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Article

Consumer perceptions and attitudes towards e-payment services offered by fintech companies: Evidence from India

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Abstract: The rapid advancement of financial technology (Fintech) has revolutionized the way financial transactions are conducted, with E-payment services becoming increasingly integral to daily commerce. This paper examines consumer perceptions and attitudes towards E-payment services offered by Fintech companies, identifying key factors that influence their acceptance and usage. Employing a quantitative approach, the research integrates quantitative data from surveys and applied SEM (Structural Equation Modelling) through AMOS. Out of 450, 420 respondents have given their views on perceptual preferences and attitudes with the help of SPSS. KMO and Bartlett's Test are executed to understand and to check the factors for implementing factor analysis further through extractions. Anticipated findings are expected to reveal a spectrum of consumer attitudes shaped by factors such as trust, security, convenience, and technological familiarity. It contributes to the existing literature by providing updated insights into consumer behaviour in the Fintech sector and suggesting actionable strategies for service providers to enhance user engagement and satisfaction. It holds the potential to inform both theoretical frameworks in technology acceptance and practical marketing strategies for Fintech companies aiming to optimize E-payment services for diverse consumer bases.

Keywords: consumer attitude; consumer perceptions; digital payments; fintech; financial technology; e-payment services

1. Introduction

The advent of financial technology (Fintech) companies has significantly transformed the landscape of financial services, introducing a plethora of E-payment options that promise to enhance transactional efficiency and user experience (Dissanayake et al., 2023; Hazar and Babuşcu, 2023; Lontchi et al., 2023; Puschmann, 2017). This paradigm shift towards digital financial solutions has not only reshaped the way consumers engage with their finances but has also posed new challenges and opportunities in understanding consumer behaviour in the digital age (Asadova and Aksoy, 2021; Fu and Mishra, 2022; Srivastava, 2020; Zavolokina et al., 2016). As E-payment services offered by Fintech companies become more embedded in everyday financial transactions, it is imperative to delve into consumer perceptions and attitudes towards these services to gauge their acceptance and identify the factors that influence their usage (Arner et al., 2020; Huei et al., 2019; Tang et al., 2020). The burgeoning interest in E-payment solutions is driven by various factors, including the convenience

of transactions, the speed of service delivery, and the perceived security and reliability of digital payment platforms (Kulkarni and Varma, 2021; Najib and Fahma, 2020). However, despite the rapid adoption of E-payment services globally, there exists a notable variance in consumer attitudes, which can be attributed to a myriad of factors such as technological literacy, trust in digital transactions, and concerns over privacy and data security (Iman, 2018; Riskinanto et al., 2017; Saxena et al., 2021; Shakeel et al., 2022; Tronnier et al., 2023). This study aims to explore these multifaceted consumer perceptions and attitudes, providing a comprehensive overview of the current state of E-payment services as perceived by users. By examining the extent to which consumers are embracing these digital financial services, the research seeks to contribute valuable insights into the factors that facilitate or hinder the adoption of Fintech solutions (Coetzee, 2018; Micu et al., 2016), thereby offering a foundational understanding that could guide service providers in tailoring their offerings to better meet consumer needs and expectations. Given the rapid evolution of the Fintech sector and the critical role of E-payment systems in fostering financial inclusion and facilitating seamless economic transactions, this study not only addresses an academic gap but also serves a practical purpose in informing the development and refinement of E-payment services, ensuring they align more closely with consumer expectations and preferences, thus driving further innovation in the Fintech industry (Campbell-Verduyn et al., 2021; Gowda and Chakravorty, 2021; Larios-Hernández, 2017; Verma, n.d.). The author conducted systematic literature review to examine consumer acceptance in fintech adoption on the basis of asking research questions based on consumer behaviour through various factors like performance, social influence, cultural values, knowledge and service quality to enhance fintech acceptance (Saputra, 2023). P2P payment service users exhibit higher frequency of usage, proficiency and intention to continue using the service compared to users of robo-investment or digital (Koziel, 2023). The strategies of fintech companies to enter the financial services sector and banking activities for rise of fintech giving outcome of fintech usage of innovative strategies while bans invest in technology and fintech companies to compete in the digital age (Lestari and Rahmanto, 2024). It is important to get an idea about the impact of green fintech on sustainability and consumer behaviour within smart cities, finding that green fintech supports sustainability efforts and improves consumer adoption of sustainable behaviours (Aboalsamh and Khrais, 2023).

