

# Exploring User Experience and Perception of Online Digital Payment Systems

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**Abstract.** Growing internet accessibility, the rise of Internet electronic devices and government initiatives and commitment to transform India into a digital society has rapidly transformed the payment mechanism into a cashless one. This paper explores the user experience and perception of the digital payment system across different demographic profiles. The study seeks to understand the influence of demographic variables on preference for online payments, usage experience, satisfaction levels, security concerns and purchase experience. Gender, education, age and employment status are associated. There is a moderate correlation between the preference for online payments and user experience, security concerns, satisfaction levels and purchase experience. Findings show a broad agreement that online payment systems are generally seen as accessible and easy to use, supporting their widespread adoption. It is also found that there is a strong sense of security among most users, highlighting the effectiveness of online payment systems in safeguarding personal data, reflecting widespread confidence in their security features despite some concerns.

## 1 INTRODUCTION AND BACK GOUND TO THE STUDY

Digital payment systems is the transfer of money between two payment accounts using devices like mobiles and computers through digital channels. The Indian government's flagship programme aims to make India a digitally empowered country with the focus on being a cashless economy. As a part of this effort, it launched the digital India initiative in 2015 and these initiatives have rapidly boosted the digital payment system in the country. With the additional support from government programmes, the adoption of digital payments has been faster. The adoption of digital payments systems have helped the consumers transact globally, thereby enriching their shopping experience. Using internet mobile banking via smartphones, the adoption of online payments has grown rapidly over the past decade. The Capgemini World Payment report (2020) comments that "the increasing usage of non-cash transactions is questioning the future of cash as a payment"

Online payments can be accessed instantly and include various digital platforms like credit cards, debit cards, UPI apps., net banking etc.,. Online payments facilitate e-commerce by providing secure and assured payment mechanism for users making online purchases. By using online payments users can make payments anywhere in the world. These digital platforms have made the payment process user friendly and easily accessible to everyone. Digital payments help business expand their market reach, allowing them to transact with customers glob-

ally. Rapidly adopting online payments, users are making their payments through increasingly sophisticated systems. Two major factors contributing to the sophistication of online payments methods are the enhanced security levels, which is a question of debate, and user friendliness, which significantly drive their expansion. This also contributes significantly to developing economies by helping expand business in turn contributing to GDP. It helps governments to monitor the transactions which can reduce black money in the economy. These mechanisms are not a trend but the necessary requirement in a digital economy. India's demonetization initiative lead to a sudden cash shortage causing a major shift in payment behaviour. (Ajmer and Bhatt 2022) revealed that this scarcity of physical currency drove a significant rise in the use of digital wallets as people sought alternatives to the cash [1]. (Kumaraswamy and Venkataramanan, 2017) say this push towards digital payments was because of the urgent need for a reliable transaction method in the face of cash shortages. Although many consumers embraced digital wallets, their security concerns remained largely unchanged, mentioning that factors beyond usage were critical to gaining trust and encouragement to adopt digital payment systems. Ghosh (2010) emphasises that the broader acceptance of digital payment system must further be explored [2]. He conducted a survey of 750 respondents and his findings showed that the convenience of online payments, with the widespread acceptance by merchants, played a crucial role in their growing popularity. This trend was supported by Vinita and Vasantha (2018), who stated that user's satisfaction was significantly enhanced by the speed and smoothness of transaction as well as the simplicity of the payment

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process [3]. In a comprehensive study by Pillai, Sandhya and Rejig Kumar (2019), the focus shifted to mobile payments and UPI technology, both in urban and rural areas [4]. The study identified convenience and security as the primary factors driving the adoption of these payments' methods. The ease of use and reliable payment experience were pivotal in encouraging more people to transform from cash and cheques to digital transactions. Mishra and Swain (2018) further examined the role of mobile payment systems in Kolkata by surveying 200 vendors [5]. Their research highlighted the convenience and transaction efficiency where users reason why merchants favoured mobile payments for their operations. These preferences also mirrored in the findings from other studies. (Gupta and Arora 2020) who surveyed 700 Indian shoppers and discovered that the 'ease of use', 'better financial management', and the 'elimination of cash handling' were key reason for shift towards online payments [6]. Mishra (2020) provided a broader perspective on the impact of e-payment systems in the economy, emphasizing their rapid growth and increasing importance in the digital landscape [7]. The study illustrated that e-payment systems, with their advanced efficient transactions capabilities, were reshaping the financial world, highlighting their integral role in modern economic transactions. Together these studies demonstrate how necessity, convenience and technological advancements have driven the widespread adoption of digital payments in India, reflecting a significant shift in consumer behaviour and economic practices. Studies show there are contradictions when it comes to user experience, security and privacy concerns which also affect their purchase experience and satisfaction levels. So this research aims to fill the gap by analysing the data collected from the various sources on the above mentioned dimensions'-user preference, purchase experience, satisfaction levels and security concerns.

