Understanding students’ switching intentions from cash payment to mobile payment in education sector

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Abstract

Purpose – The study intends to evaluate students’ intention to shift from cash payment to mobile payment system for academic fee payments through push, pull and mooring framework. Push factors comprise risk and service-related factors, pull factors consist of subjective and aspect-based factors and mooring factors include cost and cognitive factors.

Design/methodology/approach – Sample of the study consists of around 296 undergraduate and postgraduate students from different higher educational institutions located in India. The questionnaire for data collection comprises 21 Likert scale-based items distributed among seven constructs. Partial least square structural equation modeling is used to identify the significant factors influencing students’ intentions.

Findings – Five of the factors, namely, risk, service, subjective, aspect and cognitive significantly influence student’s intention to switch to mobile payment system for academic fee payments. Moderation analysis indicates that the impact of the push and pull factors on switching intention towards mobile payments has a more positive influence among male students.

Originality/value – This study is probably the only study that tested the specific push, pull and mooring factors influencing intention to switch to mobile payment from cash payment in the Indian education system based on the incentive, Fogg behavior and status quo bias theory for academic fee payment.

Keywords Education sector, Mobile payment, Switching intention, Push-pull-mooring framework, Incentive theory of motivation, Fogg behavior model, Status quo bias theory, Empirical method

Paper type Research paper

1. Introduction

In recent years, there has been a surge in the number of students enrolling in higher educational institutions such as universities, colleges, and various professional schools all over the world (Nikou et al., 2023). According to the report by the All-India Survey on Higher Education, enrollment in higher education increased to around 4.14 crores in the year 2021–2022 which is about 7.5% rise from 2019–20 and 21% from 2014–15 (AISHE, 2023). The increasing number of students studying in higher education institutions has put the education sector under pressure to provide not only advanced learning but also advancements in various resource capabilities and services (Haleem et al., 2022). One such essential service required by the students frequently in the education sector is the academic fee payment system. Traditionally, in the institutions, students pay their fees in the mode of cash at the counter. This leads to long queues, loss of time and energy, error in fee calculation/
collection, manual records, and many more (Bianchi et al., 2023). As a result, universities and other higher educational institutes are working to enhance the students’ academic fee payment systems (Rani et al., 2023).

Several institutions in various countries have implemented significant changes to their policies, rules and regulations and systems, especially during the era of Covid-19 pandemic to provide seamless service to students (Raman and Aashish, 2023). Given the important role of the education sector, higher education institutions must implement plans and initiatives to develop advancements in the academic fee payment systems during students’ admissions and thereafter. For instance, in India, adoption of digital payment financial technology (FinTech) service by generation Y and Z users have increased tremendously (Srivastava et al., 2024). In fact, preferences towards mobile payments through quick response (QR) code scanning and unified payments interface (UPI) using mobile payment apps such as Paytm, PhonePe, Google Pay, and more, have increased exponentially (Kirmani et al., 2023). The global mobile payment market size reached about US$ 2,276.0 billion in the year 2023. Research has indicated that the decision to shift from cash payment to cashless payments is dilemmatic due to tradeoffs between unpredictable costs in cashless payments such as switching costs and sunk costs verses benefits (Hsieh, 2021).

The current study aims to better understand the factors affecting students’ intentions to switch from cash to mobile payments for academic fee. While previous studies have mainly focused on the digital payment platforms and capabilities in the e-commerce, healthcare, hospitality, and tourism sectors (Hameed et al., 2023), there is a scarcity of research in the education sector, especially in the developing countries like India. India is recognized as one of the largest higher education systems in the world that stands second in terms of the higher education network (Study in India, 2023). Despite India’s attempts in providing modern facilities in the education sector, there is little knowledge about the difficulties that students encounter during their academic fee payments (Raman and Aashish, 2021). This research fills the gap in the literature by examining the push, pull and mooring factors that students of higher educational institutions consider while making their decision to shift from cash to mobile payment for academic fee. The research questions to address the identified research issues are:

RQ1. What factors play significant role for students when intending to switch from cash to mobile payment while paying academic fee in the higher education institutions of India?

RQ2. Does gender of the students exert any significant impact on their switching intention towards mobile payment?

To investigate the research questions, a conceptual model was developed utilizing specific push, pull, and mooring factors from the incentive theory of motivation (Skinner, 1938), Fogg behavior model (Fogg, 2009), and status quo bias theory (Zeckhauser and Samuelson, 1988), respectively.

