., & Saleh, H. (2024). Gender gap in mobile fintech adoption in the MENA region: The case of Egypt. Middle East Journal of Financial Studies, 12(1), 88–104.

[9] Aziz, W., Abou-Ali, H., & El-Bialy, N. (2014). Mobile banking services and customer satisfaction in Egypt. In-ternational Journal of Bank Marketing, 32(4), 290–310.

[10] Baganzi, R., & Lau, A. (2017). Examining trust and risk in mobile money adoption in Uganda. Sustainability, 9(12), 2233.

[11] Balliester Reis, L. (2022). Financial inclusion, inequality, and economic growth: A macroeconomic perspective. UN DESA Working Paper No. 176. United Nations Department of Economic and Social Affairs.

[12] Bouteraa, Y., Belkhaoui, H., & Ayed, M. (2023). Social influence and technology acceptance in mobile banking: Evidence from North Africa. African Journal of Information Systems, 15(1), 51–69.

[13] CEB.(2023).Financial Inclusion Rates Rose to 70.7% by the End of 2023 retrieved from: https://www.cbe.org.eg/en/news-publications/news/2024/02/22/08/20/financial-inclusion-rates-rose-to-70,-d-,7-percent-by-the-end-of-2023

[14] CEB.(2023).Financial Inclusion Strategy retrieved from: https://www.cbe.org.eg/en/financial-inclusion/financial-inclusion-strategy

[15] Chang, W. L., Pereira, R., & Benson, V. (2023). The role of perceived risks on mobile payment adoption: evidence from Asia. International Journal of Mobile Communications, 21(2), 249-272.

[16] Çoban, S., & Demirhan, M. (2019). Mobil bankacılıkta algılanan deneyimsel değer ve davranışsal etkileri: Nevşehir ili örneği.

[17] Creswell, J. W., & Creswell, J. D. (2022). Research Design: Qualitative, Quantitative, and Mixed Methods Ap-proaches (6th ed.). SAGE Publications.

[18] Cruz, N. A. D., Villanueva, A. C. B., Tolin, L. A., Disse, S., Lensink, R., & White, H. (2023). PROTOCOL: Effects of interventions to improve access to financial services for micro-, small-and medium-sized enterprises in low-and middle-income countries: An evidence and gap map. Campbell Systematic Reviews, 19(3).

[19] Cuéllar, L.I.P., 2024. The Importance of Social Capital in Promo-ting Financial Inclusion: An International Perspective. Scientific Annals of Economics and Business, 71(2), pp.221-240.

[20] Custódio, A. R. B. (2018). Technology Acceptance in Education.

[21] Damayanthi, N. M. M. (2022). Determinants of financial inclusion: A review. Wayamba Journal of Management, 13(2), 175.

[22] Davis, F. D. (1986). A technology acceptance model for empirically testing new end-user information systems: Theory and results (doctoral thesis). Cambridge, MA: Massachusetts Institute of Technology.

[23] Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: three experiments. International journal of human-computer studies, 45(1), 19-45.

[24] Dawood, A. S. M., & Eldahan, O. H. (2020). Assessing the level of sustainability in the Egyptian banking sector. European Journal of Business and Management Research, 5(2).

[25] Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. World Bank Publications.

[26] Devi, S., Masdiantini, P. R., Dewi, P. E. D. M., & Diputra, I. B. R. P. (2020, December). E-Link Service Synergity, Perceived Risk Management, and Tri Hita Karana in LPD in Driving Financial Inclusion. In 5th International Conference on Tourism, Economics, Accounting, Management and Social Science (TEAMS 2020) (pp. 239-246). Atlantis Press.

[27] Dito, Hendro, Prakoso. (2022). Determinant Factors of Financial Inclusion. doi: 10.58968/ria.v2i1.138

[28] Dörnyei, Z. (2007). Research Methods in Applied Linguistics. Oxford University Press.

[29] Durner, T., & Shetret, L. (2015). Understanding bank de-risking and its effects on financial inclusion: An ex-ploratory study. Global Center on Cooperative Security.

[30] Enock, Mintah, Ampaw., Nborlen, Mark, Nte-Adik., Jacob, Azaare., Albert, Adu-Sackey., Bernard, O., Essah., Godwin, Korku, Dzidzornu, Amuzu. (2022). Embracing mobile financial inclusion in the wake of Covid-19 pandemic: The mediating role of cognitive and affective-based trust embeddedness. International Journal of Technology and Management Research, doi: 10.47127/ijtmr.v7i1.148

[31] Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. American Journal of Theoretical and Applied Statistics, 5(1), 1–4. https://doi.org/10.11648/j.ajtas.20160501.11

[32] Fahmy, M., & Ghoneim, H. (2023). Financial inclusion demand-side determinants: analysis from Egypt. Man-agement & Sustainability: An Arab Review, 2(3), 255-284.