1.1. Transformation of financial services by Fintech

The transformation of financial services by Fintech has been nothing short of revolutionary, ushering in an era where technology-driven solutions redefine the norms of financial transactions and consumer engagement with financial institutions. This shift, powered by Fintech companies, has not only democratized access to financial services but has also introduced a level of convenience, speed, and efficiency previously unimaginable (Arner et al., 2020; Gomber et al., 2018; Pantielieieva et al., 2019). Through the deployment of innovative technologies such as blockchain, artificial intelligence, and mobile applications, Fintech has disrupted traditional banking and financial service models, enabling secure, instant, and accessible payment solutions that cater to the digital-native consumer (Eickhoff et al., 2018; Ernst and

Young, 2017). E-payment services, one of the most significant Fintech innovations, have facilitated a seamless transition from physical currency to digital transactions, promoting a cashless society where financial operations are conducted without the physical exchange of money (Buteau et al., 2021; Kulkarni and Varma, 2021; Najdawi et al., 2019; Ryu and Ko, 2020; Yadav and Spandana, 2023). This digital transformation has extended financial inclusion to underserved and unbanked populations by offering them affordable and user-friendly platforms to manage their finances, thereby contributing to economic empowerment and growth. Moreover, Fintech's agile and customer-centric approaches have compelled traditional financial institutions to innovate and adapt, fostering a competitive environment that benefits consumers. The integration of Fintech services into everyday life has not only enhanced the user experience by making financial transactions more straightforward and transparent but has also raised expectations for personalized and instant financial services (Bajpai and Mazhar, 2022; Campbell-Verduyn et al., 2021; Kini, 2023; Puschmann, 2017). As Fintech continues to evolve, it promises to further penetrate and transform various aspects of financial services, challenging conventional practices and paving the way for a future where financial transactions are increasingly democratized, digitized, and decentralized, aligning with the changing preferences and behaviours of the global consumer base (Dissanayake and Popescu, 2023; Lontchi et al., 2023; Mishra and Albalushi, 2023; Xia et al., 2023).

1.2. Impact on consumer engagement

Fintech has significantly transformed consumer engagement in the financial sector, introducing convenience, control, and customization. The integration of technology into everyday financial activities has led to a more informed, empowered, and demanding consumer base. E-payment services and mobile banking apps have shifted control to consumers, allowing them to perform transactions, monitor finances, and access financial information anytime and anywhere (Burragoni, 2017; Chu, 2018; Huei et al., 2019; Stewart and Jürjens, 2018a; Tut, 2023). This has increased the frequency and volume of financial transactions, raising consumer expectations for personalized, intuitive, and frictionless experiences. Fintech innovations have introduced new modes of engagement, such as peer-to-peer lending and crowdfunding platforms, expanding the range of financial activities available to consumers (Cai, 2018; Huei et al., 2019; Omarini, 2018; Ravikumar, 2019a; Saksonova and Kuzmina-Merlino, 2017; Schindler, 2017; Srivastava, 2020; Thomason et al., 2018). These technological advancements have also facilitated greater transparency in transactions and fees, enhancing trust and confidence among consumers (Brandl and Hornuf, 2020). The researchers studied about the South African Fintech market to understand the consumer factors to adopt fintech like perceived utility, socio-economic influencers, mobile device trust and youth (Barbara et al., 2022). Financial literacy has been measured through implementing TAM3 model factors, which positively influence fintech adoption among Millennial consumers in Jordan, with a behavioural intention to use having the strongest impact (Mohamed and Orabi, 2024).

1.3. Significance of understanding consumer perceptions

Understanding consumer perceptions of Fintech and E-payment services is crucial for their development, acceptance, and success. These perceptions, influenced by trust, security, convenience, and usability, directly impact consumer willingness to engage with and embrace E-payment solutions, determining their mainstream adoption rate (Riskinanto et al., 2017). Fintech firms can tailor their offerings to meet these needs, enhancing user experience and satisfaction. This insight helps identify and address potential barriers to acceptance, such as concerns over data privacy or technology intimidation (Buteau et al., 2021; Taskinsoy, 2019). In a competitive Fintech sector, understanding consumer perceptions provides a competitive edge, allowing companies to differentiate themselves and innovate in ways that resonate with consumers. Aligning product development and marketing strategies with consumer expectations can foster loyalty, increase market share, and drive sustainable growth. Understanding consumer perceptions is also vital for regulatory bodies and policymakers to ensure the regulatory framework supports innovation while protecting consumer interests.