The contributions of this study are manifold. First, by utilizing the push, pull and mooring factors this study reveals a novel perspective in the field of students’ intentions to switch to mobile payments and extend the literature. Second, factors such as students’ subjective factors and aspect related factors act as a pull towards mobile payment for academic fee payment. Simultaneously, the risks related to cash payment and the cash payment service are viewed as push factors, thus influencing students’ intentions to change from cash payment. Further, the factors related to cost and cognitive are viewed as mooring factors which have negative influence on students’ intents to shift from cash to mobile payment. By considering such multifaceted nature of push, pull and mooring factors from switching intention perspective, this study provides new directions for understanding the choices of students for higher education institutions fee payment system.
Third, demographic factor like gender acts as a moderator in understanding the switching intentions. Gender variance exists between male and female students due to the biological, behavioral, cognitive, and social issues (Hossain, 2019). This study takes this into account and highlights the role of gender of students while analyzing their intention towards switching from cash to mobile payment.

Finally, this study is conducted in India which is recognized as one of the largest networks of higher education institutions in the world and is currently making significant progress in its digital transformation journey.

2. Theoretical background and hypothesis development

2.1 Theoretical underpinning

The current research study is based on three theoretical approaches, viz., incentive theory of motivation, Fogg behavior model and status quo bias theory. First, according to the incentive theory of motivation, people are motivated by incentives where people’s behavior changes when they believe that the action will result in reward or avoid the same which might entail punishment (Skinner, 1938). According to Hameed et al. (2023), the incentive theory helps to recognize what might be motivating people to act in a certain way or engage in specific behaviors. More specifically, incentive theory proposes that people are pushed away from actions that lead to negative consequences (Zhang et al., 2023). For instance, there are many challenges or risks related to cash payments (Chakraborty, 2023) and because of such risks, people satisfaction is drastically affected (Talwar et al., 2020). Due to these reasons, risk and service-related factors act as the push factors in switching intentions.

Second, we conceptualize the pull factors from the Fogg behavior model. The Fogg behavior model theorizes that change in behavior is triggered with sufficient motivation and ability (Fogg, 2009). In this model, motivation refers to the underlying drivers that get one to do action, which can be emotional (Mallawaarachchi et al., 2023). Ability in this model is less about skills and more about the capacity to carry out the behavior. Specifically, ability is influenced by time, money, physical effort, etc. Ackermann et al. (2018) and as a result, in the context of switching intentions towards mobile payments, motivation and ability can be considered (Van der Linden et al., 2020).

Finally, as mooring factors depict the psychological reasons that influence switching intentions (Kuo, 2020), the status quo bias theory is considered. The status quo bias theory argues that individuals have bias to a routine system rather than switching to a new system, even if the new system is potentially superior (Zeckhauser and Samuelsen, 1988). Users develop the status quo bias as they become acquainted and accustomed to the existing system, thus perceiving the cost of switching to another system to be higher than its potential benefits (Mamidala et al., 2023). Besides, users may need more time and effort to familiarize themselves with various mobile payment systems compared to cash payment, and thus may perceive losses as much larger than gain (Gong et al., 2020). Thus, through lens of status quo bias theory, cost and cognitive factors are considered to form the mooring effects.

2.2 Hypothesis development

2.2.1 Impact of push factors (risk and service-related factors) on switching intention. It is critical to understand the factors that influence students’ intentions to switch from cash to mobile payment (Jawad et al., 2022). Factors related to risks are believed to be a major psychological factor in one’s decisions regarding the choice of payment medium (Chakraborty, 2023). Previous studies have investigated the perceived risks while adopting any new system (Krishna et al., 2023). Specific to cash payment systems in higher education, students are found to be often worried about risks related to losing the cash, too much time taken in cash
handling, high waiting time, manual work errors, and mental stress (Bhuiyan et al., 2024). Grounded by the incentive theory, the availability of alternative systems may persuade a user to stop using the current one with higher risk factor and adopt new payment systems with comparatively lower risks. In this context of switching intention from existing cash payment, we have identified risk as a critical push factor that drives students away from the incumbent cash payment system toward an alternative like mobile payment system (Handarkho and Harjoseputro, 2020). The mobile payment platform can provide a complete information security protection mechanism (Jaiswal et al., 2023). Based on the above discussion, we posit that:

\[H1.\] Factors related to risks positively affect students’ switching intentions towards mobile payment for academic fee payment.

