



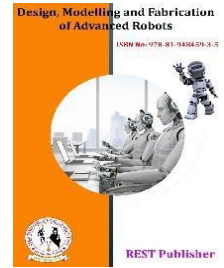
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Study on Key Drivers and Deterrents in Digital Payment in the State of Odisha

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Abstract: Digital payments represent a contemporary advancement set to revolutionize consumer shopping habits and improve overall shopping experiences. However, their adoption, especially in countries like India where this study is focused, has been slower than expected. Providers of mobile wallets must ensure that their services are secure, reliable, and consistently accessible. Difficulties encountered during digital transactions are expected to affect how consumers perceive the dependability and satisfaction provided by service providers. This research aims to identify the primary factors that either encourage or hinder the adoption of mobile payment systems. This research explores the factors that influence consumers in Odisha, India, in adopting digital payment systems. A comprehensive survey involving 161 participants from diverse demographic backgrounds was conducted to explore the frequency and types of digital payment usage, as well as the drivers and barriers affecting adoption. Descriptive statistics and correlation analysis using SPSS software reveal significant relationships among key factors such as Convenience, Security, Speed of Transactions, Cashback and Rewards, and other factors like Ease of Use, 24/7 Availability, Security Concerns, Lack of Knowledge, Technical Issues, Preference for Cash, Transaction Fees, and Limited Merchant Acceptance. The results underscore the need to improve convenience, security measures, and service availability to encourage wider adoption and use of digital payment technologies in the region. The insights from this research are especially valuable for policymakers and financial institutions aiming to facilitate the transition to cashless transactions in Odisha. By tackling specific regional challenges, this study aims to boost overall adoption rates of digital payments. Additionally, by offering concrete data on the adoption of digital payments in a region with a wide range of economic activity and digital infrastructure levels, this research adds to the body of information already in existence. It highlights the nuanced preferences and concerns of consumers in Odisha, offering practical implications for tailoring strategies to enhance digital financial inclusion and efficiency in the state.

Keywords: digital payment systems, digital transactions, Drivers, Deterrents

1. INTRODUCTION

The introduction of digital payment systems, which provide a smooth, effective, and safe means of conducting transactions, has drastically changed the worldwide financial scene. In India, the extensive adoption of digital payments has been greatly influenced by government initiatives such as Digital India and the 2016 demonetization policy. These efforts have created an enabling environment for the acceptance of digital payment systems, aiming to shift the economy from primarily cash-based transactions to a more digitized and transparent financial framework. This study aims to understand the key drivers and barriers influencing the adoption of digital payment systems in the state of Odisha. Odisha, located on India's eastern coast, is renowned for its rich cultural heritage, diverse economic activities, and unique socio-economic landscape. Despite considerable progress in various sectors, Odisha faces distinct challenges, including relatively lower levels of digital literacy and technological infrastructure compared to more urbanized states. These regional traits impact the adoption of digital payment systems in Odisha, creating a complex environment. Thus, understanding the elements that promote or hinder Odishans' adoption of digital payments might be helpful to stakeholders, financial institutions, and legislators who want to see more financial inclusion and digitalization in the state. The push towards digital payments is driven by various advantages, including convenience, speed, and enhanced security. Digital payment systems enable users to conduct transactions anytime and anywhere, eliminating the need for physical cash and reducing dependence on traditional banking infrastructure.

The growing digitalization of the global economy is transforming the production, distribution, and sale of products and services worldwide. Digital payment methods such as debit cards, credit cards, and mobile money have gained widespread popularity. Between 2014 and 2017, global adoption of digital payments among adults rose significantly, increasing from 41% to 52% (Demirguc-Kunt et al.). Motivated by the cost efficiencies of reducing paper currency and the improved financial inclusion enabled by digital payment technologies, many governments have launched official initiatives to encourage the adoption of digital payments. Digital payments decrease transaction costs by eliminating the need to store, transport, and count paper currency. They are also less tangible compared to cash. These factors suggest that adopting digital payments could lead to increased spending. As digital payments rapidly replace cash, it is crucial to comprehend and evaluate this impact. Digital payments have become crucial in financial transactions, substituting physical currency in a cashless society. ICICI Bank pioneered online banking in India, and Digi Bank is pushing forward with digital transaction services. The convergence of banking institutions, cellphones, and wireless communication has created a digital payment ecosystem that is gradually replacing traditional cash transactions. As technology advances, cash payments are transitioning to noncash methods, bolstered by global government initiatives, especially in developing economies. Recently, private digital currencies like Bitcoin and Libra (now known as Diem), Facebook's global digital currency, have gained significant attention from central banks and various sectors worldwide. For instance, from 2019 to 2022, China tested its digital currency electronic payment (DCEP) system, integrating it with platforms such as Alipay. By the end of 2021, over 8,085,100 pilot scenarios of DCEP were conducted, resulting in 261 million individual wallets opened and transactions totaling 87.565 billion Chinese yuan.

Dumitriu et al. and Djakasaputra et al. investigated how digital marketing and digital payments relate to Micro, Small, and Medium Enterprises (MSMEs). Their research revealed that the advantages and convenience of digital payments strongly influence MSMEs' adoption intentions. Another study highlighted the substantial impact of digital payment benefits and user-friendly features on MSMEs' willingness to adopt them. Additionally, the presence of financial technology (fintech) significantly enhances MSMEs' financial literacy concerning payment gateway technologies. Gutierrez et al. and Gregori et al. highlighted the significant relationship between regulatory bodies and digital payment providers in developing innovative solutions for digital payment platforms. Affandi et al., Darma et al., and Dumitriu et al. demonstrated that integrating digital marketing strategies can enhance entrepreneurial profitability. However, the role of society as the fourth institutional actor in fostering payment system innovation is often underemphasized (Borkowska and Osborne; Bengtsson and Edquist). The evolution of digital payment solutions (DPS) through stages like development, diffusion, and adoption is influenced by the interaction among academic innovation, industrial wealth creation, governmental policy regulation, and societal utility maximization. The important role of society within the Helical Quadruple Innovation Helix (HQIH) is increasingly recognized (Lee et al.), and DPS innovations have historically been user-led. This study addresses this void by investigating how digital payments affect spending patterns among small businesses and individual users in Odisha. This paper fills this gap by examining the impact of digital payments on spending among small businesses and individual users in Odisha. We also assess the influence of digital payment incentives and promotions on user adoption and usage frequency. Using a mixed-approaches methodology, the study combines quantitative information from transaction records and surveys with qualitative information from focus groups and interviews.