1.4. Factors influencing e-payment adoption

E-payment adoption is influenced by trust, convenience, technological infrastructure, social influence, financial factors, and regulatory support (Burragoni, 2017; Chawla and Joshi, 2017, 2019; Kwilinski et al., 2020). Trust is crucial for consumers to trust E-payment platforms for their financial transactions, as it is closely tied to perceived security and protection against fraud and data breaches. Convenience is also key, as it allows for quick, hassle-free transactions from any location. The perceived usefulness of E-payment services also influences adoption rates. Technological infrastructure, including hardware, software, and internet connectivity, also affects adoption. Social influence, financial factors, and regulatory support contribute to the success of E-payment adoption. These factors create an ecosystem where successful adoption is not only a matter of technological capability but also of addressing human needs and concerns.

1.5. Variability in consumer attitudes

Consumer attitudes towards E-payment and Fintech services vary across different demographics and markets. Factors such as technological literacy, cultural influences, economic factors, personal experiences with technology, and perceived benefits of E-payment services influence acceptance and usage patterns. Younger, tech-savvy generations may embrace E-payment solutions more readily than older consumers, while cultural attitudes, privacy concerns, and trust in technology vary across societies. Economic factors, income levels, and access to traditional banking services also contribute to the variability. Personal experiences with technology, such as cyber fraud or data breaches, can significantly impact trust levels and willingness to engage with digital financial services. Fintech companies must adopt a nuanced approach to market segmentation and product development to foster broader acceptance and integration of E-payment solutions into daily financial practices.

1.6. Contribution to fintech knowledge and practice

This research explores consumer perceptions and attitudes towards E-payment services, enhancing academic knowledge and practical application in the Fintech sector. It validates theoretical models of "technology adoption and acceptance, such as the Technology Acceptance Model (TAM)" and the Theory of Planned Behaviour (TPB), in digital financial services. The study provides insights for Fintech companies to design user-centric E-payment platforms that align with consumer expectations, and enhance usability, trust, and satisfaction. It also identifies consumer concerns like security and privacy, and helps Fintech firms tailor their offerings to meet diverse user needs. The research informs policy-making and regulatory approaches, highlighting consumer protection and education as crucial components for E-payment adoption.

1.7. Importance of the study for innovation in fintech

The study explores consumer perceptions and attitudes towards E-payment services, focusing on factors such as security, usability, and trust. It provides valuable insights for the design and refinement of E-payment solutions, ensuring a thorough understanding of the market's pulse. This alignment between technological advancements (Anagnostopoulos, 2018; Burragoni, 2017) and consumer expectations (Omarini, 2018; Stewart and Jürjens, 2018b) is crucial for successful adoption and integration into daily financial practices. Financial technologies that are more user-friendly, open, and inclusive are the result of innovation that prioritizes the needs of end users, according to the report. Increasing the availability of financial services to underprivileged people, not only boosts the competitiveness of Fintech businesses but also helps with financial inclusion. The study's potential to catalyse a paradigm shift in Fintech development is significant, paving the way for a future where digital financial services are integrated into global economic activities.

2. Literature review and hypothesis development

In their 2021 study, Błach and Klimontowicz explored PayTechs, a type of Fintech business, and their activities in the market, specifically focusing on the mobile payment sector. The researchers employed both inductive and deductive methodologies along with comparative analysis to define the business models and market behaviour of PayTechs. The empirical portion of the research utilized quantitative data from the National Bank of Poland, the Central Statistical Office, and the Bank for International Settlements. They examined the Polish Payment Standard (BLIK) to understand its dissemination, acceptance, and success in mobile payments. The study also delved into the characteristics of PayTechs, their open business models, and the factors contributing to the acceptance and diffusion of mobile payments (Kumari and Kumar, 2024; Vonny et al., 2024).

Kulkarni and Varma (2021) found that digital transactions are revolutionizing worldwide commerce, including in India. Efficient payments boost economic liquidity. Consumer opinions of online and digital payments are examined for safety and convenience. Digital transaction pros and cons are examined in the literature. The survey demonstrates customers' growing acceptance and problems with digital

payments. Based on the above literature review, the following hypothesis has been developed.

H1: There is no relationship between consumer perception and E-payment services provided by Fintech companies.