Besides, due to the risks involved in the cash payment system, the service quality is drastically affected (Talwar et al., 2020). In the context of mobile payment, Yi et al. (2024) have indicated that service is an important factor that influences a consumer’s decision to stick with the existing system or to switch to a new payment system. For example, the existing system of cash payment in the higher education sector with poor efficiency, high waiting time, and manual errors causes impatience, stress, and dissatisfaction among students (Haleem et al., 2022). Whereas mobile payment provides more convenient, flexible, safe, and efficient payment platform for the students (Jaiswal et al., 2023). Grounded in the incentive theory, a user can abandon the existing payment system with low service quality and adopt new payment systems with a comparatively higher service quality (Hijazi et al., 2023). In this context of switching intention from existing cash payment, we thus recognize service as an essential push factor. Thus, we put forth the subsequent hypothesis:

\[H2.\] Service-related factors positively influence students’ switching intentions towards mobile payment for academic fee payment.

### 2.2.2 Impact of pull factors (subjective and aspect-based factors) on switching intention.

The Fogg behavior model emphasizes strong direct impact of motivation on behavioral change to adopt new systems (Fogg, 2009). In the context of switching to mobile payments from cash, users believe that mobile payments are convenient and less time-taking. Such subjective factors linked to the use of mobile payment act as pull factor and may affect positively on ones’ switching intentions. Prior studies have investigated the relationship between consumers’ motivations and intentions in the context of mobile payment service usage (Hazarika et al., 2023). Accordingly, we argue that higher levels of such subjective factors or motivation may lead to switching of students’ intention towards mobile payment systems. Hence, we posit that:

\[H3.\] Subjective factors have a positive influence on students’ switching intentions towards mobile payment for academic fee payment.

Further, with reference to the Fogg behavior model, we highlight the ability as the aspect-based factors. For instance, in mobile payments, aspect-based factors include features like availability of transaction information, compatibility with other devices, flexibility in payment, security, etc. Laksamana et al. (2023). Such aspect-based factors act as a pull factor and may positively impact switching intentions. Ackermann et al. (2018) have found some ability factors that triggers consumers’ perceptions. Accordingly, we argue that higher levels of ability or aspect-based factors lead to rapid adoption of mobile payment systems. Consequently, we hypothesize that:

\[H4.\] Aspect based factors have a positive influence on students’ switching intentions towards mobile payment for academic fee payment.
2.2.3 Impact of mooring factors (cost and cognitive factors) on switching intention. Certain costs may be incurred while switching from an existing system to a new alternative system such as switching costs or sunk cost (Hsieh, 2021). Prior research indicates that costs may negatively influence the perceptions of a newly adopted alternative and thus potentially inhibit a user’s switching behavior (Hoang and Vu, 2020). This shows that users develop the status quo bias as they become acquainted and accustomed to the existing system, thus perceiving the cost of switching to another system to be higher than its potential benefits (Mamidala et al., 2023). In the context of mobile payments, costs incurred may include the unpredictable costs such as cost required for transition from cash to mobile payment system, or additional fees such as transaction fees, processing fees, monthly fees, etc. Faster Capital (2023). Thus, factors related to costs act as a mooring factor and may negatively affect one’s switching intentions. Based on the discussion, we posit that:

H5. Factors related to costs negatively influence students’ switching intentions towards mobile payment for academic fee payment.

According to the perspective of cognitive factor, Hsieh (2021) has claimed that individuals weigh losses heavier than gains in making decisions. This is the loss aversion principle from status quo bias theory where losses appear larger than they are Shirish and Batuekueno (2021). Cognitive factors imply that individuals tend to weigh potential losses as being greater than potential gains in making decisions (Li et al., 2021). With respect to mobile payments, cognitive factors refer to one’s perception of the time and effort already invested in the conventional system and required to familiarize themselves with the new systems. Such cognitive factors act as a mooring effect and may negatively impact one’s switching intentions. Based on the discussion, we posit that:

H6. Cognitive factors negatively affect students’ switching intentions towards mobile payment for academic fee payment.