[33] Fang, J., Wang, F., Xue, J., & Chua, T. S. (2024). Behavioral intention prediction in driving scenes: A survey. IEEE Transactions on Intelligent Transportation Systems.

[34] Faqih, K. M. S. (2022). Investigating the moderating effect of gender on the acceptance of mobile banking technology in the Middle East. Technology in Society, 68, 101837.

[35] Faqih, K.M., 2022. Internet shopping in the Covid-19 era: Investigating the role of perceived risk, anxiety, gender, culture, and trust in the consumers' purchasing behavior from a developing country context. Technology in Society, 70, p.101992.

[36] Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. International Journal of Human-Computer Studies, 59(4), 451-474. https://doi.org/10.1016/S1071-5819(03)00032-X

[37] Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39–50.

[38] Fuad, S., Sangen, M., & Albushari, S. A. (2018). Pendekatan Technology Acceptance Model (TAM) dan Per-ceived Risk Untuk Mengidentifikasi Faktor-Faktor Yang Mempengaruhi Perilaku Belanja Online Di Kalimantan. Jurnal Wawasan Manajemen, 6(3), 310-328.

[39] Gammage, S., Kes, A., Winograd, L., Sultana, N., Hiller, S. and Bourgault, S., 2017. Gender and digital financial inclusion: What do we know and what do we need to know. International Center for Research on Women (ICRW).

[40] Gammage, S., Swan, S., & Kes, A. (2017). Exploring women's agency and empowerment in developing countries through digital financial services. World Development, 95, 234–245.

[41] Gao, L., & Waechter, K. A. (2017). Examining the role of initial trust in user adoption of mobile payment services: an empirical investigation. Information Systems Frontiers, 19, 525-548.

[42] Gefen, D. (2000). E-commerce: The role of familiarity and trust. Omega, 28(6), 725-737. https://doi.org/10.1016/S0305-0483(00)00021-9

[43] George, Okello, Candiya, Bongomin., Joseph, Mpeera, Ntayi. (2019). Trust: mediator between mobile money adoption and usage and financial inclusion. Social Responsibility Journal, doi: 10.1108/SRJ-01-2019-0011

[44] Goswami, S., Sharma, R. B., & Chouhan, V. (2022). Impact of financial technology (Fintech) on financial in-clusion (FI) in Rural India. Universal Journal of Accounting and Finance, 10(2), 483-497.

[45] Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2019). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) (2nd ed.). SAGE Publications.

[46] Hamakhan, Y. (2020). Mobile banking adoption in Iraq: The influence of social factors. Asian Journal of Technology Innovation, 28(3), 367–388.

[47] Hamidi, H. and Safareeyeh, M., 2019. A model to analyze the effect of mobile banking

[48] Hamidi, H., & Safareeyeh, H. (2019). Behavioral intentions toward using self-service technologies: A customer perspective from the banking industry in Egypt. Service Industries Journal, 39(5-6), 373–394.

[49] Hanning, D. (2014). Social influence and technology acceptance: A study of mobile banking in developing countries. University of Cape Town.

[50] Kandpal, E., Morrison, J., & Morshed, S. M. (2023). The role of financial inclusion in achieving the Sustainable Development Goals. World Bank Policy Research Working Paper No. 10288.

[51] Karanja, A. (2020). The impact of social influence on mobile banking usage in Kenya. Journal of African Business, 21(4), 451–471.

[52] Kumari, S. (2021). Characteristics of quality financial inclusion and their impact on consumer protection. Journal of Financial Services Research, 60(2), 141–162.

[53] Lenka, S. K., & Barik, R. (2018). Has expansion of mobile and internet banking increased financial inclusion in India? Future Business Journal, 4(1), 57–66.

[54] Murad, M., & Ahmad, T. (2023). Factors influencing trust in fintech applications: Evidence from developing markets. International Journal of Bank Marketing, 41(2), 378–399.

[55] Mwania, M. (2018). Client trust and adoption of mobile banking in Kenya. International Journal of Financial Studies, 6(2), 57.

[56] Mwania, P.M., 2018. Antecedents of technology adoption and financial inclusion among micro enterprises in Machakos County, Kenya (Doctoral dissertation, KeMU).

[57] Naeem, M., Ozuem, W., Howell, K., & Ranfagni, S. (2022). Understanding the process of meanings, materials, and competencies in adoption of mobile banking. Electronic markets, 32(4), 2445-2469.

