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Service Characteristics and Customer Use Intention in Peer-to-Peer Platforms

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Abstract

Purpose: This study examines the relationship between key service characteristics and customer use intention in **peer**-to-peer(P2P) platforms, explicitly modeling the mediating role of perceived risks. **Research design, data and methodology:** Five independent factors assurance, intermediation, security, trustworthiness, and technological maturity were identified as key service characteristics that influence user perceptions and intentions. **Conclusions:** Among the service characteristics, assurance and security influenced customer use intention through the mediation of perceived risks, while intermediation and trustworthiness had a direct impact on customer use intention. However, technological maturity did not significantly affect customer use intention and did not serve as a mediator for perceived risks. Conclusions: The results of this empirical analysis underscore the necessity of strategically prioritizing the reduction of perceived risks and the enhancement of trust, rather than relying solely on technology, within the rapidly evolving digital financial ecosystem.

Keywords : P2P platforms #1, Service characteristics #2, Perceived risks #3, Use intention #4, Assurance, security #5

JEL Classification Code: F31, F37, G15, E44

1. Introduction

This paper examines current trends in the digital financial services sector and identifies the factors that influence customer engagement with P2P platforms. The rise of digital technologies has intensified this development, with service characteristics such as assurance, intermediation, security, trustworthiness, and technological maturity playing critical roles in shaping users' perceptions and intentions to use these platforms (Järvinen & Lehtinen, 2015). Therefore, the purpose of this study is to explore how these service characteristics affect user engagement with P2P platforms.

The research hypothesis will be framed based on a comprehensive model that highlights the necessity and significance of examining these interactions, particularly how perceived risks and trustworthiness can act as moderators between service characteristics and user intentions (Roy et al., 2020). Identifying the roles of the five service attributes—assurance, intermediation, security,

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trustworthiness, and technological maturity—in the adoption process of P2P platforms illustrates how these factors can either foster or undermine trust, as well as their contributions to building confidence and addressing user concerns. Integrating Technology Acceptance Models with real risk perceptions enhances the understanding of how service characteristics influence perceived risks. This insight not only enriches theoretical foundations but also provides practical recommendations for fintech providers, developers, and policymakers aiming to design safe, reliable, and user-friendly digital financial platforms (Libai et al., 2010).

Egypt presents a unique case in this context, as its emerging market for P2P adoption combines high mobile penetration, government-driven initiatives, and a substantial unbanked population. Despite governmental efforts to enhance financial inclusion and promote fintech growth, cultural mistrust regarding online transactions remains prevalent, indicating significant trust barriers within the financial services industry. This challenging environment necessitates that P2P platforms earn consumer trust by ensuring platform security and providing ease of use.

This paper aims to analyze the P2P ecosystem in Egypt, exploring how the principles of assurance, intermediation, and security services can be integrated to address risk perceptions, build trust, and enhance financial inclusion for P2P adoption in developing countries. Presenting the research findings in the specific context of Egypt may yield nuanced insights that are not only significant for local stakeholders but also enrich the broader discourse on digital financial services (Kaura et al., 2015). The analysis will utilize the Technology Acceptance Model and similar frameworks, which posit that customer use intention, trustworthiness, and perceived risks are key determinants of user behavior (Soares & Proença, 2015).

2. Research Background

2.1. P2P platforms

P2P platforms represent an innovative advancement in communication and business, eliminating the need for traditional intermediaries (Lee & Tse, 2020; Putri et al., 2022; Zhu et al., 2020). These platforms facilitate direct transactions between parties, enabling the exchange of products, services, or information. The concept of P2P platforms closely aligns with the sharing economy, as it allows individuals to utilize their assets more efficiently, contributing to various sustainability goals and promoting resource-sharing efficiency (Polisetty & Kurian, 2021; Wu, 2015).

P2P platforms can be categorized into several types, including accommodation sharing (e.g., Airbnb), lending platforms (e.g., Lending Club), cryptocurrencies (e.g., Binance), non-fungible tokens (NFTs, e.g., OpenSea), and content-sharing services (e.g., BitTorrent). While each type serves different functions, they all aim to facilitate direct interaction among users (Polisetty & Kurian, 2021). For instance, in P2P lending platforms, borrowers can list their funding needs, while potential lenders can view proposals and assess risk-return profiles without relying on traditional financial institutions (Perrin et al., 2016). This model not only democratizes access to financial resources but also offers investors the potential for higher returns compared to conventional savings accounts (Sunardi, 2021).

Research on P2P platforms is relatively new, with most studies focusing on the socio-economic impacts of user participation. Recent attention has been directed toward areas such as user trust, platform reputation, and the effects of social dynamics on user engagement. For example, Lin et al. (2022) examine how P2P assessments can foster trust within entrepreneurial communities, focusing on the psychological processes behind user interactions. Similarly, Zou et al. (2016) argue that the most effective pricing models for P2P sharing services consider network externalities as critical factors in user participation and platform sustainability. Additionally, the role of reputation in P2P lending platforms has garnered significant scholarly attention. Research by Harvey et al. (2022) reveals that a platform's reputation significantly influences lenders' trust and willingness to invest, highlighting the importance of effective borrower evaluation mechanisms for maintaining platform credibility. This finding aligns with Hamari et al. (2014), who noted that the success of P2P platforms hinges on the social aspects of the platform and the establishment of trust among users.

P2P platforms extend beyond simple transactions; they are revolutionizing industries and altering consumer buying habits (Lee & Tse, 2020; Putri et al., 2022). For instance, the rise of P2P accommodation has transformed travel trends and practices within the hospitality sector, with studies indicating that these platforms promote sustainable tourism (Alluri et al., 2016). Moreover, the integration of technology in P2P platforms has paved the way for new business models, creating fresh opportunities for entrepreneurs (Harvey et al., 2022).