## 2 OBJECTIVES

This study investigates the attribute of digital payment system that the user values, based on their preference for various characteristics when choosing among different types of similar products. It also aims to find the relationship between the preference for online payments and user experience, security concerns, satisfaction levels and purchase experience. The study also explores the association between gender and the other demographic variables like age, educational qualification and employment status amongst the selected sample of online users of digital payment systems.

## 3 METHODOLOGY

The methodology used in this study consist of collecting primary data from the customers using digital payment systems. The survey was conducted to investigate user opinion across categories such as preference, satisfaction levels, and security perception and related to their purchase experiences. A structured questionnaire was drafted

and was distributed among more than 300 respondents from various profiles who use digital payment services. 300 (sample size) responses received with completed data, were chosen for the study. The sampling techniques used in the study was convenience sampling. Across different ages, income levels and levels of technological comfort, the survey aimed to reach a representative sample of users providing insights into the mentioned dimensions shaping the payment perceptions and user behaviour. Questionnaire designed had the questions related to demographic variables and to measure the dimensions mentioned, a Likert scale with statements related to the construct was used.

## 4 DESCRIPTIVE ANALYSIS

The correlation tests between the variables show that the preference to use online payment is more associated to the user security levels, compared to the other three dimensions taken up for the study. So, the following sections explore the payment preferences of respondents and their security concerns, based on the questions posed, related to the two variables using a descriptive analysis.

### 4.1 PREFERENCE TO USE ONLINE PAYMENT

The figure 1 shows the preference of respondents using online payments over traditional methods like cash or cheques.

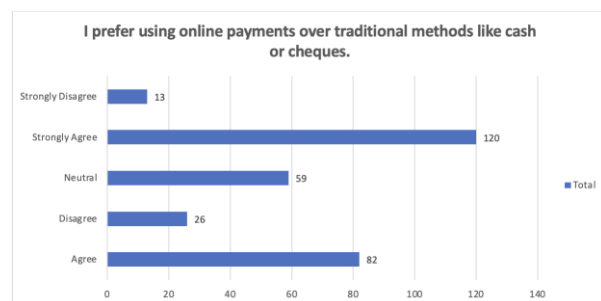


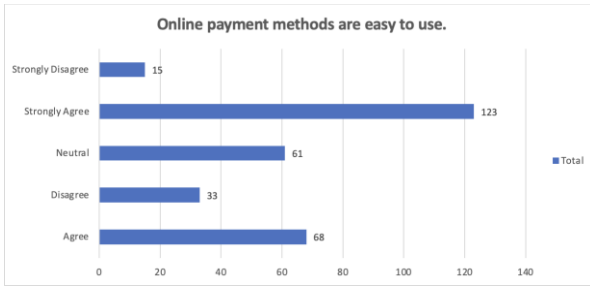
Figure 1. Preference for online payments

Online payments are clearly preferred over traditional methods like cash or cheques among the respondents. A large majority of 202 people in total, favour online payments, while only 39 people disagree or strongly disagree. Additionally, 59 participants are neutral on the topic. This strong preference for online payments suggests that digital methods are becoming more popular due to their convenience and efficiency, while traditional payment methods are becoming less favoured.

#### 4.1.1 Ease of Use

Figure 2, explains the responses related to the ease of using online payments compared to traditional forms of payment.

Feedback on the ease of use of online payment methods is positive. A significant number of respondents, totalling 191, agree or strongly agree that online payment



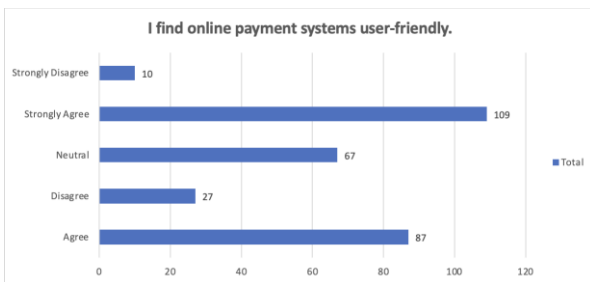
**Figure 2.** online payment-ease of use

methods are user-friendly. In contrast, only 48 people express some form of disagreement, while 61 respondents remain neutral on the issue. This shows a broad agreement that online payment systems are generally seen as accessible and easy to use, supporting their widespread adoption.