The speed of digital transactions is another compelling factor, providing real-time payment solutions critical for both personal and business transactions. Additionally, the security features embedded in digital payment platforms, such as encryption, two-factor authentication, and fraud detection mechanisms, have significantly improved user confidence in these systems. Cashback offers, reward points, and discounts are essential incentives that drive the adoption of digital payment systems. They not only attract new users but also build loyalty among existing users, encouraging increased transaction activity on digital platforms. The user-friendly interfaces and ease of use associated with many digital payment applications further drive adoption, particularly among users who may have limited technical skills. The availability of digital payment services 24/7 offers unparalleled convenience, allowing users to make transactions at their convenience without being constrained by the operating hours of traditional financial institutions. However, several deterrents hinder the widespread adoption of digital payments in Odisha. Security concerns remain a significant barrier, as the fear of data breaches, cyber-attacks, and fraudulent transactions deters many users from fully embracing digital payment systems. The lack of adequate knowledge and understanding of digital payment systems is another critical issue, particularly in rural areas where digital literacy programs are limited. This digital divide poses a substantial challenge to achieving widespread adoption of digital payments. Technical issues, such as failed transactions, slow processing times, and system downtimes, also contribute to user reluctance. These problems erode user trust in digital payment systems, leading

to frustration and a preference for traditional cash transactions. Additionally, cultural factors and long-standing habits contribute to a strong preference for cash among many residents, particularly older generations who are more comfortable with physical currency. The cost associated with certain digital payment methods, such as transaction fees, can further dissuade users, making digital payments less attractive compared to cash transactions.

The limited acceptance of digital payments by merchants, especially in rural and semi-urban areas, poses another significant challenge. If users cannot utilize digital payments for their daily needs, they are less likely to adopt these methods. Addressing these deterrents requires a comprehensive understanding of the regional context and targeted interventions to promote the benefits of digital payments while mitigating the challenges. The main goal of this research is to pinpoint the main factors that promote the adoption of digital payment systems in Odisha, as well as to investigate the obstacles that hinder their usage. Through an analysis of these factors, the study intends to offer practical recommendations for enhancing the uptake of digital payment systems across the state. The research methodology involves a comprehensive survey conducted with a diverse sample of participants from various demographic backgrounds across Odisha. The survey data is examined to uncover meaningful patterns and correlations, offering insights into the factors influencing the adoption of digital payments. Analyzing demographic details such as age, gender, education level, occupation, and monthly income provides a detailed understanding of how these variables influence the adoption of digital payment methods. Younger users, for instance, are generally more inclined towards adopting digital payment systems due to higher digital literacy and comfort with technology. On the other hand, older generations may be hesitant to adopt digital payments because they are less familiar with and trust digital platforms. Education level is also crucial in shaping adoption; those with higher education are more likely to understand and appreciate the advantages and security aspects of digital payment systems. Consequently, they are more inclined to use these systems compared to those with lower educational attainment. Similarly, income levels play a significant role, as individuals with higher monthly incomes often have greater access to digital infrastructure and benefit more from incentive programs offered by digital payment platforms. The study's conclusions should be very helpful to stakeholders, financial institutions, and legislators who are trying to encourage the use of digital payments in Odisha. Tailored strategies can be developed to encourage the usage of digital payment systems by concentrating on the elements that have been found to either facilitate or impede adoption. Enhancing digital literacy programs, particularly in rural and semi-urban areas, can bridge the digital divide and educate residents about the benefits and usage of digital payments. Strengthening security measures and continuously updating users about best practices can build trust and confidence in digital payment systems.

Enhancing incentive programs and partnering with merchants to broaden the acceptance of digital payments can attract and retain users. Improving the technical infrastructure to ensure reliable and efficient digital payment platforms can mitigate issues related to transaction failures and downtimes. Reducing or eliminating transaction fees can make digital payments more attractive compared to cash transactions. Digital payment systems have revolutionized the financial landscape globally, offering a myriad of benefits including convenience, speed, and enhanced security. In India, the adoption of digital payments has been accelerated by government initiatives like Digital India and the demonetization policy of 2016. However, the penetration of digital payments varies significantly across different states and regions, influenced by local economic conditions, literacy rates, and technological infrastructure. In order to pinpoint the main motivators and obstacles driving Odisha people' adoption of digital payments, this study investigates these aspects. Its main goal is to provide information that will help stakeholders and policymakers improve digital literacy and financial inclusion in the area. By removing obstacles and emphasizing the advantages of digital payments, this study seeks to assist Odisha's shift to a digital economy. It is anticipated that the study's conclusions will improve conversations on digital financial inclusion and highlight how digital payments power economic growth in developing nations.

2. LITERATURE REVIEW

Based on a natural experiment of the 2016 Indian Demonetization, Sumit Agarwal and his team's research explores the impact of digital payments on consumer purchasing. Digital payment adoption increased by 3.38 percentage points, according to their research. Furthermore, they observed that for every 10 percentage point increase in previous reliance on cash, monthly expenditures increased by 3%. This higher level of spending continued even after cash became readily available again. Their robustness checks ruled out other factors such as income shocks, changes in credit supply, price fluctuations, or a shift towards the formal market as reasons for the increased spending. The study concludes that digital payments enhance consumer spending mainly because they make the act of spending less conspicuous.

In recent years, digital payments have significantly increased their share of the Indian payments market, a trend expected to persist. India's transition from cash to digital transactions started with initiatives spearheaded by the Reserve Bank of India and other key institutions to achieve the "Digital India" vision. Presently, India hosts one of the globe's largest and rapidly expanding digital payment ecosystems, with about a billion cards and over two billion prepaid payment instruments (PPIs) in circulation. E-commerce has grown dramatically as a result of the expansion of internet infrastructure, and retail digital payments have been revolutionized by the Unified Payments Interface (UPI). According to a recent study, the National Payments Corporation of India (NPCI) greatly increased the adoption of digital payments in India in 2016 when it introduced UPI. Increased smartphone usage, reduced internet costs, societal changes, government restrictions, regulatory goals, and other factors have all contributed to the rise of the digital payment market. These advancements provide businesses and customers with safe, quick, and affordable payment choices (Mahesh A. and Ganesh Bhat S.).

Using a mobile device to initiate, approve, and confirm financial transactions for the purchase of goods and services is known as mobile payment, or m-payment (Karnouskos; Kaur et al.). According to Goeke and Pousttchi, another definition of it is a payment mechanism that initiates, authorizes, or completes transactions via mobile communication technologies and devices. In terms of concept, mobile payments (m-payments) are a contemporary means of transferring value that are similar to conventional payment methods but make use of mobile phones' advanced features and strong encryption to protect customers' financial information (Pandy and Crowe). According to the Smart Card Alliance (2011), mobile payments can be classified into two main types: remote and proximity. Remote payments do not require direct interaction between the consumer and the merchant's point-of-sale (POS) system, typically involving the customer downloading an application and completing registration. Proximity payments, on the other hand, require some interaction between the consumer's device (like a mobile phone or tablet) and the merchant's POS system, typically facilitated through contactless methods such as near field communication (NFC).

