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FACTORS AFFECTING THE ACCEPTANCE OF SELF-SERVICE TECHNOLOGIES IN THE INDIAN BANKING SECTOR

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Abstract *India has witnessed a surge in the acceptance of Self-Service Technologies (SSTs) in the banking sector, driven by events such as the 2014 demonetisation and the global COVID-19 pandemic, as well as government encouragement. This study delves into the determinants shaping the acceptance of SSTs in the Indian banking landscape. Utilising the Technology Acceptance Model (TAM) as a foundation, the theoretical model encompasses perceived ease of use, perceived usefulness, perceived self-efficacy, perceived risk, and perceived social influence as independent variables. The dependent variable under scrutiny is customers' behavioural intention towards SSTs in banking in rural India. Employing SEM using Smart PLS4, the study analyses data from 320 rural banking customers in India. The results highlight the significant impact of perceived ease of use and perceived usefulness on customers' behavioural intention towards SSTs in banking. However, the study does not find support for the moderating effects of gender and marital status on customers' behavioural intention towards SSTs in banking. Further exploration of path coefficient variances demonstrated that the impact of perceived ease of use and perceived usefulness on customers' behavioural intention towards SSTs in banking was more pronounced among males and married people. The insights garnered from this study offer valuable implications for financial institutions, consumers, businesses, and researchers aiming to promote SSTs in the Indian banking system.*

Keywords: *Self-Service Technology, Technology Acceptance Model, Behavioural Intention, Structural Equation Modelling, Banking*

INTRODUCTION

Self-service technologies (SSTs) are defined as "technological interfaces that enable users to avail services without direct employee intervention" (Meuter et al., 2000). These high-tech, low-touch options have become integral in reshaping traditional banking services, with categories such as Automated Teller Machines (ATMs), electronic cash transfers, internet banking, e-wallet, and unified payment interface (UPI), playing pivotal roles in service delivery (Curran et al., 2003; Fahad & Shahid, 2022; McPhail & Fogarty, 2004; Meuter et al., 2000). Customers may now perform transactions around the clock at their convenience thanks to SSTs (Sum Chau & Ngai, 2010). SST is a win-win for banks and customers. While banks have attained high efficiency, reduced cost, and higher profitability, customers have become less reliant on employees to operate their accounts and perform transactions (Montazemi & Qahri-Saremi, 2015; Rawashdeh, 2015; Saxena et al., 2016). The advancements in technology have enabled banks to provide better customer services, which ultimately impact customers to use such technologies (YuSheng & Ibrahim, 2019).

Factors influencing customers' behavioural intention towards online banking in India have been a subject of interest in recent research. Research has explored factors influencing SST acceptance, revealing that consumers who perceive technology as a superior, user-friendly, and enjoyable service alternative are more likely to embrace it (Changati & Kansal, 2019; Dabholkar & Bagozzi, 2002; Weijters et al., 2007). Studies have highlighted various factors impacting the adoption of online banking services among Indian customers. Trust, perceived ease of use, perceived usefulness, and convenience have been identified as significant factors influencing customers' behavioural intention toward online banking (Hossain et al., 2020; Pahuja & Virk, 2012; Yoon & Barker Steege, 2013). Furthermore, demographic factors, technological anxiety, and the desire for less personnel interaction impact SST acceptance (Curran et al., 2003; Montazemi & Qahri-Saremi, 2015).

Prior studies on the adoption of SSTs have mostly looked at developed economies, with limited studies specifically exploring developing economies like India (Chaouali et al., 2016; R. F. Malaquias & Hwang, 2016). Existing studies in

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India are often conducted in metropolitan cities, potentially overlooking the unique cultural and socio-economic factors that shape technology acceptance in rural India. Despite the benefits of SST, the acceptance of SSTs is still low, especially in the rural parts of India wherein it is most needed.

This study aims to bridge a knowledge gap by examining the factors that drive customer acceptance of SSTs within the rural Indian banking sector, along with the influence of demographic characteristics. The focus will be on two key banking SSTs: ATMs and internet banking.