(Kamra and Thukral, 2021) studied "Digital Wallets and User Attitude: The Rise of Fintech" and said that the finance industry is experiencing a new wave of competition, with startup firms partnering with tech giants to drive the Fintech Revolution. Fintech has expanded into mobile payment, money transfers, crowd-funding, P2P loans, blockchain, cryptocurrency, and robot investing. Increased consumerism has led to companies revising customer experience, with Fintech closely linked to customer experience (Kamra and Thukral, 2021; Mazhar and Khan, 2023; Nasir et al., 2021)

According to (Brahmbhatt, 2018; Huei et al., 2019; Krishnakumari and Pavithra, 2018; Teng and Khong, 2021), "Examining actual consumer usage of E-wallet: A Case Study of big data analytics" examines e-wallet usage. E-wallets draw users for cashback and reward points, and effective business models include a user-friendly interface, promotional advertising, and real-time customer care. Stricter government rules increase competition between banks and third-party e-wallets. E-wallets lack critical mass due to low merchant usage. To be sustainable, firms must understand user behaviour and read customers' pulse, according to the report.

Bahadur (2022) studied "Emerging Research on Consumer Redlines for Digital Payment: Learning from Literature Review Narratives" and said that the growth of digital payments is largely due to the internet and mobile phones, but there is a lack of research on factors influencing their use, adoption, and acceptance. This analysis found eight characteristics impacting consumer digital payment readiness in 93 research papers. The results show no single explanation accounts for the complexity of electronic payment adoption. The study suggests a unified policy-making framework and expanded digital education for widespread acceptance. It also advises upgrading schooling to reflect sophisticated technology's advantages. Existing models ignore social and cultural elements in technology adoption.

Liu et al. (2022) found that the COVID-19 pandemic has accelerated financial digitization, affecting consumers' continuance usage intention toward E-payment. E-payment security, perceived seriousness, and utility strongly impact electronic word of mouth, according to Taiwanese research. Through perceived utility and eWOM, security and seriousness affect continued use intention.

According to Shahzad et al. (2022), "COVID-19's Impact on Fintech Adoption: Behavioural Intention to Use the Financial Portal" proposes an updated technology acceptance model (TAM) to explain customer uptake of Fintech services. It finds that trust, simplicity of use, user innovativeness, and trust influence Fintech platform attitudes and behaviour. Perceived usefulness did not affect adoption or behavioural intention, the research revealed. This holistic method provides a broader view of consumer Fintech adoption views.

Kumari and Kumar (2024) studied "From Kirana Stores to E-commerce: The Evolving Landscape of Consumer Perceptions on Digital Payments in India" and said that India is increasingly adopting digital transactions, as they contribute to faster liquidity movement and better customer service. This research explores consumer

perceptions of online and digital payment methods, highlighting their security concerns. The study provides valuable insights for marketers and businesses. India's acceptance of digital payment methods is increasing annually, and the survey highlights the benefits and challenges customers face when implementing digital payments. Digital payments are expected to remain a significant trend in India (Chawla and Joshi, 2019; Huei et al., 2019; Ravikumar, 2019). Based on the above literature review, the following hypothesis has been developed.

H2: There is no impact of E-payment service attributes on the attitude of consumers.

3. Aims and objectives

This study offers fresh insights into the academic literature by demonstrating that awareness and perception significantly influence economic innovation. It establishes consistent relationships among key constructs related to consumer perception and E-payment services, emphasizing the limited research on the interplay of these factors. By addressing these gaps, the study aims to deliver a thorough analysis of the relationship between consumer perception and E-payment services provided by Fintech companies. This analysis offers valuable insights for policymakers, researchers, and practitioners, underscoring the need for increased focus on the impact of E-payment service attributes on consumer attitudes.

4. Methods

4.1. Measures

This study adopts a quantitative approach to explore consumer perceptions and attitudes towards E-payment services (Arner et al., 2020; Tang et al., 2020) offered by Fintech companies. Targeting adult users of E-payment platforms, the research utilizes purposive sampling to gather data from approximately 420 survey respondents out of 450 aiming to achieve statistical significance. Data analysis employs descriptive and inferential statistics for survey responses. Ethical considerations include informed consent and data anonymization, with acknowledgement of limitations like sampling bias and the generalizability of findings. The study focuses on gathering the perceptual preferences of consumers concerning Fintech E-payment services. Also to understand the attributes of E-payment services and related attitudes. The reviews of literature are taken into consideration from Scopus, Web of Science and Science Direct.