[58] Nedeljković, I. (2022). Determinants and consequences of user trust in mobile banking. Bankarstvo, 51(3-4), 170-201.

[59] Nisa, U. K., & Solekah, N. A. (2022). The influence of TAM, social influence, security relationship toward intention to use E wallet through attitude and Trust. Iqtishoduna: Jurnal Ekonomi dan Bisnis Islam, 18(1), 35-50.

[60] Nkwenkwezi, M. E. (2021). Investigating factors that hinder the adoption and use of primary healthcare infor-mation systems (phcis) in the western cape of South Africa.

[61] Noori Madvani, H., & Abedini, S. (2021). Determination of the influencing factors for the acceptance of mobile banking based on social cognitive theory by Bank Mellat customers in Bandar Abbas. Journal of Modern Medical Information Sciences, 7(1), 1-8.

[62] Nunnally, J. C. (1978). Psychometric Theory (2nd ed.). McGraw-Hill.

[63] Nyarko, E. S., Amoateng, K., & Aboagye, A. Q. Q. (2023). Financial inclusion and poverty: evidence from de-veloping economies. International Journal of Social Economics, 50(12), 1719-1734.

[64] Okpara, A., Ailemen, I. O., & Iyoha, F. O. (2014). Adoption Triggers and Barriers of Mobile Banking Services in Nigeria.

[65] Onyejiaku, C.C., Ngong, C.A., Kum, F.V. and Nebasi, A.W., 2024. Effect of digital financial inclusion on banking for the poor in African emerging economies. Journal of Economic and Administrative Sciences.

[66] Osabutey, E. L. C., & Jackson, T. (2024). Risks and opportunities in mobile money systems: A review of customer experiences in sub-Saharan Africa. African Journal of Economic Policy, 31(1), 17–36.

[67] Osabutey, E.L. and Jackson, T., 2024. Mobile money and financial inclusion in Africa: Emerging themes, chal-lenges and policy implications. Technological Forecasting and Social Change, 202, p.123339.

[68] Pamungkas, Y., & Rahmayanti, D. (2024). Behavior Intention Penggunaan Digital Payment QRIS Berdasarkan Model Unified Theory of Acceptance and Use of Technology. Jurnal Informatika Ekonomi Bisnis, 271-274.

[69] Pasha, R., & Elbages, B. (2022). GREEN BANKING PRACTICES: THE IMPACT OF INTERNET BANKING ON BANK PROFITABILITY IN EGYPT.

[70] Pradhan, R. P., Arvin, M. B., Nair, M., & Hall, J. H. (2021). Financial inclusion and poverty alleviation: Evidence from South Asia. Social Indicators Research, 156(1), 267–293.

[71] Pradhan, R.P., Arvin, M.B., Nair, M.S., Hall, J.H. and Bennett, S.E., 2021. Sustainable economic development in India: The dynamics between financial inclusion, ICT development, and economic growth. Technological Forecasting and Social Change, 169, p.120758.

[72] Prakoso, D. (2022). Determinant Factors of Financial Inclusion: Empirical Evidence in Indonesia using GMM. Review on Islamic Accounting, 2(1).

[73] Raja Hisham, M., Zainol, Z., & Raja, R. R. I. (2023). Challenges affecting bank consumers' intention to adopt green banking technology in the UAE: A UTAUT-based mixed-methods approach. Journal of Islamic Marketing, 14(10), 2466-2501. https://doi.org/10.1108/JIMA-07-2022-0364

[74] Rehman, S.U., Hussain, S. and Rasheed, A., 2024. Unleashing financial inclusion: the mediating role of digital marketing in the impact of fintech and behavioral intention. Journal of Modelling in Management.

[75] Rido, M.C.W., Wardana, I.M., Giantari, I.G.A.K. and Suparna, G.,2023. The Role of Perceived Risk and Perceived Ease of Use Mediates the Effect of Service Quality on Mobile Banking Use (Study on BNI Mobile Banking Users in Denpasar City).

[76] S., H., Oh., Min, Jung, Kang. (2023). The Study on the Transition to the Trust on the Delivery Company from the Trust on the Delivery Application Service: Based on the Technology Acceptance Model (TAM). Journal of Business Convergence, doi: 10.31152/jb.2023.02.8.1.115

[77] Salem, N. F. M. A. (2023). Does banking development promote real sector growth? evidence from Egypt. 140-119 ,(2)43 ,التجارة والتمويل.