According to Wassan Abdullah Alkhowaiter's research, the development of digital payments and banking has been greatly aided by the global expansion of mobile and internet technology. Despite these advancements, a glaring deficiency of thorough study remains about the variables impacting the uptake of digital banking and payments, particularly in GCC nations. The study identifies trust, perceived security, and perceived usefulness as pivotal factors influencing adoption and proposes a conceptual framework to steer future research. These findings can support practitioners in bolstering the uptake and improving the quality of digital banking services across the Gulf region.

In recent years, the Indian banking system has experienced substantial advancements, largely driven by technology. Technology has enabled more efficient interactions between customers and banks, impacting how various services are utilized by both banking and non-banking institutions (Singh, 2012). Traditionally, the Indian banking system relied heavily on conventional channels (Pay, 2014). Online banking, one of the early forms of digital payments in India, originated in the 1980s primarily for paying utility bills such as gas, telephone, and electricity. Internet banking involves conducting banking transactions over the internet. The central bank's initiatives to encourage electronic payments across the country are examined in the report "The Electronic Payments Revolution in India." A major factor in the growth of retail electronic payments and the encouragement of the transition to a cashless economy has been the establishment of the National Payments Corporation of India (NPCI) in 2009. The Reserve Bank of India (RBI) has actively supported digital payments, resulting in significant increases in both transaction volumes (49.5%) and values (9.1%) during the 2015-16 period compared to the previous year (Board et al.).

3. MATERIALS AND METHOD

This research is part of a larger project investigating the factors influencing Indian consumers' readiness to transition to cashless transactions and their willingness to adopt digital payment services and technologies. This segment specifically explores socio-demographic factors like age, education, and income levels, as well as variables such as convenience, privacy, and perceived costs. Odisha, situated on India's eastern coast, boasts a rich cultural heritage and diverse economic activities. However, it faces challenges like lower levels of digital literacy and infrastructure compared to more developed states. Gaining insights into the factors that drive or impede the adoption of digital payments in Odisha can offer valuable information for policymakers and financial institutions aiming to encourage cashless transactions. A comprehensive survey was conducted with 161 participants from various demographic backgrounds across Odisha. The survey collected information on demographics, frequency and types of digital payment usage, factors influencing the decision to use digital

payments, and deterrents faced by users. The collected data was analyzed using SPSS software to identify significant patterns and correlations.

Drivers of Digital Payment:

Convenience: Convenience stands out as a key factor driving the adoption of digital payments. Users value the flexibility to perform transactions at any time and from any location without needing to visit a physical bank or ATM. This convenience reduces the inconvenience of carrying cash and provides a simplified method for handling everyday transactions, including bill payments, online shopping, and money transfers to acquaintances.

Speed of Transactions: The speed at which digital payments are processed is crucial. Unlike traditional banking methods that may involve delays in processing times, digital payments often occur instantaneously or in real-time. This quick transaction processing is especially beneficial for businesses needing to receive payments promptly and individuals looking for efficient ways to manage their finances.

Security: Security is a paramount consideration for users embracing digital payments. Many users view digital payments as more secure than carrying substantial cash amounts, owing to features such as two-factor authentication, encryption of sensitive information, and sophisticated fraud detection systems employed by payment service providers. The assurance of secure transactions enhances trust and encourages more users to adopt digital payment platforms.

Cashback and Rewards: Incentives such as cashback offers, rewards points, and discounts are effective in driving digital payment usage. These incentives not only attract new users but also encourage existing users to increase their transaction frequency. Cashback offers, in particular, incentivize users to choose digital payment methods over cash, as they receive monetary rewards for their transactions.

Ease of Use: Easy-to-use interfaces and intuitive navigation are crucial for the acceptance of digital payment systems. Platforms that offer seamless user experiences, with clear instructions and easy access to transaction histories, appeal to a broader audience, including those with limited digital literacy. The simplicity of conducting transactions via a few taps on a smartphone enhances overall user satisfaction and adoption rates.

24/7 Availability: The availability of digital payment services round-the-clock is a significant advantage over traditional banking hours. Users can make payments or transfers at any time of day or night, including weekends and holidays, providing unmatched flexibility and convenience. This accessibility ensures that users are not constrained by banking schedules and can manage their finances according to their own preferences and schedules.

Deterrents to Digital Payment:

Security Concerns: Despite robust security measures, many users are wary of digital payments due to concerns about data breaches, cyber-attacks, and fraudulent transactions. These fears undermine trust in the security of digital payment systems, particularly among users who prioritize the protection of their financial information.

Lack of Knowledge: A significant barrier to digital payment adoption in Odisha is the lack of knowledge and understanding of how digital payment systems work. This knowledge gap is more pronounced in rural areas, where access to information and digital literacy programs is limited. Without sufficient education on the benefits and procedures of digital payments, users may be hesitant to transition from traditional cash-based transactions.

Technical Issues: Technical glitches such as failed transactions, slow processing times, and system downtimes frustrate users and erode trust in digital payment systems. Persistent technical issues can lead to inconvenience and dissatisfaction, prompting users to revert to more reliable traditional payment methods.

Preference for Cash: Cultural factors and entrenched habits contribute to a strong preference for cash transactions among many users, particularly older generations. Cash is perceived as tangible and reliable, offering a sense of security and familiarity that digital payments may not replicate for some individuals.

Transaction Fees: The cost associated with certain digital payment methods, such as transaction fees or service charges, can deter users. Additional charges diminish the perceived cost-effectiveness of digital payments

compared to cash transactions, especially for small-value transactions where fees may constitute a significant proportion of the transaction amount.

Limited Merchant Acceptance: Inadequate acceptance of digital payments by merchants, particularly in rural and semi-urban areas, poses a barrier to adoption. If users cannot use digital payment methods for everyday purchases and services, they are less likely to adopt these methods as their primary mode of payment.

The robust software program SPSS, now known as IBM SPSS Statistics, is used extensively for statistical analysis in a variety of industries, including the social sciences, business, and healthcare. It offers an easy-to-use interface for manipulating, analyzing, and visualizing data. SPSS allows users to conduct descriptive statistics, inferential statistics (like t-tests, ANOVA, regression analysis), and advanced data modeling techniques. Its graphical user interface (GUI) makes it accessible for users with varying levels of statistical expertise, enabling them to explore data, generate reports, and make data-driven decisions efficiently. SPSS also supports integration with other software and databases, facilitating seamless data import and export. With its extensive capabilities and ease of use, SPSS remains a popular choice among researchers, analysts, and decision-makers for exploring and interpreting data to derive meaningful insights.