#### 4.1.2 User Friendly Payment Interface

This refers to the design of payment interface which is user friendly like touch friendly buttons, clear calls to action, streamlined layouts etc.,

The figure 3, describes the responses related to the user friendliness of online payments.



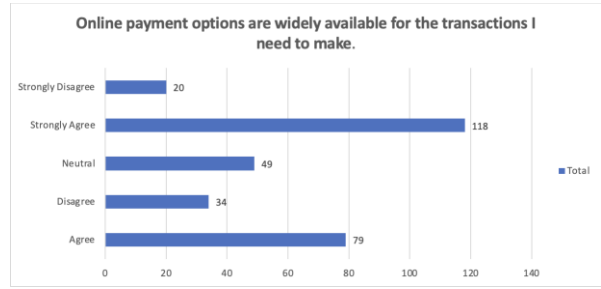
**Figure 3.** User Friendly Payment Interface

A total of 196 people agree or strongly agree that these systems are easy to use, showing that the convenience and accessibility of online payments are well-regarded. In contrast, only 37 respondents disagree or strongly disagree, while 67 are neutral. This strong positive opinion highlights the effectiveness of online payment systems in providing a user-friendly experience.

#### 4.1.3 Online Payment Options

The responses related to the wide options available for the many different types of transactions to be made is shown in figure 4

The accessibility of online payment options for basic transactions is widely recognized by respondents. A total of 197 people, who agree or strongly agree, find online payment options to be easily accessible. In contrast, 54 respondents disagree or strongly disagree, while 49 remain

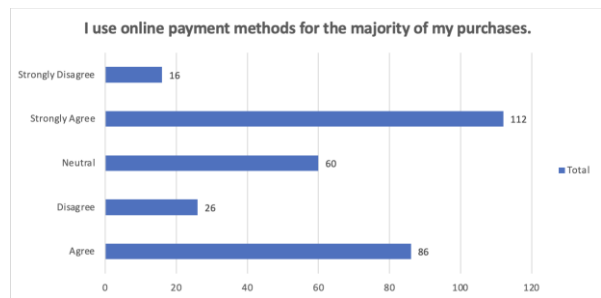


**Figure 4.** Online Payment Options

neutral. The large majority who view online payment options as readily available highlights their key role in facilitating transactions and reflects strong support for their convenience and accessibility.

#### 4.1.4 Online Payment for Purchases

The figure 5 shows the online payment user's responses related to shopping.

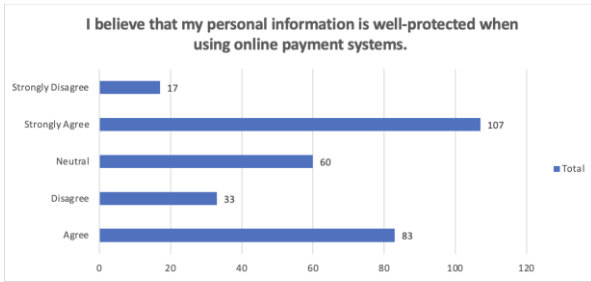


**Figure 5.** Purchase Payments

As in the figure, a total of 198 people agree or strongly agree with this statement, showing a strong preference for digital payments in their shopping. In contrast, only 42 people disagree or strongly disagree, while 60 remain neutral. This strong preference for online payments highlights their important role in everyday transactions and reflects the growing trend of digital convenience in consumer behaviour.

## 4.2 USER SECURITY LEVEL IN THE ONLINE PAYMENT

Studies on various issues in online payment interphase, show that security and privacy of data is a major concern to users of digital payment system. This is a major determinant influencing the usage of online payment systems. A Likert scale was used to measure this dimension and five statements related to the variable was used to capture the respondent's opinion. The figure 6 shows the responses related to the **personal** information being well-protected when using online payment systems.

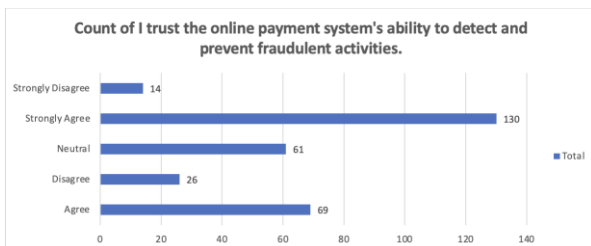


**Figure 6.** Security of personal information

**4.2.1 Security of personal information**

A total of 190 people, who agree or strongly agree, trust the security measures of these systems. In contrast, 50 people disagree or strongly disagree, and 60 are neutral. This strong sense of security among most users highlights the effectiveness of online payment systems in safeguarding personal data, reflecting widespread confidence in their security features despite some concerns.