[78] Saluja, O. B., Singh, P., & Kumar, H. (2023). Barriers and interventions on the way to empower women through financial inclusion: a 2 decades systematic review (2000–2020). Humanities and Social Sciences Communica-tions, 10(1), 1-14.

[79] Sangma, A. and Das, J., 2024. A Bibliometric Analysis and Network Visualization of Financial Inclusion Research Trend in the Last Decade. Business Perspectives and Research, p.22785337241281170.

[80] Sassi, A. S., Hammami, H., & Hafsia, H. B. L. (2022). Perceived risk, structural assurance and trust in mobile payments. Journal of Telecommunications and the Digital Economy, 10(4), 41-50.

[81] Saudjhana, A. (2023). Behavioral intention and adoption of digital bank mobile application among housewives using mixed method approach. Journal of Computer Networks, Architecture and High Performance Computing, 5(1), 288-301.

[82] Saunders, M., Lewis, P., & Thornhill, A. (2019). Research Methods for Business Students (8th ed.). Pearson Educati

[83] Savić, J., & Pešterac, A. (2019). Antecedents of mobile banking: UTAUT model. The European journal of applied economics, 16(1).

[84] Saxena, N., Gera, N., & Taneja, M. (2023). Factors influencing mobile banking adoption in India: The role of government support as a mediator. The Electronic Journal of Information Systems in Developing Countries, 89(6), e12287.

[85] Shaheen, M.A., Aslam, S., Mahmood, S., Ahmad, M. and Tabassum, S., 2023. Assessing indirect effect of be-havioral intentions on financial inclusion–a serial mediation model. Kybernetes.

[86] Shareef, M. A., Baabdullah, A., Dutta, S., Kumar, V., & Dwivedi, Y. K. (2018). Consumer adoption of mobile banking services: An empirical examination of factors according to adoption stages. Journal of Retailing and Consumer Services, 43, 54-67.

[87] Sharma, S. K. (2019). Integrating cognitive antecedents into TAM to explain mobile banking behavioral intention: A SEM-neural network modeling. Information Systems Frontiers, 21(4), 815-827.

[88] Simatele, M. (2024). Trust as a Mediator for Continued Mobile Financial Service Use: A Case of the Eastern Cape Province of South Africa. Journal of African Business, 25(2), 330-348.

[89] Simatele, M., 2024. Trust as a Mediator for Continued Mobile Financial Service Use: A Case of the Eastern Cape Province of South Africa. Journal of African Business, 25(2), pp.330-348.

[90] Singh, S., & Srivastava, R. K. (2018). Predicting the intention to use mobile banking in India. International Journal of Bank Marketing, 36(2), 357-378.

[91] Song, X., Yin, Y., Cao, H., Zhao, S., Li, M., & Yi, B. (2021). The mediating effect of driver characteristics on risky driving behaviors moderated by gender, and the classification model of driver's driving risk. Accident Analysis & Prevention, 153, 106038.

[92] Stephen, K. (2023). Determinants of financial inclusion: Evidence from Tanzania. J Eco Res & Rev, 3(2), 66-69.

[93] Sulistyowati, W. A., Alrajawy, I., Isaac, O., & Ameen, A. (2021). Mobile Banking Adoption—Extending Tech-nology Acceptance Model with Transaction Convenience and Perceived Risk: A Conceptual Framework. In Intelligent Computing and Innovation on Data Science: Proceedings of ICTIDS 2021 (pp. 221-228). Springer Singapore.

[94] Sulistyowati, W. A., Alrajawy, I., Isaac, O., Yulianto, A., & Ameen, A. (2022). Examining The Intention To Use Mobile banking During Period Of Covid-19: Technology Acceptance Model With Trust. Journal of Southwest Jiaotong University, 57(6).

[95] Sumaryono, D. (2023). Technology Acceptance Model (TAM) Sebagai Tools Penilai Penerimaan Kader Po-syandu Remaja Bina Karya Terhadap Sistem Informasi Sms Gateway One Way Remainder Melaksanakan 7 Pesan Germas Berbasis Android. Media Informasi, 19(1), 20-28.

[96] Supramono, Supramono., Elsa, Stefanie., Theresia, Woro, Damayanti. (2020). Fostering financial inclusion: the determinants of the users behaviour of the smart act branchless banking service. Oradea Journal of Business and Economics, doi: 10.47535/1991OJBE108

[97] Susanti, M., & Reza, H. K. (2022). A Bibliometric and Visualized Analysis of Mobile Banking Research Using VOSviewer. East Asian Journal of Multidisciplinary Research, 1(10), 2377-2388.