2.2. Service Characteristics

The IS Success Model of information systems, established in 1992, elucidates the impact of service quality on customer intentions to use P2P networks. Based on a study conducted in 1988, the model incorporates

characteristics of service quality that relate to technical preparedness and transaction efficiency. It shapes discussions about how system and information quality influence user intentions regarding P2P services. Due to their inherent properties, service qualities in P2P platforms significantly affect user perceptions and behaviors. As a result, academic focus has increasingly shifted toward understanding service attributes in P2P contexts.

For example, Sunardi et al. (2021) identify two general forms of property uncertainty: property quality uncertainty and fit uncertainty, both of which negatively impact user choices in online P2P accommodation platforms. Their study reveals that addressing these uncertainties can enhance user trust, leading to easier booking decisions (Lin et al., 2022). Additionally, the research highlights that consumers engage in P2P exchanges for various personal reasons, suggesting that understanding diverse user needs and expectations is crucial for platform success (Wu, 2015).

Furthermore, Zou et al. (2016) demonstrate that price-quality parameters significantly shape consumer experiences in P2P accommodation. This relationship indicates that price serves as a key cue for customers to assess service quality, thereby influencing their purchasing decisions.

In the context of P2P lending, Harvey et al. (2022) identify both drivers and barriers to the adoption of fintech P2P lending among micro, small, and medium enterprises. The study notes that inertia can hinder the transition to fintech services, underscoring the importance for P2P platforms to continually evaluate and enhance their offerings to attract consumers. Additionally, qualitative research by Alluri et al. (2016) reveals that trust perceptions—particularly competence-based and integrity-based trust—positively influence customers' booking intentions for P2P accommodations. This finding further emphasizes the necessity of quality assurance on the platform to improve service delivery and foster trust among users.

Despite the growing body of research on user intentions in P2P platforms, there remains a need for further exploration. Such studies can enrich academic discourse and inform practical strategies that service providers can adopt in this rapidly evolving landscape, ultimately enhancing user satisfaction and engagement in the long run (McMeekin et al., 2020; Zhu et al., 2020).

The five service characteristics addressed in this study are essential factors that mitigate the inherent risks of P2P platform services, enhance user experience, and support the long-term growth of the platform. As P2P platforms are based on direct transactions between individuals, they inherently involve higher levels of uncertainty and risk compared to traditional centralized services. Consequently, users place increased importance on trust in P2P platforms. To ensure the successful operation of these platforms, it is crucial to secure Assurance, Intermediation, Security, Trustworthiness, and Technological Maturity. Assurance provides users with a sense of stability and trust, while Intermediation facilitates smooth and efficient transactions. Security is vital for protecting user information and assets, and Trustworthiness is a key element in driving user engagement. Finally, Technological Maturity is a critical determinant of a platform's competitiveness, as platforms that adopt and continuously advance cutting-edge technologies offer users a superior experience.

These five service characteristics must be considered to ensure the ongoing growth and competitive edge of P2P platforms. To enhance user experience and promote financial inclusion, it is essential to manage and develop these characteristics in an integrated manner. When P2P platforms effectively embody these service characteristics, they can build user trust and stimulate transactions, ultimately leading to successful platform operations.

2.2.1. Assurance

Assurance can be defined as the user's belief in the reliability, credibility, and competence of a service—key factors in building trust, especially in virtual environments where users cannot rely on non-verbal cues (Lin et al., 2022). In P2P platforms, strong assurance mechanisms can bolster user confidence by meeting or exceeding expectations and reducing perceived risks. This, in turn, leads to increased satisfaction, loyalty, and enhanced usage intentions, as posited by Wu (2015) and Zou et al. (2016). The research indicates that assurance is a critical success factor for digital services, particularly in contexts with high levels of risks and uncertainty.

For example, Harvey et al. (2022) found that effective assurance measures significantly impact user intentions and trustworthiness in knowledge management systems. Additionally, McMeekin et al. (2020) highlighted that assurance is one of the elements influencing the success of ERP projects and user satisfaction with service quality perceptions.

In P2P platforms, assurance can be established through various means, such as user verification processes, clear and consistent communication about services, and the integration of secure payment systems. These mechanisms are essential for addressing issues related to fraud and service quality, which are prevalent in P2P transactions (McMeekin et al., 2020). For instance, social rental websites like Airbnb and transportation services such as Uber have implemented numerous review systems and verification processes to enhance trust between parties (Järvinen & Lehtinen, 2015). Furthermore, technological advancements like artificial intelligence and blockchain can also improve assurance in P2P platforms. AI can be employed to analyze

user behavior and prevent fraud, while blockchain provides a secure method for recording transactions (Roy et al., 2020). According to Libai et al. (2010), intent-based networking can be utilized for service assurance in smart environments, highlighting the potential of technology to enhance user trust in digital services.

While much has been written about the concept of assurance in digital services, further research is needed, particularly regarding P2P systems. Understanding how different types of assurance mechanisms affect user perceptions and actions is vital for designing effective strategies that increase user trust and engagement on these platforms (Soares & Proença, 2015).

H1a: Assurance will negatively affect perceived risks in P2P platform services.

H1b: Assurance will positively affect customer intention to use P2P platform services.

2.2.2. Intermediation

In P2P platforms, intermediation refers to the role of the platform as a trusted third party through which transactions between users are facilitated. This concept is crucial for establishing trust, safeguarding transactional integrity, and protecting users within P2P markets (Lin et al., 2022). Effective intermediaries not only facilitate transactions but also resolve disputes between users, ensuring smooth interactions among users and between users and the platform (Wu, 2015; Zou et al., 2016).

Previous research has established that perceived risks—a well-documented issue in P2P contexts—can be effectively mitigated by strong intermediation mechanisms. For instance, Alluri et al. (2016) emphasize that a robust intermediary fosters trust and reduces uncertainty in e-commerce transactions. This is particularly important for P2P lending and accommodation platforms, where users may hesitate to engage due to concerns about fraud or service delivery (Alluri et al., 2016).