The insights derived from this study aim to assist financial institutions in crafting effective marketing strategies to enhance SST acceptance in banking in rural India. Widespread SST adoption in rural areas can empower individuals with convenient access to financial services, fostering financial inclusion and economic development.

The document's forthcoming sections are arranged as follows: In Section 2, the conceptual model is produced composed with research hypotheses. The methodology and development of the measuring instruments are described in depth in Section 3. The study's findings are emphasised in Section 4. Subsequently, Section 5 presents the discussion. Section 6 deals with implications and Section 7 tackles constraints and proposes avenues for future investigation. Lastly, Section 7 provides the conclusion.

THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Previous research in various contexts has explored customer acceptance of SSTs in banking, employing diverse behavioural models (Alalwan et al., 2018; Kaur & Kaur, 2021; Martins et al., 2014; Shankar et al., 2020). Studies like Martins et al. (2014) identified key factors influencing Internet banking adoption: anticipated benefits, perceived effort, and social influence. Additionally, Riffai et al. (2012) found factors like enjoyment and website design impacting user intentions in Oman. Al-Somali et al. (2009a) and Chiou & Shen (2012) highlighted the crucial role of perceived ease of use in shaping both positive attitudes and perceived usefulness towards Internet banking. Similar research on mobile banking suggests the importance of convenience, security, self-confidence, and social influence (Arora & Kaur, 2018; Giovanis et al., 2019; Koksal, 2016; Tran & Corner, 2016; Zhang et al., 2018). Drawing upon the Technology Acceptance Model (TAM) as a foundation, Davis et al. (1989) focus on understanding SST adoption in the banking sector. TAM suggests that perceived usefulness and perceived ease of use are core factors influencing user intention.

Building upon TAM's foundation, this study incorporates additional constructs:

- *Perceived Self-Efficacy:* Reflects individuals' confidence in using SSTs effectively (Venkatesh & Davis, 2000).
- *Perceived Social Influence:* Captures the extent to which individuals believe their social circle expects them to use SSTs (Venkatesh et al., 2003).
- *Perceived Risk:* Considers the potential negative consequences associated with using SSTs, such as security concerns (Walker et al., 2002).

Furthermore, this study investigates the potential influence of demographic factors like gender and marital status on the relationships between these constructs and user intentions. Fig. 1 visually depicts the extended TAM framework utilised in this research.

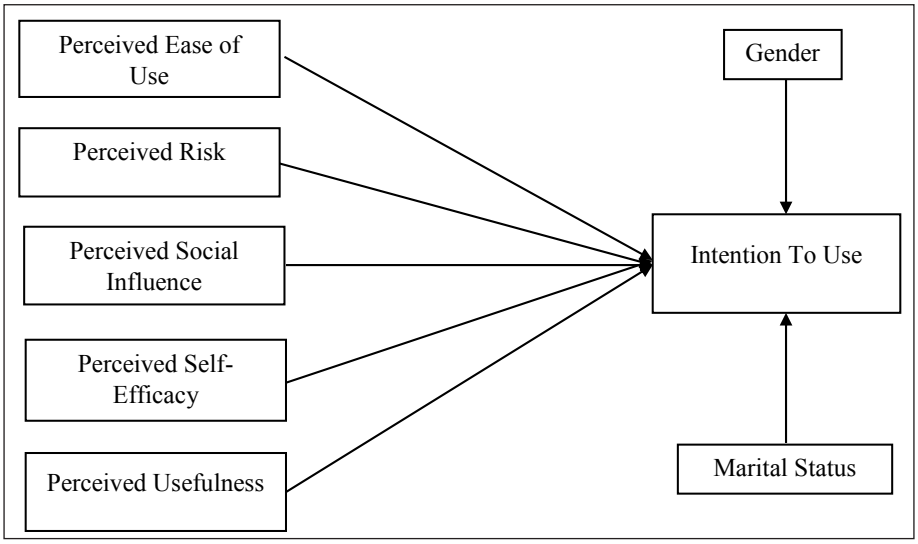

Fig. 1: Proposed Theoretical Model

Behavioural Intentions and Potential Determinants of SSTs Usage in Banking

This section explores the concept of behavioural intentions and investigates potential factors influencing customers' willingness to accept SSTs in banking. Behavioural intentions represent individuals' interest and likelihood to engage in a specific behaviour, acting as a bridge between attitudes and actual behaviour (Fishbein, 1975).