2.2.4 Moderating effect of gender of students. Prior studies have observed the impact of gender in the adoption of various digital technologies. For instance, Jean Pierre and Mombeuil (2023) have explored the impact of gender in the merchant’s intention to accept peer-to-peer mobile payments. Yang et al. (2023) have examined the effects of mobile payment adoption on household online shopping expenditure and have found that mobile payment adoption significantly increases household online shopping expenditure for females, while it does not affect the males. Thus, extant evidence indicates that male and female differ in their opinions regarding the application of digital technologies and thus adoption of mobile payments is not gender neutral. Therefore, we posit:

H7a–f. The gender of students moderates the relationship between (a) risk, (b) service, (c) subjective, (d) aspect, (e) cost, and (f) cognitive factors and switching intentions of students towards mobile payment for academic fee payment.

A conceptual model considering all the factors and hypotheses are presented in Figure 1.

3. Research methodology
We used a research methodology based on an online survey using a questionnaire to gather data from students studying in higher educational institutions to assess the research hypotheses. We tested the hypotheses utilizing the partial least squares structural equation modeling (PLS-SEM) in SmartPLS version 4 software. Next, we discuss the measures, questionnaire development and data collection procedure for this study.
3.1 Measures and questionnaire development
As shown in the conceptual model (Figure 1) six independent factors that belonged to push, pull, and mooring factors and one dependent factor (Switching intention) was considered in this study. To measure the factors, items were adapted from the literature (Table S1, Supplementary File). About 18 items were identified and to measure them a 5-point Likert scale was used which ranged from strongly disagree (1) to strongly agree (5). Moreover, demographic data like age and gender were collected. For validation, a pilot study was executed. First, nine experts in the related domain (one marketing manager, three academicians, and five young research scholars) evaluated the questions. Based on their suggestions the questionnaire was modified. In the second phase, the revised questionnaire was sent to thirty-five undergraduate and postgraduate students. Based on their suggestions, the final questionnaire was prepared and distributed through Google forms to several undergraduate and postgraduate students studying in different higher educational institutes located in India.

3.2 Data collection
The survey data were collected over the period of three months (October to December 2021). For getting a high response, privacy guarantees for participants’ profiles were assured. The total number of questionnaires distributed was around 800, and about 304 responses were received. Among the collected responses, about eight responses were removed due to ambiguity. This resulted in a total of 296 responses which is around 37% response rate. It is acceptable as per the literature for performing the analyses (Saha et al., 2022).

4. Data analysis and results
From the final data set it was identified that among the 296 respondents, 63.2% were male and 36.8% were female students. Moreover, around 72.3% of the students belonged to the age group of 18–25 years, and about 27.7% belonged to the age group of 25–30 years.

4.1 Measurement model results
Using the SmartPLS 4.0 version measurement model analysis was performed and results were obtained (Table S2, Supplementary File). From Table S2, it can be observed that the factor loading value of each item is greater than the threshold value of 0.70 (Saha et al., 2022). Similarly, it can also be identified that the Cronbach’s alpha value for each construct is above the acceptable value of 0.5 (Hair et al., 2023) and the composite reliability value is higher than
the threshold value of 0.7 (Hair et al., 2023). Further, it can be observed that average variance extracted (AVE) values are also above the threshold value of 0.50 (Table S2) (Hair et al., 2023). These results confirm the reliability and validity of the items and their constructs.

Further, a discriminant validity test was performed (Table S3, Supplementary File). Test results indicate lower diagonal values (inter-construct correlation) compared to the square root of AVE. This ensures acceptable discriminant validity (Hair et al., 2023).

4.2 Structural model results
For testing the developed hypotheses, a structural model using PLS-SEM was developed and evaluated as shown in Figure 2. The result of the analysis is provided in Table S4. From the result it can be observed that hypotheses H1, H2, H3, H4, and H6 were supported while H5 was not. Further, the $R^2$ value of the factor switching intention, i.e. $R^2$ (SWI) = 0.701 indicates acceptable predictive accuracy of the model.

Additionally, we tested the moderating effects of gender of students (male and female students) on the association between push, pull, and mooring factors and switching intentions. Results of Table S4 (Supplementary File) indicate that hypotheses H7a, H7b, H7c, and H7d were supported while H7e and H7f were not supported. Further, a separate analysis was conducted for male and female students (Table S5A and S5B, supplementary file). From the result, it was observed that effect size of risk, service related and subjective factor with switching intention were higher in case of male students compared to female students. Moreover, the interaction graphs for the push and pull factors indicate that in case of both female and male students, the switching intention towards mobile payments was increasing with increase in the push and pull factors’ values (Figure S1a, b, and c).