In the context of P2P accommodation platforms, Eck et al. (2013) identify two primary types of property risk: property quality risk and property fit risk. These risks can influence users' decision-making processes, making it essential for platforms to act as intermediaries that implement assurance mechanisms—such as user verification and quality assessment—to mitigate these risks and build user trust (McMeekin et al., 2020).

Additionally, Järvinen and Lehtinen (2015) explore the factors influencing the use of fintech P2P lending by micro, small, and medium enterprises. Their study reveals that effective intermediation can address issues like inertia that may prevent potential users from adopting P2P lending platforms. Thus, intermediaries play a vital role in providing information and supporting user engagement with P2P services (Järvinen & Lehtinen, 2015).

Roy et al. (2020) further analyze the factors that lead consumers to choose P2P accommodation services, concluding that effective intermediation can enhance user satisfaction and address diverse user needs, ultimately promoting higher participation in P2P transactions. The meta-analysis conducted by Suh et al. (2003) and Libai et al. (2010) found that trust in P2P accommodation platforms significantly influences customers' booking intentions, comprising two dimensions: competence-based trust and integrity-based trust. This underscores the importance of strong intermediation designed to build trust and deliver quality services (Kaura et al., 2015).

However, further research on intermediation in P2P platforms is necessary to empirically examine the impact of various intermediation models. Understanding how different intermediation mechanisms affect user perceptions and behaviors is essential for designing effective strategies that will enhance user trust and participation in P2P platforms (Soares & Proença, 2015; Rosenbaum & Massiah, 2011).

H2a: Intermediation will negatively affect perceived risks in P2P platform services.

H2b: Intermediation will positively affect customer intention to use P2P platform services.

2.2.3. Security

Security is a key service quality attribute in P2P platforms, encompassing the protection of user information, monetary transactions, and privacy against potential threats (Lin et al., 2022). In today's digital world, where most activities occur online without physical interaction, the importance of security cannot be overstated. Enhancing security measures, such as integrating blockchain technology and encryption protocols, has been shown to increase user confidence and platform usage (Wu, 2015; Zou et al., 2016).

Previous research indicates that security is a crucial factor affecting the acceptance of P2P services. For instance, Suh and Han (2003) highlight that users' perceptions of security significantly influence their intentions to engage in online transactions. Participants are more likely to join P2P platforms if they believe their data and information are well-protected. This concern is especially pronounced in financial transactions, where the stakes are high and the potential for fraud is significant (Alluri et al., 2016). Alluri et al. (2016) further emphasize that robust information security governance and systems enhance service quality in e-commerce. Their findings suggest that organizations must continuously develop and improve their security measures to gain customer trust and ensure loyalty. This aligns with

the understanding that strong security mechanisms lead to higher levels of user satisfaction and retention on P2P platforms (Harvey et al., 2022).

Moreover, users' perceptions of security influence their comfort levels when using financial applications. The literature indicates that users' comfort with services, such as 'Shopee PayLater,' is closely tied to their perceptions of security, especially considering recent data abuse cases (Eck et al., 2013). This underscores the necessity for P2P platforms to implement robust security measures to meet client needs and build trust.

The development of security frameworks is also essential in the context of smart cities, where data security threats are prevalent. Eck et al. (2013) discuss the importance of Security User Input Data (SUIDs) in mitigating information security risks in smart environments. This perspective is applicable to P2P platforms, as integrating various security technologies is crucial for safeguarding user information and ensuring system reliability (McMeekin et al., 2020). In the banking industry, Järvinen and Lehtinen (2015) explain how security quality influences patients' perceptions of digital changes. Their research demonstrates that enhanced security fosters patients' confidence in digital products and services, suggesting that P2P platforms should adopt similar measures to bolster user confidence and adoption (Järvinen & Lehtinen, 2015).

Despite the growing body of research on the security of digital services, more empirical studies are needed, particularly concerning P2P platforms. Understanding how different security features affect user perceptions and behaviors is vital for developing effective strategies that will enhance user trust and engagement (Odinokova & Istomina, 2020; Pradeka et al., 2024).

H3a: Security will negatively affect perceived risks in P2P platform services.

H3b: Security will positively affect customer intention to use P2P platform services.

2.2.4. Trustworthiness

Trustworthiness is one of the most critical service characteristics in P2P platforms, representing users' confidence in the service (Lin et al., 2022; Zhu et al., 2020). In environments where physical interactions are absent, such as online markets, reliability is essential for gaining users' trust and encouraging their participation. The lack of physical supervision in P2P transactions heightens the need to establish trust, as users are generally less inclined to trust the platform and its participants (Wu, 2015; Zhu et al., 2020). Research findings indicate that trustworthiness significantly influences user behavior within the P2P framework. Mayer et al. (1995) and Harvey et al. (2022) developed a model of trust that positions trustworthiness as a key factor in defining interpersonal trust. This model suggests that the perceived trustworthiness of the platform fosters user comfort in transacting, thereby reducing perceived risks and increasing transaction frequency. Similarly, McKnight et al. (2002) and Alluri et al. (2016) emphasize that trust in partners is crucial for decision-making in online environments where personal characteristics are not easily discernible.

In P2P networks, trusted platforms can mitigate the risks typically associated with transactions, thereby enhancing the likelihood of continued participation and fostering positive transaction behavior (Alluri et al., 2016; Zhu et al., 2020). Eck et al. (2013) assert that trustworthiness directly impacts user satisfaction and loyalty, highlighting the necessity for platforms to cultivate a strong perception of trust to achieve success. This is particularly vital in sectors such as accommodation and lending, where users are often wary of scams or subpar services. Roy et al. (2020) explain that reputation systems can help build trust by allowing users to see how others have interacted within the system. These systems enable users to assess their counterparts' credibility based on ratings provided by community members, facilitating more informed decision-making. Trust extends beyond the platform itself to encompass trust among users and their respective reputations (Kaura et al., 2015).