The analysis of survey data using SPSS version 16.0 revealed several key insights into digital payment adoption trends in Odisha. Younger users, typically aged between 18 to 35 years, demonstrate a higher propensity for adopting digital payments, driven by greater digital literacy and comfort with technology compared to older demographics. Education level also plays a significant role, with more highly educated individuals showing increased usage of digital payment systems due to their better understanding of the associated benefits and security measures. Moreover, users with higher monthly incomes are more inclined to use digital payments frequently, often motivated by cashback and rewards programs offered by digital platforms. Based on these findings, several suggestions can be proposed to boost the adoption of digital payments in Odisha. Firstly, implementing comprehensive digital literacy programs targeted at rural and semi-urban areas can educate residents about the advantages and practicalities of digital transactions. Strengthening security measures on digital payment platforms is crucial to instilling confidence and trust among users, necessitating regular updates and communication on security practices. Expanding incentive programs such as cashback, rewards, and discounts can attract and retain users, particularly when partnered with exclusive deals from merchants. Investing in robust technical infrastructure is essential to minimize transaction failures and ensure the reliability and efficiency of digital payment systems. Promoting digital payment acceptance among merchants, especially in rural areas, through incentives and support can further drive adoption. Additionally, reducing or eliminating transaction fees associated with digital payments can make them more competitive and appealing compared to traditional cash transactions. By implementing these strategies, stakeholders can facilitate a smoother transition towards a more cashless economy in Odisha, fostering economic inclusion and efficiency in financial transactions.

4. RESULT AND DISCUSSION

TABLE 1. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.581	.583	12

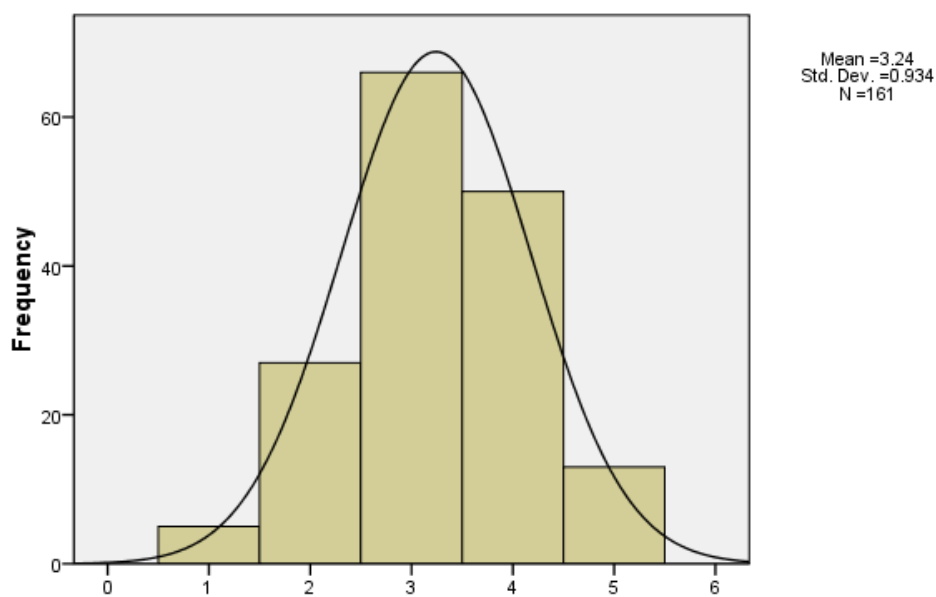
The internal consistency of the survey items used in the study is illustrated by the reliability statistics displayed in Table 1. Reliability data show that the Cronbach's Alpha coefficient is 0.581, with a little higher value of 0.583 based on standardized items. The 12 items evaluated in the survey tool have a moderate level of internal consistency, according to these coefficients. Despite falling below the typically desired threshold of 0.7 for Cronbach's Alpha, which indicates strong internal reliability, values around 0.6 can still indicate acceptable consistency, particularly depending on the context and purpose of the study. Further examination of individual item correlations and potential adjustments may be necessary to strengthen reliability in future research endeavours.

TABLE 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Convenience	161	1	5	3.24	.934	-.130	-.230
Speed of Transactions	161	1	5	2.95	.986	.338	-.451
Security	161	1	5	3.00	1.084	-.149	-.764
Cashback and Rewards	161	1	5	3.10	1.091	.093	-.834
Ease of Use	161	1	5	3.02	1.072	-.050	-.737
24/7 Availability	161	1	5	3.12	1.051	-.010	-.584
Security Concerns	161	1	5	3.07	1.052	.045	-.761
Lack of Knowledge	161	1	5	2.97	1.115	.034	-.760
Technical Issues	160	1	5	3.09	1.069	.155	-.743
Preference for Cash	161	1	5	2.91	1.042	.256	-.726
Transaction Fees	161	1	5	3.04	1.033	-.088	-.710
Limited Merchant Acceptance	161	1	5	2.87	1.050	.199	-.684

Table 2 provides descriptive statistics on the several variables that 161 participants in Odisha had in mind when they used digital payment methods. Every factor was assigned a number between 1 and 5, where 1 denotes a low influence and 5 denotes a high influence. The mean scores indicate moderate to high levels of perceived influence across different dimensions: Convenience (Mean = 3.24, Std. Deviation = 0.934), Speed of Transactions (Mean = 2.95, Std. Deviation = 0.986), Security (Mean = 3.00, Std. Deviation = 1.084), Cashback and Rewards (Mean = 3.10, Std. Deviation = 1.091), Ease of Use (Mean = 3.02, Std. Deviation = 1.072), and 24/7 Availability (Mean = 3.12, Std. Deviation = 1.051). Participants also expressed concerns with factors that inhibit digital payment adoption: Security Concerns (Mean = 3.07, Std. Deviation = 1.052), Lack of Knowledge (Mean = 2.97, Std. Deviation = 1.115), Technical Issues (Mean = 3.09, Std. Deviation = 1.069), Preference for Cash (Mean = 2.91, Std. Deviation = 1.042), Transaction Fees (Mean = 3.04, Std. Deviation = 1.033), and Limited Merchant Acceptance (Mean = 2.87, Std. Deviation = 1.050). Skewness and kurtosis values indicate the distributional characteristics of the data, showing generally symmetrical distributions with minor deviations from normality across most factors. These statistics provide a snapshot of the perceived importance and challenges associated with digital payment adoption in the Odisha region, informing potential strategies to enhance adoption rates and mitigate barriers.