4.2. Collection of data and sample selection

Data were gathered using a structured questionnaire which contains a set of 30 questions designed to analyze and assess the customer awareness and perceptual consumer behaviour regarding the security measures of online payment systems provided by Fintech companies. The questionnaire featured items adapted from prior research and employed a 5-point Likert scale, with options ranging from "Strongly Disagree" to "Strongly Agree" (1 to 5), to capture participants' responses. This scale enables us to measure the level of agreement or disagreement with each statement regarding perception and attitude.

Data collection took place in Lucknow, Uttar Pradesh. This city was chosen for their significant population and diverse economic activities, which play crucial roles in influencing customer awareness and consumer behaviour.

Respondents were selected through purposive sampling, specifically targeting customers working in both government and private institutions across the city. This focused sampling strategy aimed to ensure representation from areas characterized by economic diversity and demographic relevance.

Surveys were employed as the primary method of data collection. They were meticulously designed to capture insights into consumer awareness and consumer perception towards its usage.

To ensure the survey instrument's validity, it was pre-tested with 30 respondents, and minor adjustments were made based on the feedback received. Initially, 450 questionnaires were distributed, along with a cover letter explaining the study's objectives and emphasizing the voluntary nature of participation. Participants were assured of the confidentiality of their responses, which would be used solely for academic research. Following a reminder, 420 fully completed and viable questionnaires were returned, resulting in a response rate of 93%. Data collection for this study took place between January and June 2023.

4.3. Data analysis technique

This study utilized Structural Equation Modeling (SEM) with AMOS software to evaluate the proposed hypotheses. SEM is a powerful statistical technique for analyzing complex relationships among variables, allowing researchers to test and validate theoretical models that depict intricate networks of relationships. AMOS, which stands for Analysis of Moment Structures, is a widely used tool for conducting SEM. This method enables the examination of both measurement and structural models, making it particularly suitable for this study. It allows for the estimation of complex structural associations between variables and their interrelationships. AMOS supports SEM analysis through path analysis, which estimates the relationships between variables while accounting for measurement errors, thus enhancing the realism of the models. For estimating the complexity of structural associations among various variables and relationships analysis, this approach is suitable (Mazhar and Khan, 2023).

Additionally, SEM was employed to assess how well the data fit the theoretical model, using key indicators such as chi-square/degrees of freedom (χ^2/df), CFI, GFI, AGFI, TLI, IFI, RMSEA, and PGFI. After conducting validity and reliability tests, the AMOS SEM analysis was used to interpret the hypothesis results, as detailed in the analysis section (Teng et al., 2019). Apart from SEM, the other statistical tools used to analyze the collected data included regression analysis, percentage analysis, factor analysis, and one-way ANOVA (analysis of variance).

5. Results

5.1. Analysis of reliability

The alpha value was utilized to assess inter-item consistency. As shown in **Table 1**, the scale exhibits a high level of internal consistency, with each component having an alpha value exceeding 0.7 (Taber, 2018). This indicates that the study maintained a high overall level of consistency and acceptable reliability as shown in **Table 1**.

Table 1. Reliability analysis.

Reliability statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.861	0.895	98

5.2. Descriptive analysis

Table 2. Correlation test.

Correlations									
		Consumer's Perception	Convenience Factors	Accessibility Factors	Acceptability factors	Cost Factors	Trust Factors	Risk Factors	Security and privacy
Consumer's Perception	Correlation	1	−0.069	−0.146**	-0.056	−0.125*	0.071	−0.241**	−0.053
	Sig. (2-tailed)		0.16	0.003	0.255	0.01	0.144	0	0.278
Convenience Factors	Correlation	−0.069	1	0.798**	0.515**	0.745**	0.596**	0.103*	0.713**
	Sig. (2-tailed)	0.16		0	0	0	0	0.036	0
Accessibility Factors	Correlation	−0.146**	0.798**	1	0.568**	0.767**	0.630**	0.129**	0.704**
	Sig. (2-tailed)	0.003	0		0	0	0	0.008	0
Acceptability factors	Correlation	−0.056	0.515**	0.568**	1	0.597**	0.569**	0.193**	0.579**
	Sig. (2-tailed)	0.255	0	0		0	0	0	0
Cost Factors	Correlation	−0.125*	0.745**	0.767**	0.597**	1	0.672**	0.068	0.711**
	Sig. (2-tailed)	0.01	0	0	0		0	0.167	0
Trust Factors	Correlation	0.071	0.596**	0.630**	0.569**	0.672**	1	−0.032	0.740**
	Sig. (2-tailed)	0.144	0	0	0	0		0.512	0
Risk Factors	Correlation	−0.241**	0.103*	0.129**	0.193**	0.068	−0.032	1	0.072
	Sig. (2-tailed)	0	0.036	0.008	0	0.167	0.512		0.14
Security and privacy	Correlation	−0.053	0.713**	0.704**	0.579**	0.711**	0.740**	0.072	1
	Sig. (2-tailed)	0.278	0	0	0	0	0	0.14	