Furthermore, Kaura et al. (2015) demonstrate that trustworthiness is significant in educational environments, particularly because feedback relies on the perceived expertise and trustworthiness of peers. This study indicates that trustworthiness plays a vital role in collaborative settings, extending beyond business transactions to encompass learning and social interactions. In P2P lending, reliability is especially crucial. Research shows that lenders are more likely to engage with borrowers who have a strong reputation, as this builds confidence that the borrower will not default (Soares & Proença, 2015). Aikebaier et al. (2012) and Rosenbaum & Massiah (2011) emphasize the necessity of robust trust features for P2P lending sites to enhance user trust and involvement.

Despite the growing body of knowledge on trustworthiness in digital services, empirical research focusing specifically on P2P platforms remains limited. It is essential to understand how different trust enforcement mechanisms influence users' perceptions and behaviors to develop effective strategies that will increase trust and engagement (Davis, 1989; Venkatesh & Davis, 2000).

H4a: Trustworthiness will negatively affect perceived risks in P2P platform services.

H4b: Trustworthiness will positively affect customer intention to use P2P platform services.

2.2.5. Technological Maturity

Technological maturity refers to a well-organized and well-developed infrastructure of a platform, which is essential for the effective and efficient operation of P2P platforms (Lin et al., 2022). It not only enhances operational efficiency but also instills confidence among users and minimizes their perceived risks—both crucial factors for attracting users and encouraging their participation (Wu, 2015).

In the context of P2P platforms, technological maturity encompasses several aspects, including the strength of the business framework, the reliability of technology, and the flexibility of the services offered. According to Harvey et al. (2022), user experience is significantly improved through the use of advanced technologies such as blockchain and artificial intelligence (AI). These technologies contribute to the robustness of the platform and enhance the overall user experience. The authors emphasize that a well-developed technological infrastructure can profoundly influence customer satisfaction and loyalty, as users prefer platforms that are strong and dependable.

Research findings indicate that technological maturity is closely related to users' perceptions of security and trust. For instance, platforms that incorporate technologies such as blockchain, AI, and cloud computing can enhance their effectiveness and create a secure environment for transactions (Harvey et al., 2022). The integration of these technologies improves service delivery and builds user confidence, thereby reducing the perceived risks associated with P2P transactions (Alluri et al., 2016).

Moreover, the concept of technological maturity is increasingly significant in light of emerging technologies. For example, Eck et al. (2013) discuss the maturity of AI-enabled platforms and how AI can enhance the performance of digital services. This perspective is particularly relevant for P2P platforms, as the ability to analyze big data and create personalized user experiences is vital for their success (McMeekin et al., 2020).

The adoption of blockchain technology has emerged as one of the most promising advancements driving the technological evolution of P2P platforms. According to Järvinen and Lehtinen (2015), blockchain provides a secure and transparent environment for transactions, thereby boosting user confidence and improving interactions among involved parties. The features of blockchain technology, including immutability and decentralization, help to address many of the security issues that can arise in P2P networks (Järvinen & Lehtinen, 2015).

However, further research is needed to expand the current understanding of technological maturity, particularly concerning P2P platforms. It is essential to examine how different technological developments influence users' perceptions and behaviors in order to design effective strategies that will enhance user trust and engagement (Roy et al., 2020; Kaura et al., 2015).

H5a: Technological maturity will negatively affect perceived risks in P2P platform services.

H5b: Technological maturity will positively affect customer intention to use P2P platform services.

2.3. Perceived Risks

Perceived risks encompass financial risks, privacy concerns, and service quality issues that can significantly impact user behavior on P2P platforms (Lin et al., 2022). This concept is particularly relevant in digital environments where transactions occur with minimal intervention from third parties. High perceived risks can hinder trust and adoption, whereas effectively addressing these concerns can enhance user involvement and participation (Wu, 2015; Zou et al., 2016).

Perceived risks are a well-documented concept in the literature, with several dimensions identified, including financial risks, privacy risks, and performance risks. Financial risks refer to the potential loss of money, a major concern for users, especially in P2P transactions. Privacy risk involves the likelihood of exposing sensitive information, while performance risk pertains to the potential for unsatisfactory service outcomes.

McMeekin et al. (2020) highlight that perceived risk mediates the relationship between service characteristics and customer usage intentions. For example, if users perceive high risks associated with a platform, they are likely to avoid it, even if it is of high quality and technologically advanced. Conversely, platforms that demonstrate robust security measures and are perceived as reliable can reduce risk perception, thereby increasing user trust and active engagement (McMeekin et al., 2020).

Research by Qalati et al. (2021) and Järvinen & Lehtinen (2015) emphasizes that negative perceptions of service quality and website reliability lead to lower purchase intentions in online shopping. This is particularly critical for P2P platforms, which must address user concerns by implementing strong security features and clear communication (Järvinen & Lehtinen, 2015).

Chiu et al. (2014) and Roy et al. (2020) also investigate how perceived risks influences the intention to make repeat purchases in the B2C e-commerce sector. They find that experienced buyers evaluate the overall impact of perceived risks in conjunction with the value of transactions. Their findings suggest that while perceived risks may deter new users, experienced users may focus on the benefits and overlook the risks, underscoring the importance of building a strong brand image over time (Roy et al., 2020).

Moreover, Libai et al. (2010) elaborate on how initial trust shapes the behavior of online buyers, indicating that they are more likely to use services with a good reputation. This aligns with the notion that risk perceptions can be mitigated through trust-building factors, such as user reviews and ratings, which serve as social proof of the platform's credibility (Soares & Proença, 2015).

According to Kaura et al. (2015), perceived risks are a significant determinant of users' decisions to participate in lending platforms. Their study further indicates that platforms must develop and implement effective risks management systems to enhance user confidence and boost participation (Soares & Proença, 2015).