Perceived Ease of Use

As highlighted by Koenig-Lewis et al. (2010), individuals with higher levels of computer literacy tend to adapt to new technologies quickly and experience fewer difficulties. Building upon Davis et al. (1989) work on the cognitive trade-off process, where individuals weigh the effort required against the perceived benefits of technology, this study proposes that perceived ease of use can positively influence users' intentions to utilise SSTs. This is further supported by empirical evidence in Internet banking research (Al-Somali et al., 2009b; Cheng et al., 2006). Following this line of research, the following hypotheses is put forth: *H1: Customers' intention to utilise SSTs in banking is positively impacted by their perception of ease of use*.

Perceived Risk

Perceived risk refers to the uncertainty people experience regarding potential negative consequences associated with a particular service (Bauer & Cox, 1967). As noted by Peter and Ryan (1976), the anticipation of potential losses can act as a barrier to adopting new behaviours. Studies have shown that customers often perceive online transactions, especially those involving money, as inherently risky (Hoffman et al., 1999; Jarvenpaa et al., 2006). This risk perception has been recognised as a reason hindering the acceptance of electronic services, particularly in the financial sector (Koller, 1988; Pavlou & Pavlou, 2001).

Following this line of research, the following hypotheses is put forth:

H2: Customers' intention to utilise SSTs in banking is positively impacted by their perception of risk.

Perceived Social Influence (PSI)

Individuals are susceptible to social influence from their social networks, including family, friends, peers, and superiors in banking (López-Nicolás et al., 2008). According to Venkatesh et al. (2003), social influence is the degree to which people think that other people anticipate them using a new technology. This construct has been established as a significant predictor of behavioural intentions (Chong et al., 2012; Venkatesh et al., 2012). Additional research indicates that consumers can have a significant impact on raising awareness and influencing others' plans to use technology (Alalwan et al., 2015, 2016). Research by Kim et al. (2011) demonstrates that social influence is a key driver of individuals' adoption of Internet banking.

Following this line of research, the following hypotheses is put forth:

H3: Customers' intention to utilise SSTs in banking is positively impacted by their perception of social influence.

Perceived Self-Efficacy

TAM suggests that self-efficacy and perceived ease of use are related (Venkatesh & Davis, 1996). When individuals have prior experience with technology, their confidence in their technological abilities contributes to their perception of ease of use for new technologies. According to studies, usage intention and behaviour of SSTs are directly impacted by perceived self-efficacy (Meuter et al., 2005). Hence the following hypotheses is put forth:

H4: Customers' intention to utilise SSTs in banking is positively impacted by their perception of self-efficacy.

Perceived Usefulness

Perceived usefulness refers to the benefits and advantages, like convenience, customisation, accessibility, efficiency, and time-saving benefits, individuals expect to gain from using innovative channels like SSTs (Venkatesh et al., 2003). People who believe benefits of technology are more likely to adopt it for banking activities (Baptista & Oliveira, 2015). Numerous studies have established perceived usefulness as a key factor influencing individuals' decisions to adopt information systems and technologies (Dwivedi et al., 2019; Rana et al., 2017), particularly in the context of Internet banking (Abushanab et al., 2010).

Hence the following hypotheses is put forth:

H5: Customers' intention to utilise SSTs in banking is positively impacted by their perception of usefulness.

Demographics Characteristics

Safeena et al. (2014) concluded that the TAM model was impacted by demographic factors such as gender and age, as well as perceived benefits and social influence. Al-Somali

et al. (2009a) state that education has a significant impact on Saudi Arabians' perceptions of the usage of Internet banking. The moderating role of gender in the relationship between mobile banking attitude and convenience of use was highlighted by Chawla and Joshi (2018). The favourable correlation between trust and attitude towards mobile banking is, however, moderated by age. Drawing on extant literature, the next conjectures are put forth:

H6: Customers' inclination to employ SSTs in banking is significantly correlated with their gender.