In **Table 2**, correlation analysis reveals intricate relationships between consumer perceptions and factors such as convenience, accessibility, acceptability, cost, trust, risk, and security and privacy. Notably, consumer perception slightly worsens with improved accessibility (−0.146, $p = 0.003$) and higher costs (−0.125, $p = 0.010$), indicating a complex dynamic. A strong positive correlation exists between convenience and accessibility (0.798, $p < 0.000$), as well as between convenience and acceptability (0.515, $p < 0.000$), cost (0.745, $p < 0.000$), trust (0.596, $p < 0.000$), and security and privacy (0.713, $p < 0.000$), underscoring convenience's pivotal role in enhancing the consumer experience. In contrast, risk factors show weak or non-significant correlations with other variables, suggesting that perceived risks have minimal impact on or from other factors.

The analysis of the data through the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity indicates that the dataset is suitable for factor analysis. The KMO measure (**Table 3**), at 0.705, suggests a moderate to high adequacy of the sample for such analysis, implying that the partial correlations among variables are not too small. This is generally considered good. Bartlett's Test of Sphericity further supports the feasibility of factor analysis on the dataset, with an approximate chi-square value of 918.781 and a significance level of 0.000.

Table 3. KMO Bartlett's test.

KMO and Bartlett's test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.705
	Approx. Chi-Square	918.781
Bartlett's Test of Sphericity	Df	28
	Sig.	0.000

The Component Matrix (**Table 4**) from the Principal Component Analysis (PCA) reveals how variables relate to two main components extracted for simplification and interpretation of the dataset. The loadings, representing the correlation between variables and components, help identify the underlying patterns within the data.

Table 4. Component matrix.

Component Matrix		
	Component	
	1	2
Consumer Awareness	0.822	−0.335
Consumer Perception	0.327	0.718
Adoption of E-payment Services	0.470	0.000
Cybersecurity concerns	0.867	−0.335
Usage convenience	−0.321	−0.304
Attitude towards E-payment	0.314	0.498
E-payment attribute	0.748	−0.281
Demographical Conditions	0.497	0.579
Extraction Method: Principal Component Analysis.		
a. 2 components extracted.		

Component 1 is strongly associated with 'Consumer Awareness,' 'Cybersecurity Concerns,' and 'E-payment Attribute,' indicated by high positive loadings. This suggests that this component might represent a dimension of security and awareness within the context of E-payment services. It reflects how consumer awareness and concerns about cybersecurity significantly influence this aspect of the E-payment experience.

Component 2 shows significant positive associations with 'Consumer Perception' and 'Demographical Conditions,' and to a lesser extent, 'Attitude towards E-payment.' This pattern implies that Component 2 might embody factors related to the

demographic influences on consumer perceptions and attitudes towards E-payment services. It suggests that how consumers perceive and feel about E-payment services is influenced by their demographic background.