Despite the growing body of research on perceived risks, there remains a gap that calls for more empirical investigations focusing on P2P platforms. Understanding how different facets of perceived risks influence users' perceptions and behaviors is crucial for designing effective strategies that will enhance user trust and engagement (Rosenbaum & Massiah, 2011; Huang et al., 2020).

Perceived risk significantly influences users' trust formation and service usage intentions, and this can be understood through established theoretical frameworks such as the Technology Acceptance Model (TAM) and the Trust-Risk Framework. TAM explains that perceived usefulness and ease of use are critical variables in the technology acceptance process (Davis, 1989). In the context of P2P platforms, low perceived risk can lead users to view the service characteristics of Assurance, Intermediation, Security, Trustworthiness, and Technological Maturity more positively, ultimately enhancing their intention to use the P2P platform. The Trust-Risk Framework posits that when users develop trust in a platform, perceived risk decreases, which in turn increases user engagement and intentions for continued use. This theoretical foundation underscores the necessity of considering perceived risk as a mediating factor, contributing to the development of strategies for building user trust and effectively managing risk within P2P platforms (Qalati et al., 2021; Chiu et al., 2014). Therefore, future research should integrate these theories to more clearly delineate the role of perceived risk and explore ways to improve the user experience in P2P platforms.

H6c: Perceived risks will negatively affect customer intention to use P2P platform services.

H7: Perceived risks will mediate the relationship between Service Characteristics and customer intention to use P2P platform services.

2.4. Customer Use Intention

Customer use intention in P2P platforms is grounded in the Technology Acceptance Model (TAM) and other extended theories. Davis (1989) identified two major constructs—perceived risks and customer use intention—as critical factors influencing an individual's adoption and usage of technology. In the context of P2P services, these constructs help stakeholders assess the returns and efforts associated with P2P operations. This framework provides valuable insights into user behavior, particularly in P2P services where social factors and perceived relevance play significant roles. For example, subjective norms—defined as the opinions and recommendations of significant others—can greatly influence a user's decision to adopt a specific P2P platform (Zou et al., 2016).

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh et al. (2003) and Venkatesh & Davis (2000), extends this understanding by incorporating elements from various acceptance theories. When applied to P2P services, this model elucidates how performance expectations, ease of use, social pressures, and resource availability contribute to adoption decisions (Alluri et al., 2016). Specifically, regarding usage, the Expectation-Confirmation Model (ECM) of IT Continuance, developed by Bhattacherjee (2001), can be utilized to explain user behavior in this context (McMeekin et al., 2020). According to the ECM, individuals' initial expectations, followed by their experiences and satisfaction, determine the likelihood of continued technology use. In the case of P2P platforms, this model clarifies how positive first impressions, met expectations, and overall satisfaction lead to sustained user engagement (Mouratidis et al., 2021).

Prior research indicates that users' intentions to utilize P2P services are highly dependent on their satisfaction with the service and the perceived value they receive. Studies have shown that satisfaction in P2P transactions increases the likelihood that users will conduct more transactions and recommend the service to others (Roy et al., 2020). Additionally, the intermediary role of trust between user satisfaction and continued use intention has been emphasized in various studies, highlighting the importance of building trust to maintain user engagement in P2P protocols (Widyanto et al., 2022).

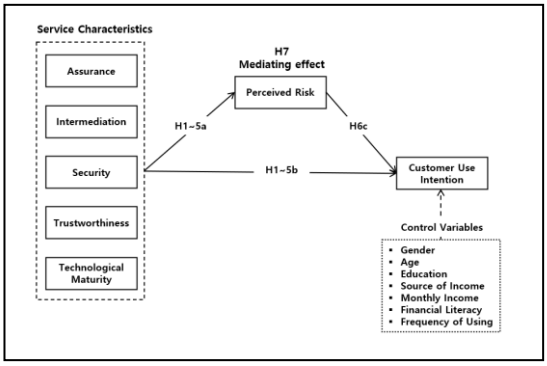

Figure 1: Research model.

Therefore, it is crucial to adopt an integrated approach when examining customer usage intention in P2P platforms. Analyzing perceived usefulness, ease of use, social context, and user satisfaction allows researchers and practitioners to better understand the processes that underlie user behavior and adoption in this highly innovative environment.

3. Empirical Study

3.1. Methods

3.1.1. Data Collection

The study was carried out on Egyptian residents in the age bracket of 25 to 55 years and above and was sampled from urban areas where the use of digital financial technologies is common. Data collection took place from July 20, 2024, to November 30, 2024, and the method of data collection included interviews conducted face to face by trained enumerators at The American University in Cairo, British University in Egypt, German University in Cairo, French University in Egypt, Canadian International College, Siemens Egypt, and Shell Egypt. Paper-based questionnaires were also used to collect data from participants by giving them questionnaires in libraries, student centers, or offices to ensure that people from all backgrounds participated in the study. In addition to the paper questionnaires, the study also employed digital methods in an effort to increase participation, providing respondents with an option to complete the survey via email or phone call for convenience. Therefore, the study was conducted with 314 respondents throughout the data collection period. To increase the response rate and ensure high-quality data, follow-up interviews were conducted via telephone; enumerators called each participant twice to verify survey completion, making the average number of calls per enumerator two. Furthermore, there were cases where individuals declined to participate in the study, about 20 persons declined after being contacted by phone or their emails. These refusals were documented but did not negatively affect the overall response rate since the total number of valid responses remained high at 299 for the whole population after eliminating inattentive responses. Both face-to-face interviews and follow-up communications were used in the data collection process, ensuring that the target population's perception of digital financial technologies was well captured.