H7: Customers' inclination to employ SSTs in banking is significantly correlated with their marital status.

RESEARCH METHODS

The primary objective of this study was to discern factors influencing customer acceptance of SSTs in the banking sector in rural India and explore how demographic characteristics influence this relationship. To achieve this, a research model was devised based on existing literature and subsequently assessed using data collected through a survey questionnaire. The following outlines the research methods employed.

Measures and Questionnaire Development

The study incorporates six constructs and their respective items, drawing from prior studies. The number of items per construct is 3, resulting in an instrument comprising 18 items, excluding demographic questions. The scales, developed by (Venkatesh et al., 2012), were used to measure perceived usefulness, perceived ease of use, perceived social influence, and Behavioural intention. Three items used to measure perceived risk were borrowed from (Slade et al., 2015). Perceived self-efficacy was measured using 3 items from (Venkatesh & Davis, 2000). A five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") was used to record the responses from the respondents.

Sample and Data Collection

The participants were randomly selected from individuals visiting banks situated in convenient locations across rural areas of North India. The study aimed for a minimum of 320 respondents to answer questions related to the two most widely used SSTs, i.e., ATMs and online banking, a goal that was successfully attained. Each respondent was briefly informed about the context of the study and the relevance of their opinion before filling out the questionnaire. Most responses were obtained from western Uttar Pradesh in India, with approximately 54 percent of respondents being adult students, chosen for their accessibility and targeting feasibility.

Data Analysis

This section describes the statistical methods used to analyse the data. We used a variant of Structural Equation Modelling (SEM) called Partial Least Squares path modelling (PLS-PM) to assess our research model (Ringle, 2005). This software, specifically SmartPLS 4.0, was chosen because PLS-PM is well-suited for analysing complex models with many variables, even with a moderate sample size (Hair et al., 2011). Additionally, PLS-PM is less sensitive to certain data assumptions than other SEM methods, making it a good choice for our study.

RESULTS

The survey data underwent analysis using SmartPLS version 4. Confirmatory factor analysis (CFA) was employed to assess convergent and discriminant validity, as well as reliability. Subsequently, a partial least square approach within SEM was utilised to evaluate the proposed hypotheses, and a multigroup analysis was conducted to examine the moderating effects of gender and marital status.

Measurement Model Analysis

The examination of the measurement model serves to uncover the relationship between observed or measured variables and latent variables within a specified investigation (Hair et al., 2019). This study gathered various measuring items with numerical values from the study's respondents to assess latent variables. Subsequently, the reliability and validity of these items are evaluated. The proposed model was tested using SmartPLS version 4.0 and the partial least square structural equation modelling (PLS-SEM) technique (Sarstedt et al., 2022).

Convergent Validity and Reliability

The outcomes of the measurement model analysis are presented in Table 1. To establish construct reliability, Cronbach's alpha (CA) scores above 0.70 and composite reliability (CR) values exceeding 0.70 were utilised (Hair et al., 2019). Construct reliability was affirmed as all latent constructs exhibited Cronbach's alpha values and CR values surpassing 0.70. Subsequently, for convergent validity, factor loading (FL) values surpassing 0.708, and average variance

extracted (AVE) values exceeding 0.50 were employed (Hair et al., 2019).

The analysis confirmed construct reliability, with all latent constructs having Cronbach's alpha values and CR values exceeding 0.70. Factor loading values, all-surpassing 0.70, were deemed acceptable. Additionally, the AVE values, exceeding 0.50, indicated that each latent construct accounted for 50% or more of the variance in the observable variables, on average. These results affirmed the convergent validity of the measurement model.