Frequency Histogram

**FIGURE 1.** Frequency for convenience

A histogram for the convenience of digital payments is shown in Figure 1. Less than three respondents express a favorable opinion of the convenience of digital payments, suggesting a modest centering of the data. Despite this,

the values mainly lie below the normal curve, indicating that the sample's remaining values generally follow a normal distribution.

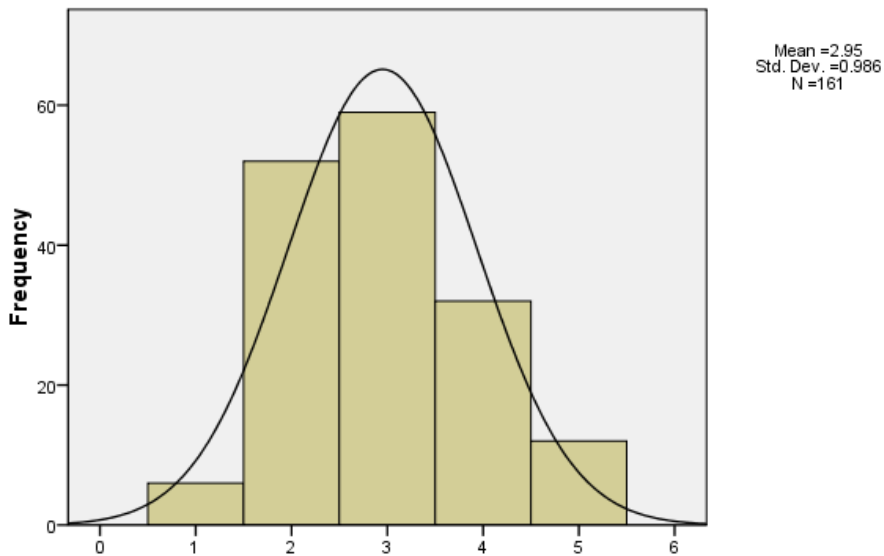


FIGURE 2. Frequency for speed of transactions

A histogram representation of the speed at which digital payments are made is displayed in Figure 2. 2, 3 The approach to digital payment speed of transactions is evident in the picture, which shows that the data is skewed at the center. All other values, however, sit under the normal curve, suggesting that the sample essentially follows a normal distribution for all other values.

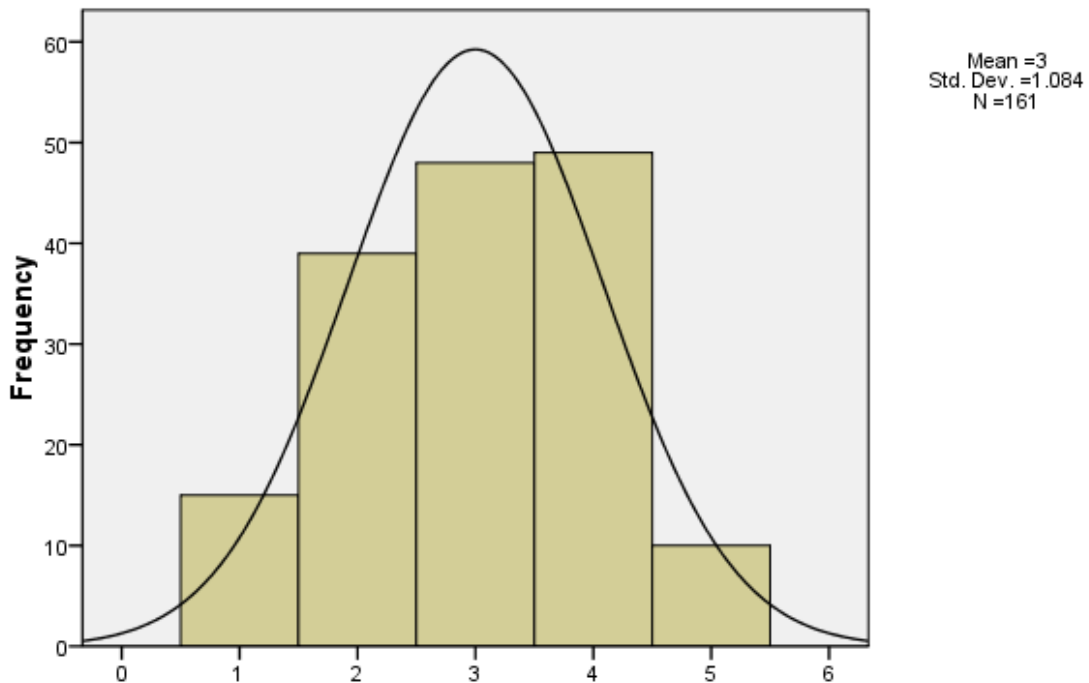


FIGURE 3. Frequency for security

A histogram showing the speed of digital payment security is shown in Figure 3. The way that digital payment security is approached is clearly skewed toward the center of the data. All other values, however, lie below the normal curve, indicating that the sample, for the remaining values, primarily has a normal distribution.

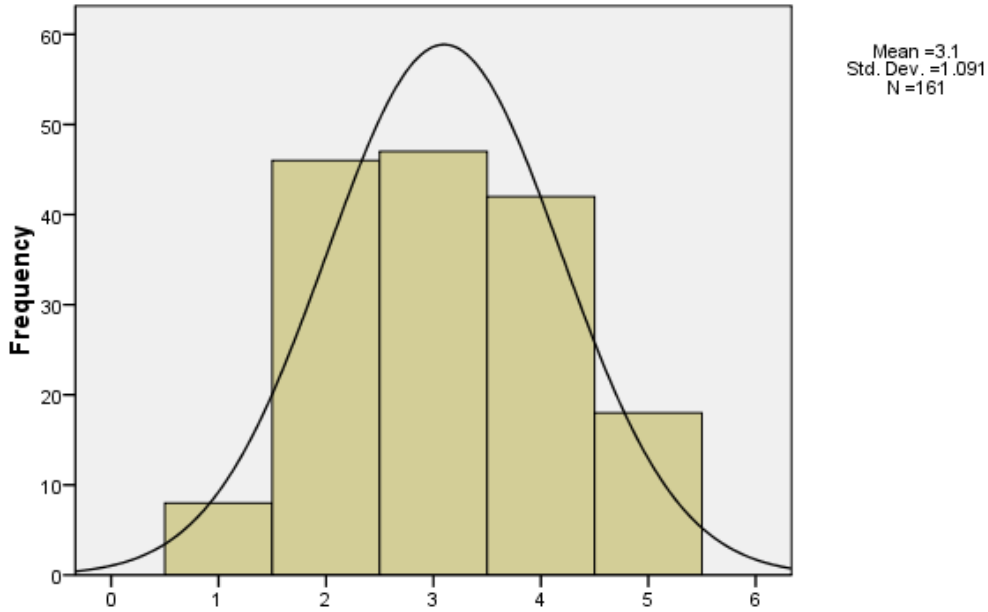


FIGURE 4. Frequency for cashback/rewards

A histogram showing the speed of digital payment payback or rewards is shown in Figure 4. Because of the way that digital payment payback and rewards are handled, the data exhibits a central skew. For the other numbers, the sample appears to mostly follow a normal distribution, though, as all other values fall below the normal curve.