**4.2.2 Online Payment System’s Ability to Detect and Prevent Fraudulent Activities**

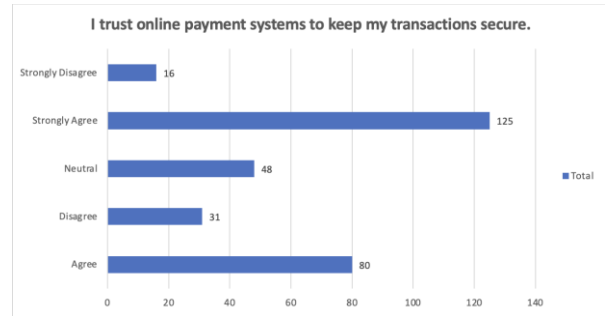


**Figure 7.** Online Payment System’s Ability to Detect and Prevent Fraudulent Activities

A total of 199 people, who agree or strongly agree, trust the system’s security measures. In contrast, 40 people disagree or strongly disagree, and 61 are neutral. This strong belief in the system’s fraud prevention capabilities shows users’ confidence in online payment security, despite some differing opinions and concerns from a smaller group.

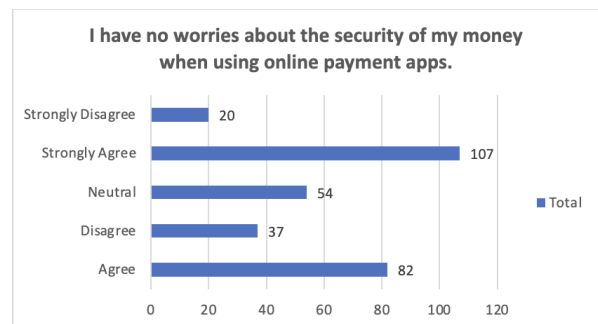
**4.2.3 Security of Transactions**

There is strong confidence in the ability of online payment systems to keep transactions secure. A total of 205 respondents, who agree or strongly agree, trust the security of these systems. In contrast, 47 people disagree or strongly disagree, and 48 are neutral. This overwhelming trust in the security measures of online payment systems highlights their effectiveness in ensuring safe transactions, reflecting broad user confidence despite some differing opinions.



**Figure 8.** Security of Transactions

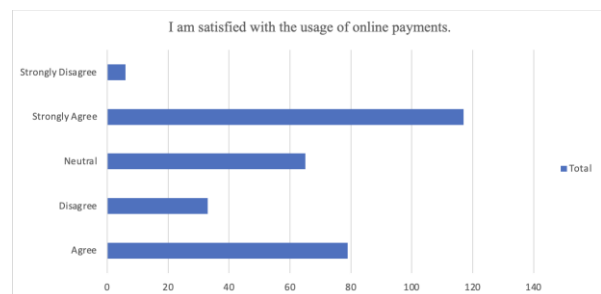
**4.2.4 Security of my money when using online payment applications**



**Figure 9.** Security of my money when using online payment applications

A total of 189 people, who agree or strongly agree, feel confident about the security of their funds. In contrast, 57 people disagree or strongly disagree, and 54 are neutral. This strong sense of security among most users highlights the effectiveness of online payment apps in providing a safe financial environment, despite some concerns from a smaller group.

**4.2.5 Overall Satisfaction**



**Figure 10.** Overall Satisfaction

Overall satisfaction with online payments is very high among respondents. A total of 196 people, who agree or

**Table 1.** Results of Chi-Squared tests

		Value	df	P
Age	X <sup>2</sup>	1.645	6	0.0012
Qualification status	X <sup>2</sup>	44.235	42	0.0010
Employment status	X <sup>2</sup>	42.456	36	0.001

strongly agree, are satisfied with their use of online payment methods. In contrast, 39 people disagree or strongly disagree, and 65 are neutral. The strong positive feedback shows that online payments are generally well-regarded for their convenience and effectiveness, reflecting broad approval from users despite some varying opinions.

### 4.3 ASSOCIATION BETWEEN GENDER AND OTHER DEMOGRAPHIC VARIABLES

Within the sample of online users, it was felt to find if there was any association between gender and the other demographic variables of age, educational qualification and employment status. As such the following hypothesis was set and tested using a Chi Square test

H1: Gender has an association with the age of respondents using digital payment systems.