Table 1: Results of Measurement Model Analysis

Latent Construct	Measured Variable	Standardised Factor Loading (CFA)	Cronbach's Alpha >0.70	Composite Reliability >0.70	AVE >0.50
Perceived ease of use	Item1	0.950	0.924	0.952	0.868
	Item2	0.914			
	Item3	0.931			
Perceived usefulness	Item13	0.870	0.830	0.898	0.745
	Item14	0.886			
	Item15	0.833			
Perceived self-efficacy	Item10	0.983	0.981	0.987	0.963
	Item11	0.979			
	Item12	0.983			
Perceived risk	Item4	0.988	0.908	0.943	0.846
	Item5	0.892			
	Item6	0.875			
Perceived social influence	Item7	0.969	0.870	0.913	0.781
	Item8	0.745			
	Item9	0.921			
Behavioural intention	BI1	0.914	0.804	0.883	0.718
	BI2	0.893			
	BI3	0.723			

Discriminant Validity

Discriminant validity ensures the distinctiveness of each latent variable from others. The Fornell and Larcker (1981) criterion was employed, comparing the correlation coefficients of the constructs with the corresponding square root of AVE values. As depicted in Table 2, all square roots of AVE values (diagonal elements in bold) surpassed the inter-construct correlation coefficients (off-diagonal elements).

The Heterotrait-Monotrait Ratio (HTMT), measuring real correlations across components, was employed as a discriminant validity measure in the PLS-SEM approach (Hair et al., 2019). Discriminant validity was established when the HTMT value was below 0.9 study (Ali et al., 2016; Voorhees et al., 2016). These results indicated that each latent construct was distinctive, affirming the presence of discriminant validity (Table 3).

Table 2: Results of Discriminant Validity - Fornell-Larcker Criterion

Latent Variables	Behavioural Intention	Perceived Ease of Use	Perceived Risk	Perceived Self-Efficacy	Perceived Social Influence	Perceived Usefulness
Behavioural Intention	0.848					
Perceived ease of use	0.708	**0.932**				
Perceived risk	-0.439	-0.576	**0.920**			
Perceived self-efficacy	0.147	0.185	-0.053	**0.981**		
Perceived social influence	-0.079	-0.086	0.205	-0.009	**0.884**	
Perceived usefulness	0.722	0.882	-0.519	0.196	-0.083	**0.863**

Table 3: Results of Discriminant Validity - Heterotrait-Monotrait Ratio (HTMT)

Latent Variables	Behavioural Intention	Perceived Ease of Use	Perceived Risk	Perceived Self-Efficacy	Perceived Social Influence	Perceived Usefulness
Behavioural Intention						
Perceived ease of use	0.801					
Perceived risk	0.485	0.628				
Perceived self-efficacy	0.165	0.187	0.051			
Perceived social influence	0.115	0.100	0.239	0.019		
Perceived usefulness	0.854	0.884	0.599	0.208	0.111	

Analysis of the Structural Model and Hypothesis Testing

The evaluation of the structural model becomes pertinent once the integrity of the entire measurement model has been established (Hair et al., 2019). This analysis is crucial for hypothesis verification, determining whether the stated hypotheses, indicating the relevance of relationships, are accepted or rejected (Byrne, 2013). In this study, a bootstrapping approach was employed with a subsample of 1000 for estimating the structural model (Sarstedt et al., 2022). The path coefficients (beta), t statistics, and corresponding p-values are presented below. A statistically significant t-value in two-tailed testing lies outside the range of -1.96 and +1.96, with a p-value less than 0.05 (Byrne, 2013). The results of the structural model analysis are detailed in Table 4.

Byrne (2013) recommends that the Normed Fit Index (NFI) should exceed 0.90, and the Standardised Root Mean Square Residual (SRMR) should be below 0.09 for model fit. The PLS analysis in this study produced SRMR (0.059) and NFI (0.92), meeting the suggested criteria. However, it's crucial to note that certain model fit metrics such as $\chi 2$, GFI, CFI, and RMSEA, not considered by PLS-SEM, were not taken into account (Hair et al., 2019).

The findings indicate that both perceived usefulness (β = 0.435, t = 3.418) and perceived ease of use (β = 0.301, t = 2.530) significantly and positively influence the customers' behavioural intention towards SSTs banking at $p < 0.01$ and $p < 0.05$, respectively. Conversely, the influences of perceived risk (β = 0.038, t = 0.501), perceived social influence (β = 0.010, t = 0.158), and perceived self-efficacy (β = 0.004, t = 0.069) were found to be statistically insignificant. Thus, hypotheses H1 and H5 were supported.