The survey response rates were 47.8% male and 52.2% female, and a significant majority of respondents (78.3%) were aged 44 or younger, with the largest group being those aged 25 to 34 (35.5%). In terms of education, the highest percentage of respondents held a bachelor's degree (41.5%), while 31.4% had a master's degree or higher. Regarding monthly income, 37.8% reported earnings between $2000 and $4000, and 31.1% reported earnings below $2000. The demographic characteristics are detailed in Table 1. When asked about their frequency of using P2P platform services, 22.7% of respondents indicated they use them "always," and when combined with those who responded "often" (38.1%) and "sometimes" (25.1%), the total usage rate reaches 85.9%. The primary purpose for using these services was money transfer (40.8%), followed by financial management (14.7%) and payment for services (12%). In response to the question about the most important factors when using P2P platform services, most respondents (56.2%) identified the assurance of security (30.8%) and the trustworthiness of the provider (25.4%) as key considerations, and 19.4% indicated that data security and privacy are important. When asked about their biggest concerns regarding the use of P2P platform services, the most common response was data security and privacy risks (42.8%), followed by concerns about service reliability (19.1%) and the risks of financial loss (19.4%). Further details on responses related to the use of P2P platform services can be found in Table 1.

Table 1: Demographics of Respondents.

Items		Frequency	Percentage
Gender	male	143	47.8
	female	156	52.2
Age	<25	59	19.7
	25~34	106	35.5
	35~44	69	23.1
	45~54	44	14.7
	>55	21	7
Education	high school	28	9.4
	college	53	17.7
	bachelor's	124	41.5
	master's or above	94	31.4
Source of income	salary/sages	132	44.1
	business	103	34.4
	family's support	27	9
	investments or savings	37	12.4
Monthly income	<$2000	93	31.1
	$2000~$4000	113	37.8
	$4000~$6000	72	24.1
	>$6000	21	7
Financial literacy	highly knowledge	50	16.7
	moderately knowledge	130	43.5
	basic knowledge	89	29.8
	limited knowledge	22	7.4
	no knowledge	8	2.7
Frequency of using	always	68	22.7
	often	114	38.1

	sometimes	75	25.1
	rarely	30	10
	never	12	4.0
Purpose	money transfer	122	40.8
	financial management	44	14.7
	payment for services	36	12
	personal convenience	33	11
	investment purposes	29	9.7
	business transactions	35	11.7
Most important	assurance of security	92	30.8
	trustworthiness of the provider	76	25.4
	data security and privacy	58	19.4
	transaction speed	47	15.7
	intermediation effectiveness	13	4.3
	technological maturity and innovation	13	4.3
Concerns	data security and privacy risks	128	42.8
	service reliability issues	57	19.1
	risks of financial loss	58	19.4
	transaction failures	26	8.7
	potential for fraudulent activities	30	10
Total		**299**	**100**

3.1.2. Reliability and Validity

This study employed SPSS version 21 to assess the reliability and validity of the constructs and items used. These constructs and items were modified and supplemented based on previous research. Reliability reflects the consistency of measurements; high reliability is indicated by similar results obtained under the same conditions. To evaluate internal consistency, the Cronbach's alpha coefficient was calculated. The analysis showed that the Cronbach's alpha coefficient exceeded 0.7, indicating that the measurement variables used in this study possess internal consistency (Hair et al., 2006).

Validity serves as a measure of whether the constructs are accurately assessed. To evaluate construct validity, the study utilized the Varimax rotation method and conducted exploratory factor analysis using a criterion of an Eigen value of 1 or higher (Hair et al., 2006). The exploratory factor analysis results indicated that all factor loadings were above 0.5 (Hair et al., 2006), and the cumulative variance explained was 76.1%. The results of the reliability and validity assessments are presented in Table 2.

Table 2: Validity Analysis

Construct and Items	F.L.*	α**
<Assurance> · Promise the quality of their services · Ensure the quality of their services · Confident in the quality of their services	0.661 0.818 0.835	.762
<Intermediation> · Influence the efficiency of transactions · Efficiently intermediate transactions	0.777 0.811	.723
<Security> · Protect user data · Implement security protocols · Maintain user confidentiality · Prevent unauthorized access	0.813 0.805 0.796 0.631	.842
<Trustworthiness> · Trustworthy · Honest · Integrity	0.821 0.856 0.671	.796
<Technological Maturity> · Demonstrate a level of technological maturity · Incorporate advanced technologies · Utilize up-to-date technological solutions · Adopt the latest technological trends · Exhibit technological adaptability	0.936 0.915 0.928 0.918 0.930	.965
<Perceived Risks> · Disclose personal information without consent · Pose a high risk of financial loss · Expose users to potential similar crimes · Have a high level of uncertainty	0.836 0.871 0.767 0.746	.850
<Customer Use Intention> · I thinkP2P platforms are necessary · I find P2P platforms to be user-friendly · I feel comfortable using P2P platforms · I believe it is beneficial to utilize P2P platforms · I generally like P2P platforms	0.693 0.645 0.759 0.761 0.730	.793
Eigen Value	**1.6~4.3**	
Variance (%)	**9.5~25.3**	
Total Variance (%)	**76.1**	

Note: * Factor Loading, ** Cronbach's α

Table 3: Discriminant Validity Analysis

Factors	Mean	SD	1	2	3	4	5	6	7
1. Assurance	2.07	0.93	1						
2. Intermediation	2.97	1.06	0.49**	1					
3. Security	3018	0.88	0.44**	0.52**	1				
4. Trustworthiness	2.87	1.00	0.30**	0.39**	0.54**	1			
5. Technological Maturity	2.62	0.74	-0.03	-0.08	-0.08	-0.07	1		

6. Perceived Risk	3.73	0.97	-0.43**	-0.31**	-0.36**	-0.29**	-0.02	1	
7. Customer Use Intention	2.72	0.84	0.41**	0.55**	0.61**	0.56**	-0.01	-0.46**	1

Note1: M: Mean; SD: Standard Division
Note2: * p<0.1, ** p<0.05, *** p<0.