FIGURE 5. Frequency for ease of use

The ease of use of digital payments is represented by a histogram in Figure 5. The approach to digital payment convenience results in a central tilt in the data. All other values, on the other hand, lie below the normal curve, suggesting that the sample, for the remaining values, mostly follows a normal distribution.

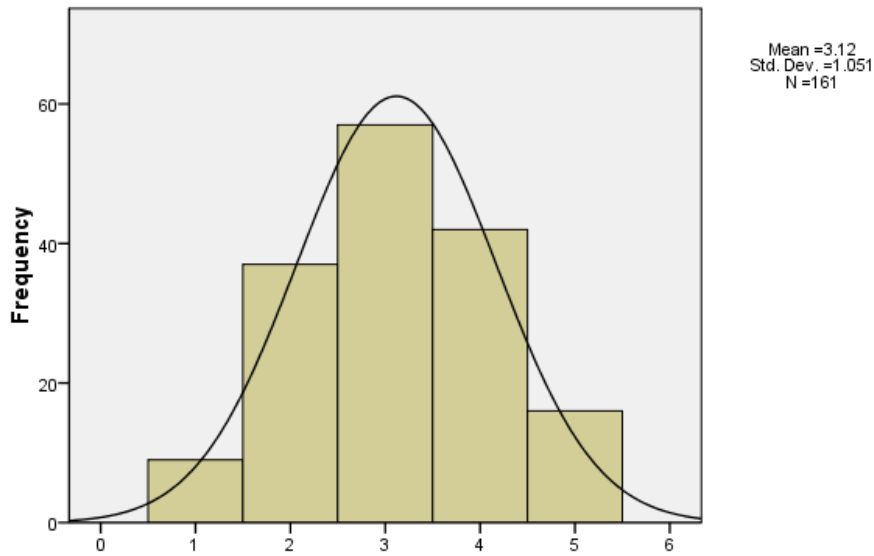


FIGURE 6. Frequency for 24/7 availability

A digital payment availability histogram is shown in Figure 6. Because of this 24/7 digital payment access, the data is skewed in the center. For the other numbers, the sample appears to mostly follow a normal distribution, though, as all other values fall below the normal curve.

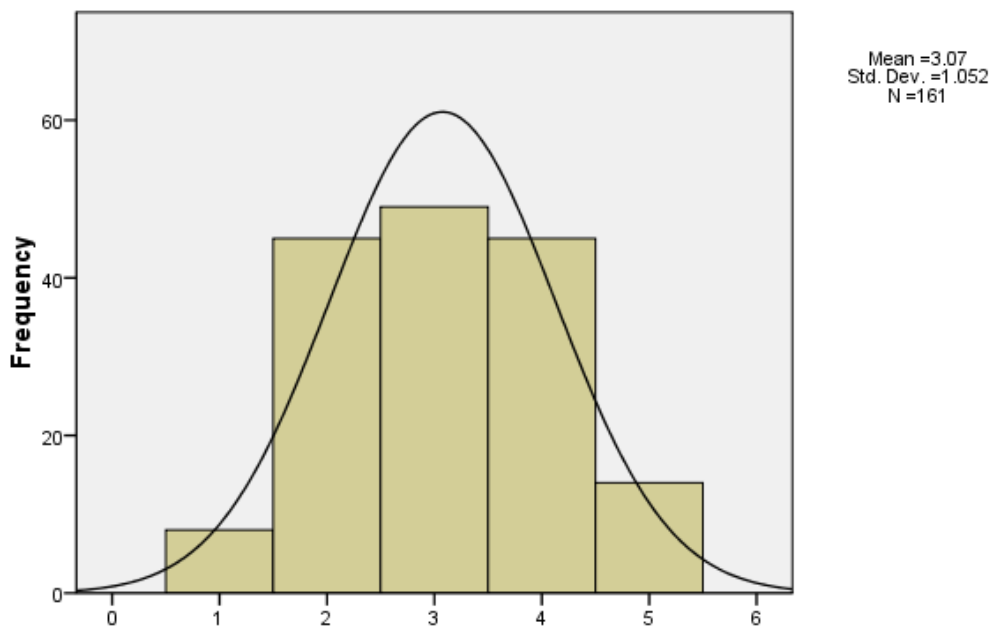


FIGURE 7. Frequency for security concerns

A histogram illustrating the security issues preventing digital payments is shown in Figure 7. A core skewness associated with the strategy for addressing these security vulnerabilities is seen in the histogram. The sample appears to mostly follow a normal distribution for all other values, even though the remaining data points fall below the normal curve.

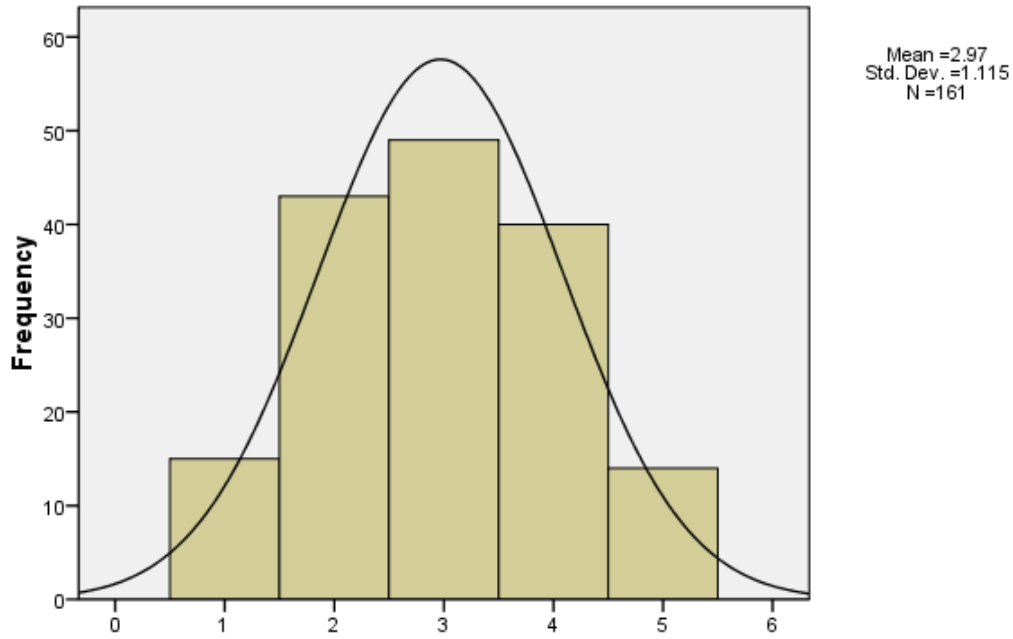


FIGURE 8. Frequency for lack of knowledge

The lack of knowledge-based barriers to digital payments are represented by the histogram in Figure 8. Regarding the strategy for this deterrence, the figure displays a center skewness. The sample primarily follows a normal distribution for these values, as shown by the fact that all other data points lie within the normal curve.