Table 4: Results of Structural Model Analysis

Hypothesis	Paths	Beta	T Statistics	P Values	Results
H1	Perceived ease of Use -> Behavioural Intention	0.301	2.530	0.012*	Significant
H2	Perceived risk -> Behavioural Intention	-0.038	0.501	0.617	Insignificant
H3	Perceived social Influence -> Behavioural Intention	-0.010	0.158	0.874	Insignificant
H4	Perceived self-efficacy -> Behavioural Intention	0.004	0.069	0.945	Insignificant
H5	Perceived usefulness -> Behavioural Intention	0.435	3.418	0.001**	Significant

Note: **p<0.01, *p<0.05, based on a two-tailed test; t =1.96.

Multi-Group Analysis

A structural equation modelling-based multigroup analysis was conducted to examine the moderating effects of gender and marital status. The results indicated that all observed differences were statistically insignificant. Further exploration of path coefficient variances demonstrated that the impact of perceived ease of use and perceived usefulness on customers' behavioural intention towards SSTs in banking was more pronounced among males compared to females. Additionally, the variations in path coefficients indicated that the influence of perceived ease of use, and perceived usefulness on customers' behavioural intention towards SSTs in banking was more robust among married individuals compared to unmarried ones. The summarised outcomes of the multi-group analysis are presented in Tables 5 and 6.

Table 5: Multi-Group Analysis Based on Gender

Relationships	Difference (Male - Female)	P Value	Results
Perceived ease of Use -> Behavioural Intention	0.361	0.151	Insignificant
Perceived usefulness -> Behavioural Intention	-0.042	0.877	Insignificant

Table 6: Multi-Group Analysis Based on Marital Status

Relationships	Difference (Married - Unmarried)	P Value	Results
Perceived ease of Use -> Behavioural Intention	0.151	0.517	Insignificant
Perceived usefulness -> Behavioural Intention	0.207	0.423	Insignificant

DISCUSSION

This study makes a valuable contribution to the existing body of literature on SSTs by empirically verifying the importance of various factors influencing the adoption of SSTs in the rural banking sector. Although various researchers have investigated the factors influencing the adoption of SSTs, a notable gap was identified in terms of research explicitly focusing on the rural banking sector. By addressing this research gap, the study offers critical insights into the significance and relevance of technology adoption factors in adopting SSTs among rural banking customers. The findings advance the understanding of SSTs and shed light on the unique nuances in the rural sector.

A conceptual model, grounded in existing literature, was formulated and subsequently validated with empirical data using PLS-SEM. Moreover, the study sought to explore the potential moderating impact of demographic characteristics, such as gender and marital status, on the connection between factors influencing the acceptance of online banking and customers' intent to use it. A conceptual model, incorporating these moderating variables, was developed, and hypotheses regarding the relationships among factors influencing SSTs acceptance and intention to use were formulated and tested. This research assessed the model's ability to predict customers' behavioural intention towards SSTs in banking by examining their explained variance (R-squared) (Chin, 2010). The model's R-squared is 54.5%. It means that these factors can explain 54.5% of the variance in customers' behavioural intention towards SSTs in banking. The R-squared value surpasses the recommended minimum of 40%, suggesting the model can adequately explain the endogenous constructs and possesses a moderate predictive capacity (Straub & Gefen, 2004).

The study's findings support a positive relationship between perceived usefulness and customers' behavioural intention towards SSTs in banking. This implies that individuals are more likely to adopt the SSTs if they perceive them as offering benefits and utilities (Dwivedi et al., 2019; Venkatesh et al., 2012).

Furthermore, the study found a significant influence of perceived ease of use on customers' behavioural intention towards SSTs in banking, consistent with prior studies on the adoption of innovative technologies (Alalwan et al., 2016; Al-Somali et al., 2009a). As users engage in a cost-benefit analysis between the anticipated advantages and the effort required to utilise the technology, a system perceived as easy to use increases the likelihood of adoption use (Alalwan et al., 2018; Çelik, 2008). This is because, when the perceived benefits outweigh the effort involved, users are more likely to embrace the new technology. Interestingly, perceived risk, perceived social influence, and perceived self-efficacy, despite being recognised as influential factors in SST adoption, did not significantly influence SSTs intention in our study. These discrepancies may originate from the unique perspectives of rural populations in evaluating technologies. Concerning the moderating influence of demographics, the outcomes did not substantiate the moderating effect of gender and marital status on the association between factors influencing SSTs acceptance and the intention to use. However, variations in path coefficients unveiled that the influence of perceived ease of use and perceived usefulness on the intent to use SSTs was more prominent among males compared to females and married individuals compared to unmarried ones.

