

Customer Experience Design in the Era of Cashless Transactions

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Abstract

In the age of cashless transactions, customer experience design has progressed to emphasise smooth, secure, and personalised interactions. The transfer from physical payments to digital platforms necessitates a reevaluation of touchpoints to guarantee seamless integration across mobile, online, and in-store interactions. Organisations must innovate by using sophisticated technologies such as artificial intelligence, machine learning, and data analytics to augment convenience, establish trust, and elevate consumer pleasure. This shift compels firms to develop intuitive interfaces, minimise friction, and provide real-time support, while tackling issues pertaining to privacy, security, and user acceptance in the more digital financial environment. The Unified Payments Interface The shift to a cashless world has altered the manner in which people and enterprises conduct financial transactions. The advantages and obstacles of cashless transactions compel consumers to use and depend on them in the absence of actual currency. Increased security and accuracy will result in the substitution of cashless transactions for real currency. In 2016, the Prime Minister introduced the BHIM UPI program to promote digital payments, aiming to transition the economy to a cashless system and eliminate black money. India has not fully implemented it; nonetheless, the use of digital payments has risen among users. The transaction process, facilitated by a connection to the banks of both the payer and receiver, has streamlined transactions. It is crucial for each individual to maintain a personal identification number (PIN), which restricts unauthorised attempts to execute transactions without the correct PIN. Numerous nations are endeavouring to substitute traditional physical transaction methods with digital payment systems, which facilitate the tracking and documentation of each transaction. The primary problem with cashless payments is the need to recall every little transaction conducted by each user. The report emphasises the need of tackling security and technological obstacles, safeguarding data privacy, and enhancing awareness and education to facilitate wider adoption.

Keywords: UPI, Digital Transactions, PIN, Privacy, Security.

Introduction

A cashless society represents a significant shift towards digital financial transactions, forsaking conventional tangible currencies such as banknotes and coins. This innovative strategy utilises digital payment systems, such as debit/credit cards, the Unified Payment Interface (UPI), and numerous web apps, enabling seamless and easy transactions between consumers and companies. Despite the ongoing broad acceptance, cash-based transactions continue to endure. Governments around are aggressively endorsing cashless transactions via supporting legislation, striving to shift towards a more efficient and digitally inclusive economy. The implementation of cashless

transactions presents several advantages and obstacles, marking a progression towards a cashless society. It facilitates the eradication of black money, since digital transactions provide the comprehensive recording of all transactions, hence preventing tax evasion. Effective utilisation of software and encryption may mitigate financial, security, social, and operational concerns. The transition from conventional transactions to cashless transactions accelerated during the COVID-19 pandemic, facilitating contactless payments and receipts. In 2016, the Prime Minister of India launched the BHIM UPI software to facilitate digital payments, including a secure PIN for each transaction, therefore aiding the economy's shift towards a cashless system to combat black money. In several countries, like Sweden and the United Kingdom, digital platforms facilitate transactions. In Scandinavian countries such as Sweden and Norway, over 90% of point-of-sale (POS) transactions are now conducted cashlessly, rendering cash so seldom that several businesses have ceased to accept it. Mobile payments are increasing in prevalence across Asia. The widespread acceptance of cashless transactions in the future may be facilitated by consumer preferences, governmental efforts, and advancements in AI technology. This will also lead to problems such as cybersecurity threats and unemployment. The aforementioned data indicates several opportunities for people and organisations to supplant cashless transactions yet, adoption will remain incomplete owing to considerable technological and security challenges.

Modes of Cashless Payment

The digital payment ecosystem offers various straightforward and secure options, including the Unified Payment Interface (UPI) for immediate transactions through applications like PhonePe and GooglePay, contactless debit/credit card payments with encryption, and E-Cheques for online payments utilising digital signatures. Furthermore, programs like CRED provide swift credit card bill payments while providing advantages. Mobile banking applications provide a range of services, including cash transfers, bill payments, and investment management, enabling fast and secure transactions across financial institutions. These digital payment systems enable a cashless economy, offering convenience, security, and rewards to customers.