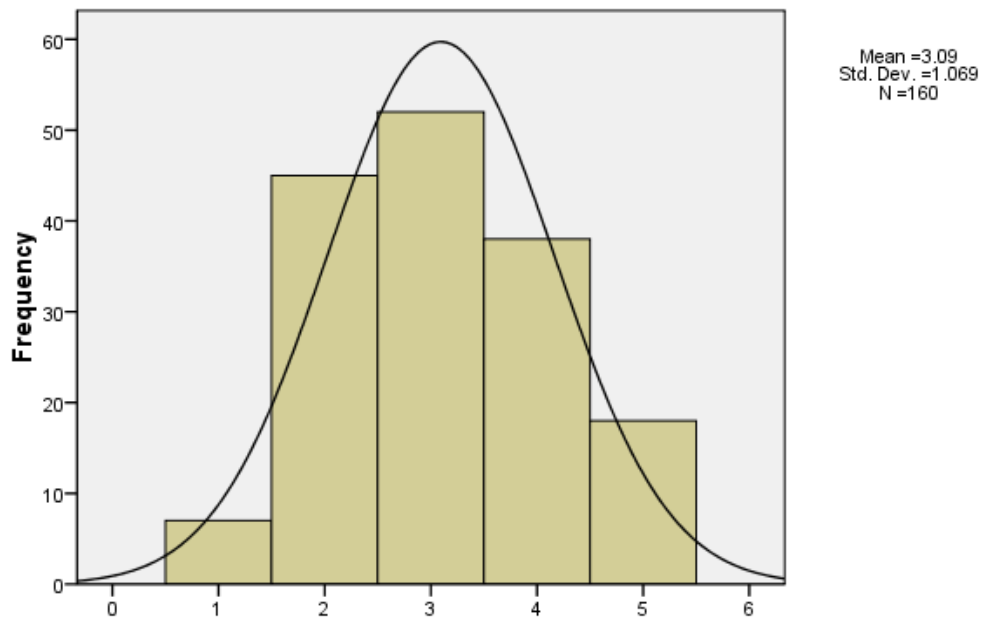


FIGURE 9. Frequency for technical issues

Figure 9 shows a histogram that shows the barriers to digital payments brought on by technological problems. The data exhibits central skewness associated with the methodology used to address these technical problems. Even so, the remaining data points are contained inside the normal curve, suggesting that the sample as a whole follows a normal distribution for the remaining values.

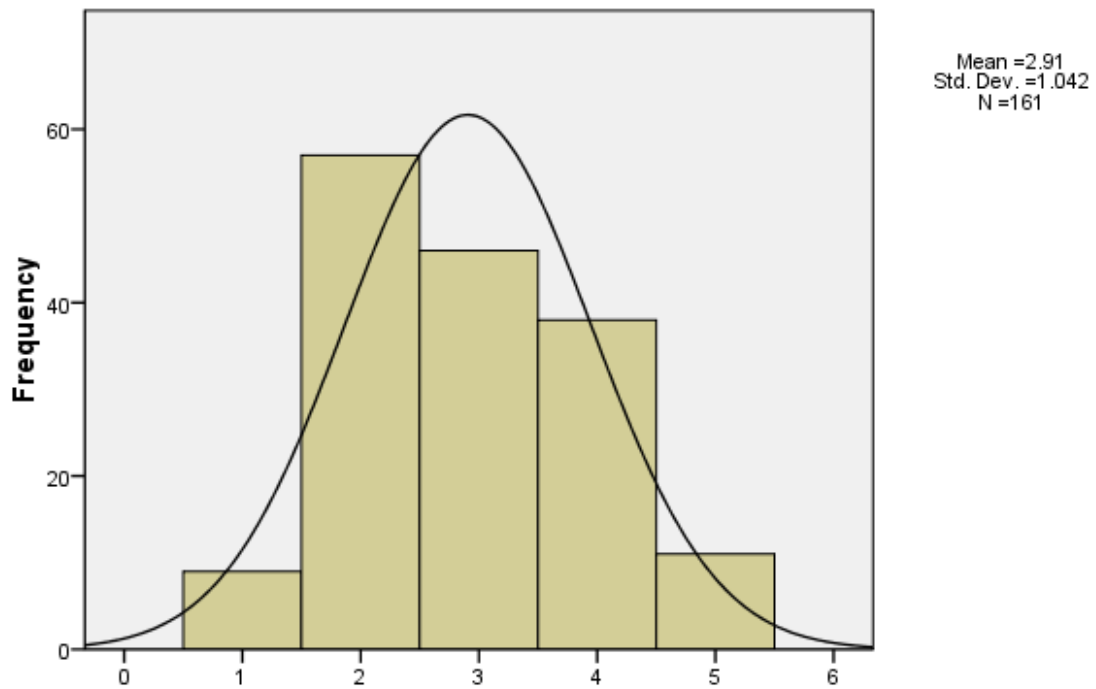


FIGURE 10. Frequency for preference for cash

A histogram illustrating the reasons why people prefer cash over digital payments is shown in Figure 10. Central skewness associated with this choice is evident in the data. The sample appears to mostly follow a normal distribution for the other values, though, since all other data points lie inside the normal curve.