5.3. Structural equation modelling

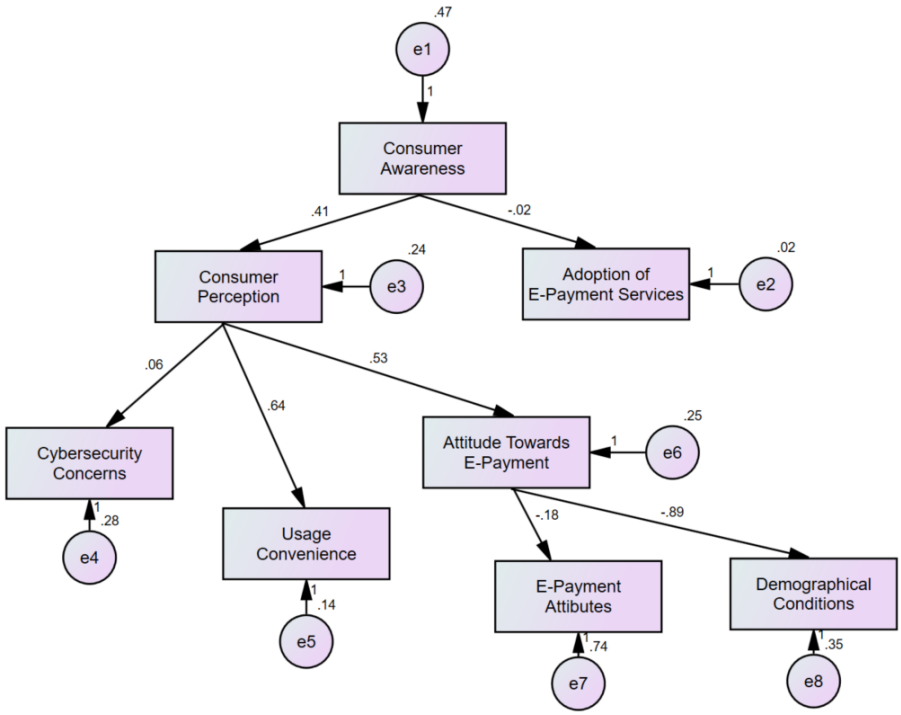

Figure 1. SEM (structural Equation modelling)-author's compilation through AMOS.

In the SEM diagram **Figure 1**, various constructs like 'Consumer Awareness,' 'Consumer Perception,' 'Cybersecurity Concerns,' 'Usage Convenience,' 'Attitude towards E-payment,' 'E-payment Attributes,' and 'Demographical Conditions' are depicted, each with respective error terms (e1–e8). The diagram represents a model where 'Consumer Awareness' is directly influencing 'Consumer Perception,' which in turn has a significant impact on 'Attitude towards E-payment.' 'Consumer Awareness' also has a direct but negative relationship with 'Adoption of E-payment Services,' as indicated by the negative coefficient.

'Cybersecurity Concerns' and 'Usage Convenience' are shown to have a strong and positive direct impact on 'Consumer Perception.' Meanwhile, 'Attitude towards E-payment' is influenced by 'Consumer Perception' and 'E-payment Attributes,' and it also affects 'Demographical Conditions' negatively. This suggests that as the attitude towards E-payment improves, some demographical factors might be less influential.

5.4. Testing of the hypothesis

Hypothesis 1: There is no relationship between the consumer perception and E-payment services provided by Fintech companies.

The analysis of consumer perception in relation to E-payment services offered by FinTech companies indicates significant relationships with various factors, leading to the rejection of the hypothesis (H01) that there is no connection between them. The study found notable negative correlations between consumer perception and both accessibility ($p = 0.003$) and risk factors ($p < 0.001$), suggesting that more positive perceptions of accessibility or reduced risk perceptions enhance consumer perceptions of E-payment services. Additionally, a positive correlation with cost factors ($p = 0.010$) indicates that perceptions of cost are significantly related to consumer views.

Conclusion: Hypothesis 1 is rejected.

Hypothesis 2: There is no impact of E-payment service attributes on the attitude of consumers.

The Pearson Correlation coefficient of −0.158 reveals a slight negative relationship between consumer awareness and the adoption of E-payment services, suggesting that increased awareness correlates with a marginal decrease in adoption. The significance level of 0.001, well below the standard thresholds of 0.05 or 0.01, indicates that this finding is unlikely to be due to chance. Consequently, we reject the null hypothesis (H02), which proposed no relationship between consumer awareness and the adoption of E-payment services. This statistically significant yet modest negative correlation indicates that, within this study's context, greater consumer awareness is inversely related to the adoption of E-payment services provided by FinTech companies.

Conclusion: Hypothesis 2 is rejected.

Therefore, based on the analysis and the presented results, both Hypothesis 1 and Hypothesis 2 are not supported.

6. Discussion

The study reveals that consumer perceptions of E-payment services are heavily influenced by factors like accessibility, cost, and risk, underscoring the need for FinTech companies to enhance these aspects to improve customer satisfaction. This research contributes to existing literature by highlighting the interconnected nature of these factors in shaping consumer experiences, with convenience being particularly crucial, and also elucidates how perceptions affect views on accessibility and cost.

The findings indicate that the first hypothesis (H1*),* which posits no relationship between consumer perception and E-payment services provided by FinTech companies, is rejected. The rejection of this hypothesis implies that consumer perceptions are indeed significantly influenced by various aspects of these services, rather than being neutral or unrelated.

The second hypothesis (H2), which states there is no relationship between consumer awareness levels and the adoption of E-payment services, is not validated. The study suggests an inverse relationship, indicating that higher levels of awareness do not necessarily correspond to increased adoption rates within the context of this study.