STUDY IMPLICATIONS

This research offers valuable insights for both academics and banking professionals. It can help them to explain, predict, and develop strategies to encourage wider adoption of SSTs in rural areas.

Implications for Theory

This study builds on the existing TAM by applying it to the specific context of rural Indian bank customers and their use

of SSTs. Previous research suggests that adding relevant factors from other models can improve TAM's explanatory power (Baabdullah et al., 2019; Khasawneh AI, 2015; Koksal, 2016). This study provides empirical evidence that including social influence, self-efficacy, and perceived risk strengthens TAM's ability to explain user behaviour towards SSTs in banking. Many studies have explored online and mobile banking adoption, but few have focused specifically on how rural Indian customers perceive and use a broader range of SSTs in banking. This research helps fill this gap in knowledge.

Implications to Practice

This study imparts valuable insights for service providers, affirming the multifaceted nature of factors influencing the acceptance of SSTs in banking, with certain factors deemed significant in the earlier studies seeming to have less influence in the context of the rural banking sector. These results are interesting in the sense that they question our basic assumptions regarding the factors influencing SST adoption in the banking sector, which are immune to geographical differences.

Notably, SSTs characterised by utility, thoughtful design, and user-friendliness garner wider acceptance among service consumers (Meuter et al., 2000; Yen, 2005).

The results highlight the importance of usefulness and ease of use as primary determinants of SST acceptance among rural banking customers. In this regard, banks may initiate targeted marketing communication campaigns for rural populations to highlight the usefulness of SSTs in terms of cost and time savings and overall convenience for customers. Further, ensuring necessary policies are developed and implemented to reduce the customers' cognitive load while interacting with the SSTs through a customer-centric interface. Given the technical and marketing communications aspects of this challenge, collaborative efforts among customer service, IT, product development, and marketing communications departments are essential.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Like any empirical research, our study faces several limitations. Firstly, we have ventured into a relatively novel research area concerning consumers' adoption of SSTs in rural banking areas, explaining approximately 54.5 percent of the variance in attitude toward SSTs through the constructs included in our study. Nonetheless, it is imperative to explore the other key factors contributing to the remaining unexplained variance. Future research should delve into identifying and comprehending additional factors influencing consumers' attitudes and adoption of SSTs in rural banking areas.

Secondly, the predominant focus of many studies has been on understanding consumer behaviour toward specific SSTs, unravelling the reasons behind the adoption of a particular SST. While comprehending the factors influencing the choice of one SST over another is crucial, it becomes even more pivotal from a firm's perspective, given the varying implementation costs across SSTs. Given the varying costs of implementation across different SSTs, future research could undertake a comparative analysis to investigate why consumers opt for one SST over another. Understanding the key variables influencing these decisions can be valuable for firms.

Additionally, our findings and their implications were derived from a cross-sectional study. This methodology limitation reduces the capacity to capture temporal changes in the research constructs (Malaquias et al., 2018). A longitudinal study is imperative to elucidate the effects of temporal changes and provide a more nuanced understanding of consumer behaviour toward SSTs in banking.

CONCLUSION

This research investigates factors influencing customers' behavioural intention towards SSTs in banking in a developing country context, specifically India. It expands the TAM by incorporating perceived risk, perceived self-efficacy, and perceived social risk. Despite India boasting a large internet user base, SST adoption remains nascent in rural regions. By surveying 320 participants in the northern part of the country, the study proposes a conceptual model explaining 54.5% of the variance within the extended TAM framework. The findings reveal that perceived ease of use and perceived usefulness positively influence customers' intention to adopt SSTs. Additionally, the study did not find evidence of gender or marital status moderating the relationship between the investigated factors and the intention to use SSTs.

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