To evaluate discriminant validity, we conducted a Pearson correlation analysis and examined the factor loadings from the exploratory factor analysis. The results of the correlation analysis indicated that there were no strong correlations between the constructs, and the factor loadings from the exploratory factor analysis also showed low values among the constructs. This confirms that the measurement items can effectively distinguish between the individual constructs.

3.1.3. Common Method Bias

Common method bias refers to the variance that arises from the measurement methods used for constructs. This variance can lead to systematic errors and may result in biases when estimating the true relationships between constructs (Podsakoff et al., 2003). Such bias can occur due to respondents' tendencies to answer in socially desirable ways or to maintain consistency in their responses unconsciously. Additionally, factors such as the use of common scale formats, item grouping, and conducting surveys with the same respondents in the same location can also contribute to this issue. According to Podsakoff et al. (Podsakoff et al., 2003), it is generally estimated that about 25% of the variance in measurement variables may be attributed to systematic error variance in social science research that utilizes survey methods (Podsakoff et al., 2003). Social desirability bias occurs when respondents provide answers that conform to social norms rather than expressing their true thoughts and feelings. This can lead to systematic errors and distort the relationships between constructs (Podsakoff et al., 2003). To mitigate social desirability bias, we assured respondents of anonymity during the survey process and emphasized that this survey was not an evaluation of individuals.

3.2. Hypothesis Test

This study performed a multiple regression analysis to investigate the relationship between service characteristics and customer usage intention in P2P platforms. First, we assessed the results for any potential issues that could distort the findings of the regression analysis. The R^2 value ranged from 0.212 to 0.536, indicating that independent variables can explain up to 53% of the variance in the dependent variable. The F value was between 18.306 ($p < 0.000$) and 79.778 ($p < 0.000$), with the significance level of the F value below 0.05, suggesting that the regression model is a good fit. The variance inflation factor (VIF) was below 10, confirming that there is no multicollinearity problem. Additionally, the Durbin-Watson value ranged from 2.06 to 2.08, which is close to the reference point of 2 and far from 0 or 4, indicating that there is no correlation among the residuals, thus supporting the adequacy of the regression model (Hair et al., 2006). In the hypothesis testing results, H1a, H3a, H2b, H3b, H4b, H6c, and H7 were accepted, while H2a, H4a, H5a, H1b, and H5b were rejected. Furthermore, the control variables (gender, age, education, source of income, monthly income, financial literacy, and frequency of use) did not significantly impact customer usage intention. The results of the hypothesis testing are presented in Table 4.

Table 4: Hypotheses Testing Results

Hypothesis				Standard β	t	Test Result
H1a	Assurance	a →	Perceived Risk	-0.325	-5.354***	Accept
H2a	Intermediation			-0.041	-0.638	Reject
H3a	Security			-0.144	-2.130**	Accept
H4a	Trustworthiness			-0.100	-1.622	Reject
H5a	Technological Maturity			-0.058	-1.134	Reject
H6c	Perceived Risks	c →	Customer Use Attitude	-0.460	-8.932**	Accept
H1b	Assurance	b →	Customer Use Intention	0.068	1.405	Reject
H2b	Intermediation			0.240	4.710***	Accept
H3b	Security			0.346	6.425***	Accept
H4b	Trustworthiness			0.265	5.383***	Accept
H5b	Technological Maturity			0.054	1.318	Reject
Path a: R2 = 0.238, F=18.306(0.000), VIF 1.009~1.76, Durbin-Watson 2.08 Path c: R2 = 0.212, F=79.778(0.000), VIF 1.000~1.00, Durbin-Watson 2.06 Path b: R2 =0.536, F=27.584(0.000), VIF 1.018~1.79, Durbin-Watson 2.07						

Note: * p<0.1, ** p<0.05, *** p<0.01

3.3. Mediating Effect

This study assumes that perceived risks have a mediating effect in the relationship between service characteristics and customer use intention in P2P platforms. To examine this mediating effect, we utilized Baron and Kenny's three-stage mediated regression analysis, the Sobel test, and the Bootstrapping method. The Bootstrapping analysis was performed using SPSS Process Macro Model 4 (Hayes, 2012), with the number of Bootstrapping samples set to 5000. The results of the Bootstrapping analysis confirm the indirect effect, indicated by BootLLCI (the lower bound of

the confidence interval) and BootULCI (the upper bound). The statistical significance of the indirect effect is assessed by checking whether 0 falls between BootLLCI and BootULCI (Hayes, 2012). The analysis revealed that only technological maturity had 0 included between BootLLCI and BootULCI, suggesting that there is no mediating effect. Furthermore, we established the reliability of the mediating effect analysis through Baron and Kenny's three-stage mediated regression analysis and the Sobel test. The Z value was calculated using the formula proposed by Sobel (Baron & Kenny, 1986; Sobel, 1982). The Sobel test results indicate that only assurance and security influence customer use intention via the mediation of perceived risk. The outcomes of the mediating effect analysis are presented in Table 5.

Table 5: Mediating Effect

Independent variables	Bootstrapping		Sobel Test		Test Result
	Indirect Effect	LLCI –ULCI	Coefficient	Z value	
Assurance	0.136	0.081 –0.199	0.135	4.593***	complete mediation
Intermediation	0.078	0.044 –0.120	0.015	0.626	direct only
Security	0.090	0.051 –0.137	0.063	2.076***	partial mediation
Trustworthiness	0.078	0.044 –0.121	0.038	1.601	direct only
Technological Maturity	0.012	-0.052 –0.078	0.030	1.125	no effect

Note: * p<0.1, ** p<0.05, *** p<0.01

The results of the mediating effect analysis can be interpreted in four key aspects. First, assurance completely mediates perceived risk, indicating that assurance does not exert a direct effect on customer use intention but rather operates through the mediation of perceived risk. Second, security partially mediates perceived risk, suggesting that security has both direct and indirect effects on customer use intention. Third, intermediation and trustworthiness exhibit only direct effects on customer use intention; the Sobel test results revealed that the Z value was not significant, indicating that perceived risk does not act as a mediator in this context. Fourth, technological maturity has no direct effect on customer use intention and also shows no mediating effect of perceived risk. Detailed analysis results can be found in Tables 4 and 5.