H2: Gender has association with the educational qualification of respondents using digital payment systems

H3: Gender has association with the employment status of respondents using digital payment systems

For

H1:  $\chi^2(6) = 1.645, p < 0.001$

H2:  $\chi^2(42) = 44.235, p < .001$

H3:  $\chi^2(36) = 42.456, p < .001$

All p-values for these tests are  $<0.001$ , suggesting that the differences between observed numbers data cannot have occurred by pure chance at even a 1%. This implies that the variables tested in each of the chi squared test are very strongly associated with gender. As indicated by the  $\chi^2$  Value, age, qualification status and employment status has a significant association with gender at least in the selected sample of respondents who are users of digital payment systems.

### 4.4 RELATIONSHIP BETWEEN THE PREFERENCE TO USE ONLINE PAYMENTS AND OTHER 4 VARIABLES

H0: Preference to Use Online Payment has no relationship with User Satisfaction Level, Usage Experience, User Security Level In Online Payment transaction and Purchase Experience.

H1: Preference to Use Online Payment has a significant relationship with User Satisfaction Level, Usage Experience, User Security Level In Online Payment transaction and Purchase Experience.

The Pearson's correlation analyses show positive and statistically significant associations between online payment preference and factors. With  $r=0.359$ , and p-value of

**Table 2.** Correlation between preference to use online payment and other factors

Variable	R	P-Value
User satisfaction level in the online payment	0.359	0.012
Usage experience in the online payment	0.387	0.033
User security level in the online payment	0.416	0.02
Purchase experience	0.325	0.034

0.012, there is a significant relationship between user satisfaction levels and the mode of online payment. There is a minor positive relationship preference to use online payment and usage experience in all this mode of payments ( $r = 0.387, p = <0.033$ ), denoting higher usage experience positively related with an intensity for using online payments. There is also a moderate positive relationship between the online payment user preference to use online payment and security levels ( $r = 0.416, p\text{-value}=0.02$ ) showing as more perceived secure in using on line payments. Finally, online purchase experience is related to the preference for using online payment ( $r = 0.325, p=0.034$ ), individuals with stronger positive experiences in their purchasing are more willing to use this type of payment method.

## 5 DISCUSSION & CONCLUSION

Pillai, Sandhya, and Rejikumar (2019) in their research support the preference of online payment by the user. This study also show that preference to use online payment is mainly because of the easy to use, online payments are user friendly and the online payment options are widely available [4]. The analysis reveals some insights into the factor user satisfaction level in online payment demonstrating a weak positive relationship. Vinitha and Vasantha (2018) concluded that, fast transaction without interruption improves the user satisfaction level in the online payments [3]. This investigation shows the user security level in the online payment and financial data privacy is positive and respondents feel relatively safe while using online transactions. Similarly, Mishra and Swain (2018) support this outcome and also suggest that the user feels that financial record is maintained for their transactions being the reason for feeling of safety [5].

Factors like easy to use, simple steps to make the payment, the online payment methods crash rarely and most of the time the transaction is successful, are the reasons that contribute to good usage experience. **Gupta and Arora (2020)** says that the user experience in online payment is good due to quick transaction and the user-friendly steps to make the payments [6]. The descriptive analysis points to the following observations on preference for online payment and user's opinion on the security levels in online payment transactions. Online payments are clearly preferred over traditional methods like cash or cheques among the respondents. Feedback on the ease of use of

online payment methods is positive. This shows a broad agreement that online payment systems are generally seen as accessible and easy to use, supporting their widespread adoption. The large majority who view online payment options as readily available, highlights their key role in facilitating transactions and reflects strong support for their convenience and accessibility. This strong preference for online payments highlights their important role in everyday transactions and reflects the growing trend of digital convenience in consumer behaviour. Studies on various issues in online payment interphase, show that security and privacy of data is a major concern to users of digital payment system. This study however shows strong sense of security among most users highlights the effectiveness of online payment systems in safeguarding personal data, reflecting widespread confidence in their security features despite some concerns. The demographic profile of the selected sample may be the reason for this. The respondents also show a strong belief in the system's fraud prevention capabilities despite some differing opinions and concerns from a smaller group. The strong positive feedback shows that online payments are generally well-regarded for their convenience and effectiveness, reflecting broad approval from users despite some varying opinions. It can be concluded from the findings that the gender, education, age and employment status are associated. There is a moderate correlation between the preference for online payments and user experience, security concerns, satisfaction levels and purchase experience. These five dimensions can be further explored to uncover certain patterns so that the policy makers can devise strategies to mitigate the challenges and promote digitalisation with due caution in problem areas

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