Literature Review

Ramanatha A, Ramya A, Prameela N, and Shivaprasad S (2024) in their research article titled “Improving The Digital Payment Experience: A Customer-Centric Approach to Problem Solving” stated that India's UPI, launched in 2016, has facilitated cashless transactions, with Google Pay, PhonePe, and Paytm at the forefront. The worldwide spread of UPI and the anticipated deployment of NFC-based payments are poised to revolutionise peer-to-merchant interactions. Most Mohammad Rakibul Islam Bhuiyan. Sadia Akter and Saiful Islam (2024) in their paper “How Does Digital Payment Transform Society into a Cashless Society?” An empirical research in the emerging economy surveyed 1,000 online banking customers in Bangladesh about the use of digital payment technologies. The paper examined the impact of security and technological issues on attitudes towards digital payment systems. The research offers ideas for politicians, marketers, and bankers to enhance infrastructure aimed at promoting cashless transactions and facilitating a cashless society. Mr. Vijay K (2024), in his paper titled “Cashless Society: Managing Privacy and Security in the Technological Age,” noted that the transition from conventional payment methods to cashless transactions raises concerns about data privacy and security. The study emphasises the equilibrium between personal security and privacy, proposing solutions such as randomised credit

card numbers, blockchain transaction monitoring, and educational campaigns for stakeholders. It aims to identify vulnerabilities in existing data integrity and security practices, thereby informing preventive measures. Critical domains for further inquiry include alternate solutions, nascent technology, and robust data protection systems. Singh, Devender (2023) in the study “Perception of Customers and Retailers Towards Cashless Transactions” examines the many factors that affect the preferences of merchants and consumers for cashless transactions. The research examines four significant factors and concludes that demographic features little influence the frequency of cashless transactions. Enhancing awareness and educating individuals are crucial for promoting secure cashless transactions.

Objectives

- To study users perception on cashless transactions.
- To evaluate the impact of cashless transactions on users expenses and savings.
- To understand how cashless transactions are affecting users cognitive experiences.
- To analyze the dependency on cashless transactions

Research Methodology

Sources of Data

- **Primary data:** The primary data was collected by sending a structured questionnaire to students, professional workers, homemakers, entrepreneurs, and others. The survey questions were framed based on perceptions regarding cashless society and its future analysis.
- **Secondary Data:** The secondary data was gathered from various publications, journals, papers, and websites.
- **Sample size:** The sample size was collected of 81 respondents belonging to various genders, age, occupations, education qualifications, and different income levels.
- **Statistical tools used:** To analyze and interpret the data, various statistical tools like Correlation, Chi-square, and One-way ANOVA tests are used.

Scope and Limitations of the study: Due to time constraints, the study's focus is limited to specific geographic area of Hyderabad City. The responses are collected from the respondents of different income levels, age groups, and educational qualifications.

● Hypothesis

- **Null Hypothesis (H₀₁):** There is no significant relationship between annual income and the perception that cashless transactions are increasing regular expenditure.
- **Alternative Hypothesis (H₁₀):** There is a significant relationship between annual income and the perception that cashless transactions are increasing regular expenditure.
- **Null Hypothesis (H₀₂):** There is no association between gender and the frequency of the response.
- **Alternative Hypothesis (H₂₀):** There is an association between gender and the frequency of the response.
- **Null Hypothesis (H₀₃):** There is no significant difference in the average responses between the two groups ("Occupation" and "Do you think cashless transactions are increasing your regular expenditure?")