5. Discussion
In this study, the push-pull-mooring framework is utilized to understand the key factors concerning students’ intentions to shift from cash to mobile payment particularly for

![Switching from cash payment to mobile payment](image)

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academic fee payment in higher educational institutions in India. Results indicate that the risks and service-related factors positively impact students’ intentions to switch to mobile payments. This aligns with the study by Raman and Aashish (2021) where it is suggested that perceived risk and service quality act as influencing antecedents of continuance intention to use digital payments. Results also show that subjective and aspect-based factors are significant. This aligns with the study by Hsieh (2021) where it is suggested that compatibility, perceived ease of use and relative advantage act as influencing antecedents of switching intention to use digital payments. Further, cognitive factors have a direct but negative influence on students’ intention towards mobile payment. This aligns with the study by Kuo (2020) where it is found that cognitive misconceptions are one of the main reasons leading to status quo inertia.

In addition, the findings of our study suggest that the factors related to costs are not significantly influencing students’ switching intentions towards mobile payments. This finding contradicts the results of prior study by Gong et al. (2020) where the factors related to costs negatively influence intentions to use mobile payments. A possible reason can be that the transaction fees on the mobile payment apps have low transaction fees (around 0.5–1.1%).

5.1 Implications for theory
Our research makes multiple theoretical advances. First, the present study looks at the factors influencing students’ switching intentions toward mobile payments from an empirical perspective, considering the push-pull-mooring framework. There is a lack of research in this field (Haleem et al., 2022). As a result, this study has contributed to our present understanding related to adoption of digital systems in the education sector.

Second, this study has considered three theories, viz., incentive, Fogg behavior, and status quo bias, respectively. Based on these theories, our study demonstrates that decision-making regarding the payment system for academic fees is influenced by push, pull and mooring factors. Prior studies have mostly investigated the impact of perceived factors such as perceived risk, trust, ease-of-use, and usefulness on individuals’ behavioral intentions (Kamboj et al., 2024). Thus, the present study findings are a significant contribution.

Lastly, the findings of this study regarding the moderation effect of student gender on relationship between push and pull factors with switching intentions of students towards mobile payments is an addition to the literature.

5.2 Implication to practice
The findings of the research have important implications for higher educational institutions, institutional leaders, policymakers, and other stakeholders with an interest in digitizing the education sector. For instance, this study presents cognitive factor has a negative significant impact because students have already invested time and effort in learning and getting accustomed to the existing cash payment system in their institutions for academic fee payment. Hence, they are reluctant to change. To address such challenges, higher educational institutions can promote the perceived value or benefits regarding the new mobile payment system. This will impact the switching intentions of the students from cash to mobile payment.

Further, this study indicates that impact of factors related to push and pull at switching intention towards mobile payments has a more positive influence among male students compared to female students. The Indian higher education institutions can address this issue by providing digital literacy sessions to students to enhance their knowledge related to technology and emerging digital systems including mobile payments and financial technology.
6. Conclusion, limitations and future work
We conclude that this study examined how the specific push, pull and mooring factors influenced students’ intentions to switch from cash payment towards mobile payments for academic fee payment in higher educational institutions. We investigated the effects of push factors like risk and service issues from cash payments, pull factors like subjective and aspects, and mooring factors like costs and cognitive from the incentive, Fogg behavior and status quo bias theory, respectively. The empirical findings demonstrate that the risks and service issues related to cash payments along with the subjective factors and aspects related to mobile payments are the major positive factors influencing students to switch from cash payments to mobile payments for academic fee payment in their higher educational institutions. The main challenge is the cognitive factor which has a negative significant impact. Additionally, we note that the gender of the students acts as a moderating variable in the model and significantly moderates the link between push and pull factors and switching intention.

Although the current work has made a substantial contribution to the area of knowledge, there is still a need for more research given its findings and limits. Firstly, this study can be extended by performing it in multiple countries. Second, to further expand the knowledge in this study area, more theoretical perspectives from consumers’ product and service choices can be investigated. Third, investigations can be carried out on expanding the proposed model to encompass more variables that could potentially aid educational institutions while adopting new technologies.

References


Further reading


Supplementary File
The supplementary material for this article can be found online at: https://drive.google.com/file/d/1N5MykK5bv04CKElfcTDYGsaFl8xWogC6/view?usp=sharing

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