[98] Tamilmani, K., Rana, N. P., Wamba, S. F., & Dwivedi, R. (2021). The extended Unified Theory of Acceptance and Use of Technology (UTAUT2): A systematic literature review and theory evaluation. International Journal of Information Management, 57, 102269.

[99] Thangavel, C., Thangavel, R., Ramanujam, E., Bennet, D. T., & Bennet, P. S. (2022). Consumer Perception of Internet Banking and Mobile Banking Using Twitter Analytics. International Journal of Sociotechnology and Knowledge Development (IJSKD), 14(1), 1-14.

[100] Trivedi, S. K., Patra, P., Srivastava, P. R., Kumar, A., & Ye, F. (2022). Exploring Factors Affecting Users' Behavioral Intention to Adopt Digital Technologies: The Mediating Effect of Social Influence. IEEE Transactions on Engineering Management.

[101] Tulu, D. T. (2023). Inclusive Financing in Developing Countries: A Systematic. Journal of World Economic Re-search, 12(1), 19-24.

[102] Uddin, K. S., & Begum, T. (2023). Financial Inclusion: Factors Influencing on Customer Adoption of Mobile Banking Services in Bangladesh. International Journal of Business and Management, 18(3), 1-1.

[103] Ushadevi, P. (2018). A Study on Mobile banking Financial Transaction of Major Nationalized Banks in India. International Journal of Management, Technology and Social Sciences (IJMTS), 3(2), 100-119.

[104] Vazifehdoost, H., & Khosrozadeh, S. (2014). Investigating the effect of information on mobile banking ac-ceptance barriers. Management Science Letters, 4(9), 2049-2056.

[105] Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. Decision sciences, 39(2), 273-315.

[106] Venkatesh, V., & Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. MIS quarterly, 115-139.

[107] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425-478. https://doi.org/10.2307/30036540

[108] Wafik, D., & Omar, M. (2022). Estimate the Impact of Financial Inclusiveness on Economic Growth in Egypt Econometric Study. Scientific Journal of economic & commerce, 52(1), 263-292.

[109] Wang, G., Tan, G. W. H., Yuan, Y., Ooi, K. B., & Dwivedi, Y. K. (2022). Revisiting TAM2 in behavioral targeting advertising: a deep learning-based dual-stage SEM-ANN analysis. Technological Forecasting and Social Change, 175, 121345.

[110] Wiastuti, R. (2022). Behavioral Intention Pada Aplikasi Pemesanan Makanan Gofood, Grabfood dan Sho-peefood. Jurnal Ilmiah Hospitality Management, 13(1), 42-49.

[111] Widyaningrum, D., & Theotista, G. (2023). Tipologi Financial Technology Paylater: Technology Acceptance Model (TAM). Formosa Journal of Multidisciplinary Research, 2(1), 207-216.

[112] World Bank. (2024). Financial inclusion data: Egypt country profile. https://globalfindex.worldbank.org

[113] World Bank. (2024). Financial Inclusion in Egypt: Challenges and Opportunities. World Bank. Retrieved from https://www.worldbank.org/en/country/egypt

[114] Wu, B., & Chen, X. (2017). Continuance intention to use MOOCs: Integrating the technology acceptance model (TAM) and task technology fit (TTF) model. Computers in human behavior, 67, 221-232.

[115] Xu, X., 2020. Trust and financial inclusion: A cross-country study. Finance Research Letters, 35, p.101310.

[116] Yalley, A. A., & Dei Mensah, R. (2023). Mobile banking usage behavior. In A Research Agenda for Consumer Financial Behavior (pp. 131-144). Edward Elgar Publishing.

[117] Yin, H., 2019. Bank globalization and financial stability: International evidence. Research in International Business and Finance, 49, pp.207-224.

[118] Yin, R. (2019). Technology innovation and competition in service industries: Implications for banks and fi-nancial institutions. Springer.

[119] Young, D., & Young, J. (2022). Technology adoption: impact of FinTech on financial inclusion of low-income households. International Journal of Electronic Finance, 11(3), 202-218.

[120] Yu, X. (2022). Farmers' trust in government and participation intention toward rural tourism through TAM: The moderation effect of perceived risk. Frontiers in Psychology, 13, 1023280.

[121] Yuniarti, N., & Safitri, T. A. (2022, June). The Effect Of Financial Inclussion And Social Influence On Community Interest In Using Financial Technology. In Proceedings Universitas Muhammadiyah Yogyakarta Undergraduate Conference (Vol. 2, No. 1, pp. 1-8).

[122] Zeya, F. (2022). Impact of covid-19 on mobile banking adoption: evidence from Bangladesh. Journal of Gov-ernance and Social Policy, 3(2), 95-107.