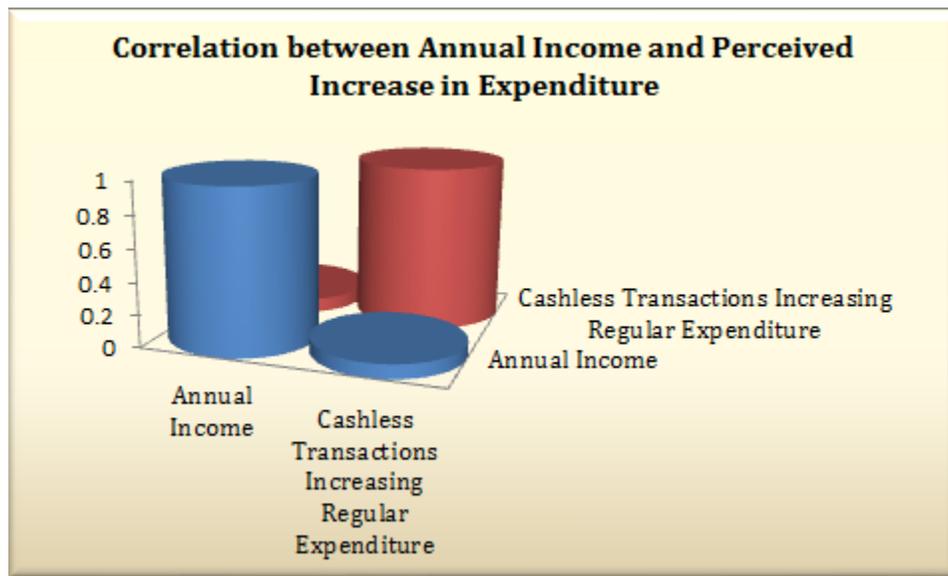
➤ **Alternative Hypothesis (H₃₀):** There is a significant difference in the average responses between the two groups.

Data Analysis:

Table 1

Correlation between Annual Income and Perceived Increase in Expenditure due to Cashless Transactions

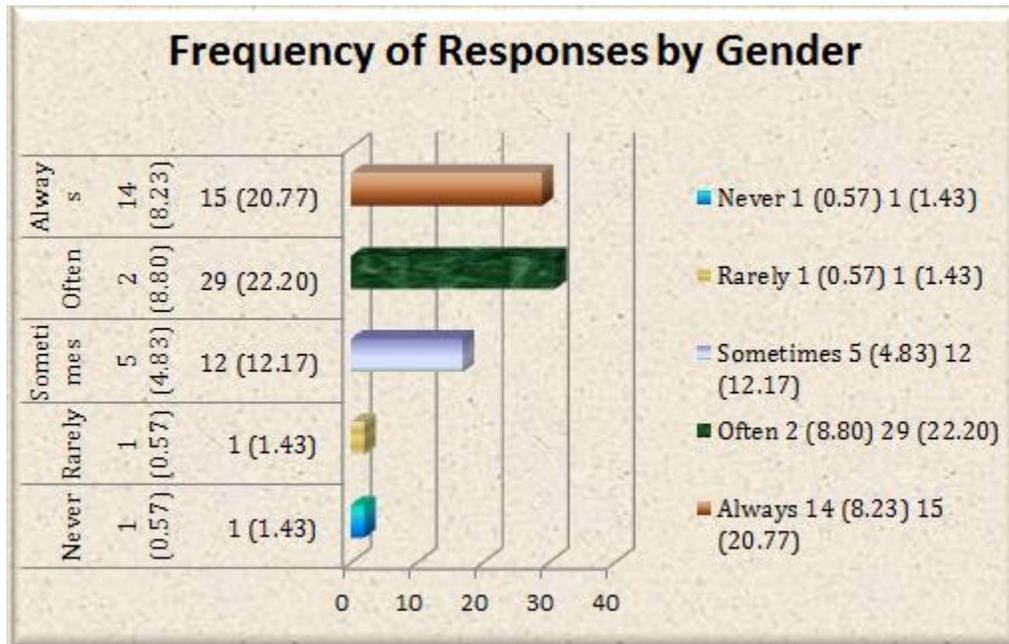
Variables	Annual Income	Cashless Transactions Increasing Regular Expenditure
Annual Income	1.000	0.087
Cashless Transactions Increasing Regular Expenditure	0.087	1.000



Interpretation: Based on the data presented in Table-1, the correlation test yielded the value "0.087437696", as a correlation coefficient, it signifies a very weak positive correlation between annual income and perceived spending increases due to cashless transactions, implying income has minimal influence on spending, therefore the null hypothesis H₀₁ is accepted and the alternate hypothesis H₁₀ is rejected.