3.4. Summary of Results

The key findings of the study can be summarized as follows: First, the assurance and security of P2P platform services negatively influenced customers' perceived risks. Additionally, perceived risks served as a complete or partial mediator between the service characteristics of P2P platforms and customer use intention. This indicates that as P2P platforms enhance service quality, protect user data, and maintain confidentiality, perceived risks decrease, which in turn positively impacts customers' intention to use the platform. Second, the service characteristics of intermediation and trustworthiness did not affect customers' perceived risks; however, both had a direct influence on customer use intention. This suggests that a stronger belief in the honesty, integrity, and reliability of P2P platform services leads customers to feel more comfortable and see greater benefits in using these platforms. Finally, the service characteristic of technological maturity did not influence customers' perceived risks or their intention to use P2P platforms, nor did it mediate the relationship between perceived risks and customer use intention.

4. Discussion

This study explores the relationship between five essential service characteristics—assurance, intermediation, security, trustworthiness, and technological maturity—along with perceived risks and user intention toward P2P platforms. Focusing on Egyptian consumers, the research highlights the significance of perceived risks as both a barrier and a mediator in adopting these platforms. The results indicate that security directly and indirectly influences user intention through perceived risks, suggesting that users are drawn to platforms that offer strong security features to minimize privacy and financial risks. In contrast, assurance has an indirect effect on adoption, as it helps to reduce risk perceptions. While promises of quality are important to users, they do not translate into action unless they effectively address concerns about potential threats.

The literature analysis reveals that intermediation and trustworthiness have a significant direct impact on user intention, indicating that platforms that facilitate transactions effectively and operate reliably will see increased participation. Notably, technological maturity showed no significant influence on adoption in this study, either directly or indirectly. This suggests that users may prioritize the risks management and reliability aspects of a system over its technological complexity, if the technology does not exacerbate these concerns. For example, the Egyptian context illustrates how trust and security measures are developed to address local worries about data and financial protection. These findings also raise questions about whether similar trends would be observed in markets with different regulatory or cultural systems.

5. Conclusions

The key implications of the study are as follows: First, P2P platforms that incorporate strong security measures—such as fraud detection, data encryption, and transparent privacy policies—help alleviate users' concerns about risk. When these features are clearly communicated, they enhance user confidence and encourage adoption. Second, while users seek guarantees of quality and reliability, these assurances only influence behavior if they directly address core concerns like financial loss or data breaches. To build trust, platforms should link their security and reliability claims to concrete actions that visibly mitigate risks. Third, effective intermediation, including responsive customer support, accessible dispute resolution, and transparent fee structures, plays a crucial role in user adoption. Even if some risks remain, clearly defining the platform's role in managing them helps position it as a safe and user-friendly option. Fourth, although technologies like blockchain and AI improve backend security and efficiency, user trust is primarily shaped by perceived credibility rather than technical specifications. Community reviews, real-life testimonials, and endorsements from reputable organizations often have a stronger impact on trust than advanced technological features alone. Finally, in emerging markets like Egypt, where concerns about fraud and privacy are particularly high, targeted outreach and hands-on demonstrations of security measures can be highly effective. Messaging that aligns with local culture and norms makes the platform's value proposition more relevant and appealing.

The limitations of the study are as follows: First, the data collected in this study is cross-sectional, capturing users' perceptions at a specific point in time. Future research could track how economic, technological, or regulatory changes impact P2P adoption over time. Second, relying on survey data raises concerns about social desirability bias, where respondents may provide answers, they perceive as appropriate rather than their actual experiences and satisfaction levels. Utilizing multiple data sources (e.g., platform usage data, experimental studies) could provide a richer understanding of the phenomena. Third, although the sample was drawn from various urban areas in Egypt, it may not fully represent the rural population or other contexts, such as international settings with differing cultural, economic, and regulatory conditions. Cross-national research could be conducted to validate these findings and enhance their robustness. Fourth, users' limited understanding of certain technologies, such as distributed ledgers and AI-based risk scoring, appears to have restricted the impact of technological maturity. Future research should assess users' understanding and perceptions of the usefulness of these new tools. Fifth, while the study included control variables such as age, income, and financial literacy, a more detailed analysis is needed to explore how these factors influence specific user behaviors. It is possible that other psychological or cultural factors (e.g., uncertainty avoidance, digital literacy) may help explain variations in P2P adoption.

6. Business Implications

Considering the findings of this study, it is recommended that P2P service providers adopt a risk management approach in the design of their platforms, emphasizing transparency and security. Integrating robust fraud prevention measures, secure payment gateways, and well-defined privacy policies can significantly alleviate users' concerns. Additionally, establishing effective customer service systems to mediate and resolve disputes will enhance users' confidence, as disputes can be handled efficiently.

Trustworthiness can also be bolstered through user reviews and ratings, which can further increase engagement. Thus, it can be concluded that technological maturity alone does not significantly influence the adoption of the P2P model. It is crucial for platforms to help users understand how new tools, such as blockchain and AI, can add value to their daily activities. Rather than solely emphasizing innovation, highlighting real-life improvements in security may have a more positive impact.

Communication strategies should be tailored to meet the preferences of the local market, particularly in regions sensitive to fraud, such as Egypt. In emerging markets, the focus should be on building trust and ensuring the security of the platform rather than on the sophistication of the technology used. Lastly, future research should assess sociocultural factors and regulatory influences on the adoption of convenient environments for P2P transactions. Promoting adaptive measures to protect users while fostering innovation will be essential for creating a supportive environment for P2P services.

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