In summary, the findings underscore the need for user-centric product development and personalized marketing strategies, as well as addressing security, privacy, and usability concerns. This approach can enhance user engagement and

adoption of E-payment solutions, contributing to financial inclusion and the digital economy growth.

7. Conclusion

The study concludes hypotheses 1 and 2 are rejected indicating the significant relationship between consumer attitudes towards E-payment services and the attributes of these services provided by Fintech companies. The results present a nuanced understanding of how consumers perceive E-payment services, highlighting a weak but statistically significant inverse relationship between consumer attitudes and E-payment service attributes. Specifically, the regression analysis revealed that only 1.2% of the variance in E-payment service attributes could be explained by consumer attitudes, indicating a minimal impact. Despite this, the significance of the relationship ($p = 0.025$) cannot be ignored, suggesting that even small shifts in consumer attitudes might influence perceptions of E-payment services, albeit slightly. This weak correlation underscores the complexity of factors influencing consumer perceptions of E-payment services, hinting that other unexamined variables may play a more substantial role. The minimal explanatory power (Adjusted R Square = 0.010) further suggests that consumer attitudes alone do not significantly dictate the perceived attributes of E-payment services, inviting a broader exploration into additional factors such as security concerns, ease of use, and the influence of social norms. Moreover, the significant regression model ($F = 5.081$, $p = 0.025$) confirms that while the impact of consumer attitudes on E-payment attributes is small, it is statistically significant, implying a real effect that could have practical implications for Fintech companies. These businesses may need to consider not just the technical and functional aspects of their E-payment solutions but also how subtle shifts in consumer attitudes could affect the adoption and perception of these services.

The implications derived from this study provide valuable insights into the practical applications and potential impacts of the research findings on various stakeholders and aspects concerning consumer attitudes, and perceptions with the adoption of E-payment solutions, which are discussed under the following two categories:

8. Theoretical implications

The findings relate to TAM by emphasizing that perceived usefulness (convenience, accessibility) and perceived ease of use (trust, security) are crucial for consumer adoption of E-payment services. Fintech companies can leverage these frameworks to improve user interfaces, simplify processes and highlight the benefits of their services to expand the adoption rates. Theoretical perspectives like the Trust-Commitment Theory emphasize that building trust in service providers, ensuring system security and safeguarding data privacy are essential for fostering positive consumer attitudes. The study also underscores the importance of user-centric product development and personalized marketing strategies. This approach can lead to higher user satisfaction and sustained engagement with the services. Theoretical perspectives related to Economic Development and Technological Innovation suggest that

expanding access to E-payment services can empower underserved populations and stimulate economic participation.

9. Practical implications

The practical implications concluded that addressing consumer concerns about security, privacy and usability through tailored marketing can build trust and promote the adoption of E-payment services. Tracking changes in consumer perceptions over time due to technological advancements and shifting expectations helps in continuously adapting strategies to meet evolving consumer preferences. By overcoming the barriers to adoption such as accessibility and trust issues, Fintech companies can promote broader financial inclusion and contribute to the growth of the digital economy. It underscores the importance of designing E-payment services that prioritize user needs like convenience, accessibility, trust, and security, thereby enhancing user experience and engagement.

10. Recommendations and future direction

The study recommends that FinTech companies focus on improving accessibility, cost-effectiveness, and risk management of E-payment services to enhance consumer satisfaction. It suggests the development of user-friendly interfaces, personalized marketing strategies, and targeted awareness campaigns to address security, privacy, and usability concerns. By doing so, companies can increase user engagement and adoption of E-payment solutions, which will promote financial inclusion and drive the growth of the digital economy.

Future research can be performed over the exploration of those factors that influence trust and security concerns like fraudulent protection measures, perceived reliability of the service, user experience, intuitive design and responsiveness impact user satisfaction and adoption rates. Comparisons among consumer perceptual attitudes towards E-payment services in different cultural and geographical areas. Fintech innovations like blockchain technology, mobile wallets and biometric authentication can also be explored. Evaluation of the adherence to regulations affects consumer perceptions of security and reliability. Analyzing the barriers to adopt and strategise for enhancing accessibility for diverse consumer segments. Utilizing predictive analytics and machine learning techniques to forecast consumer trends and preferences in the realm of payment services.

The study encountered several limitations, including a lack of adequate time and efficient resource utilization. Conducting a more detailed case study and incorporating observational methods could yield better insights. Additionally, the data was exclusively collected from Lucknow, UP, which may limit the applicability of the results.

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