**Chi-square
 Table 2**

Results	Never	Rarely	Sometimes	Often	Always	Row Totals
Male	1 (0.57)	1 (0.57)	5 (4.83)	2 (8.80)	14 (8.23)	23
Female	1 (1.43)	1 (1.43)	12 (12.17)	29 (22.20)	15 (20.77)	58
Column Totals	2	2	17	31	29	81 (Grand Total)



The Chi-Square statistics is 13.9059. The p-value is .007602. The result is significant at $p < .05$

Interpretation: Based on the data presented in Table 2, the chi square test yielded a chi-square statistic of 13.9059 with a significance level (p-value) of 0.5, given the results ($p = 0.007602$). This suggests that gender is significantly associated with how frequently respondents engage in the behavior or provide the response in question. Hence, null hypothesis H_{02} is rejected and alternative hypothesis H_{20} is accepted.

Table 3

Anova: Single Factor						
SUMMARY						
Groups	Count	Sum	Average	Variance		
Occupation	83	303	3.650602	3.010579		
Do you think cashless transactions are increasing your regular expenditure?	83	142	1.710843	0.695857		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	156.1506	1	156.1506	84.25918	1.81E-16	3.898787

Within Groups	303.9277	164	1.853218			
Total	460.0783	165				

Interpretation: Based on the data presented in Table 3, the one-way ANOVA test yielded a P value significantly less than 0.05. The F-statistic (84.25918) indicates a substantial difference between the groups. Hence we reject the null hypothesis H_0 , and the alternative hypothesis (H_{30}) is accepted.

Finding and Observations

- The survey had a greater number of female respondents who are between the ages of 20 and 30.
- The percentage of respondents who do not use cashless transactions is quite small.
- Out of total respondents, 61 (75%) of the respondents have been using cashless transactions for more than 3 years.
- It was observed that the annual income has minimal influence on perceived spending increases due to cashless transactions (correlation coefficient: 0.087438).
- Our study found a significant gender effect on response frequencies (Chi-Square Test, $p < 0.05$), suggesting that gender influences respondents' answers.
- Analysis of variance (ANOVA) reveals significant differences ($p < 0.05$) in average responses to cashless transactions across various occupation groups.
- A majority of respondents 54 (66.66%) find it easy to track cashless transactions.
- It is analyzed that Cashless transactions' convenience appeals to users, but security concerns persist. UPI emerges as the preferred payment mode, indicating a demand for secure and seamless digital transactions.

Conclusion

In summary, customer experience design in the age of cashless transactions has emerged as a vital element for organisations seeking to remain competitive in a swiftly changing digital environment. As customers increasingly prioritise the ease, speed, and security of digital payments, companies must modify their strategy to align with these expectations. This necessitates a holistic strategy that amalgamates technology, data, and human-centric design principles to guarantee a seamless, tailored experience at each interaction point. Utilising artificial intelligence, machine learning, and sophisticated analytics, businesses may get critical insights into customer preferences, allowing them to provide customised services that improve satisfaction and cultivate loyalty. Nevertheless, as cashless transactions proliferate, it is imperative to address issues around security, privacy, and digital literacy to establish and sustain confidence. Businesses must prioritise clear communication around data use and security protocols, making customers feel assured in their digital engagements. The design of user interfaces and experiences must prioritise simplicity, accessibility, and usability, enabling consumers with little technical proficiency to browse digital platforms with ease. Ultimately, enterprises that adopt customer-centric, creative design in the era of cashless transactions will not only improve customer happiness but also foster enduring connections that propel long-term success in an increasingly cashless environment. This research examines the user-centric viewpoint of cashless transactions, including its advantages, limitations, and impact on customer experience. Utilising primary and secondary data, client experiences about cashless

transactions, alterations in expenditures and earnings, and modifications in cognitive experiences are analysed. Marketers must prioritise gender and occupation when promoting cashless transactions, emphasising security aspects and overcoming technical and security problems.

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