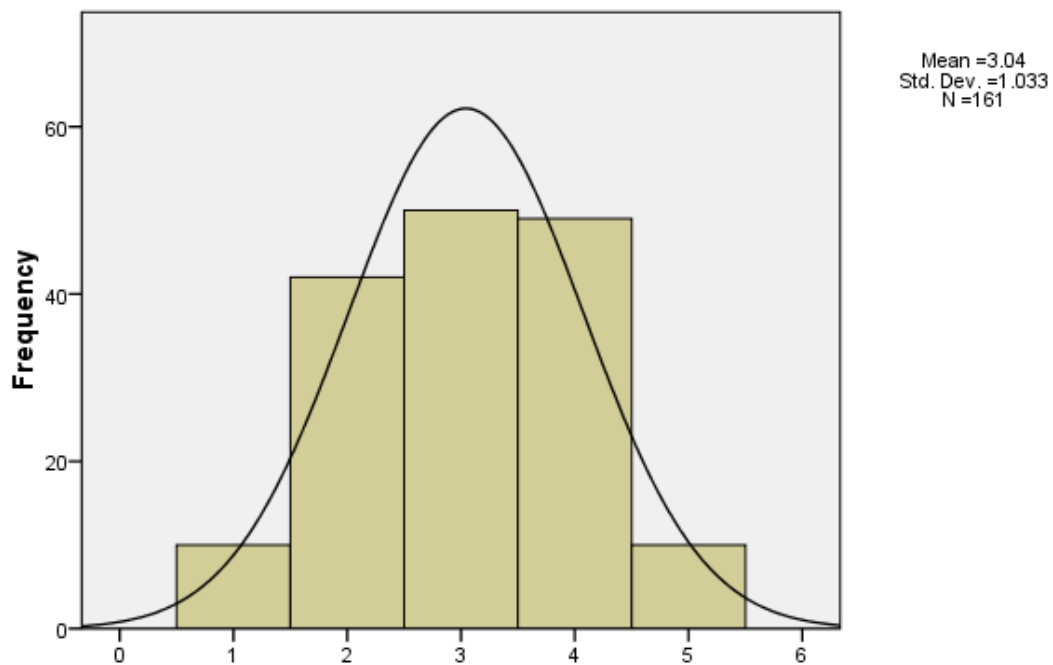


FIGURE 11. Frequency for transaction fees

A histogram depicted in Figure 10 demonstrates how the inclination towards cash serves as a barrier to digital payments. This predilection is the reason for the center skewness seen in the data. The sample appears to be primarily regularly distributed for these values, however, since most other data points follow a normal distribution.

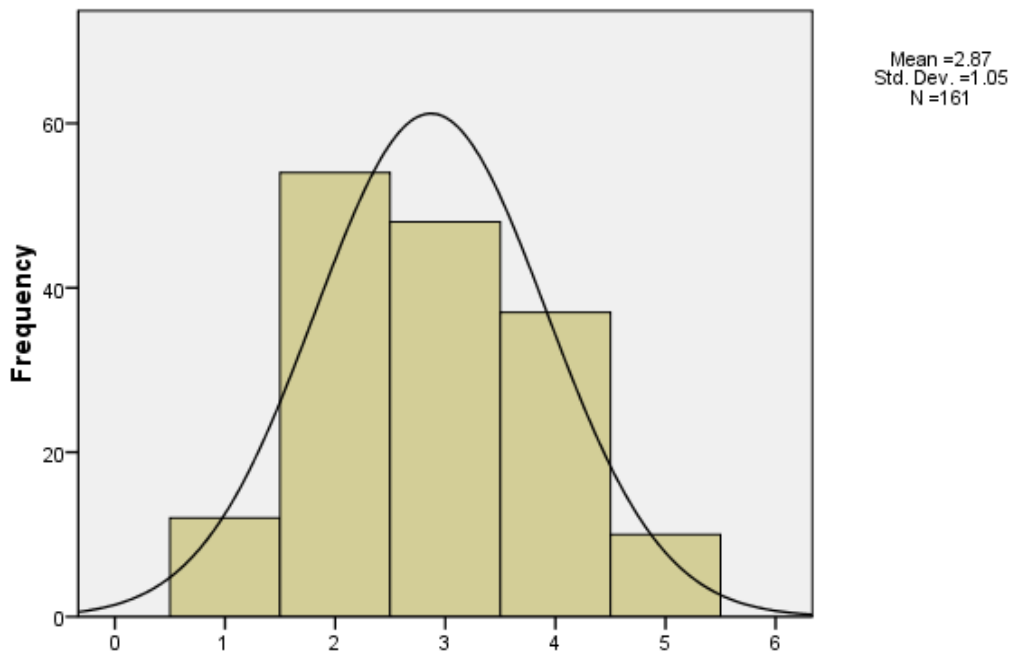


FIGURE 12. Frequency for limited merchant acceptance

A histogram showing how restricted merchant acceptance discourages digital payments may be found in Figure 12. The information shows central skewness that is linked to this disincentive. The remaining values, however, are in good agreement with a normal distribution curve, indicating that the sample as a whole mostly has a normal distribution for these values.

TABLE 3. Inter-Item Correlation Matrix

	Convenience	Speed of Transactions	Security	Cashback and Rewards	Ease of Use	24/7 Availability	Security Concerns	Lack of Knowledge	Technical Issues	Preference for Cash	Transaction Fees	Limited Merchant Acceptance
Convenience	1.000	.148	.309	.066	.125	.162	.015	.051	.116	.118	.082	.107
Speed of Transactions	.148	1.000	.094	.339	.031	.284	-.052	.210	.099	.057	.069	.165
Security	.309	.094	1.000	-.021	.290	.077	.049	-.047	.103	.078	.006	.006
Cashback and Rewards	.066	.339	-.021	1.000	-.050	.267	-.099	.237	.123	.051	-.003	.186
Ease of Use	.125	.031	.290	-.050	1.000	.003	.187	-.052	.184	-.004	.175	-.058
24/7 Availability	.162	.284	.077	.267	.003	1.000	-.076	.283	-.011	.136	.077	.214
Security Concerns	.015	-.052	.049	-.099	.187	-.076	1.000	-.030	.179	-.040	.067	-.055
Lack of Knowledge	.051	.210	-.047	.237	-.052	.283	-.030	1.000	.109	.397	.209	.259
Technical Issues	.116	.099	.103	.123	.184	-.011	.179	.109	1.000	-.043	.219	.039
Preference for Cash	.118	.057	.078	.051	-.004	.136	-.040	.397	-.043	1.000	.132	.369
Transaction Fees	.082	.069	.006	-.003	.175	.077	.067	.209	.219	.132	1.000	.172
Limited Merchant Acceptance	.107	.165	.006	.186	-.058	.214	-.055	.259	.039	.369	.172	1.000

The correlation matrix presented in Table shows the relationships between various factors influencing the adoption of digital payment systems in Odisha. Each cell displays the Pearson correlation coefficient, indicating the strength and direction of association between pairs of factors. Noteworthy positive correlations include Convenience with Speed of Transactions ($r = 0.148$), Security ($r = 0.309$), and 24/7 Availability ($r = 0.162$). Speed of Transactions also correlates positively with Cashback and Rewards ($r = 0.339$) and Limited Merchant Acceptance ($r = 0.165$).

Security shows positive correlations with Ease of Use ($r = 0.290$) and Lack of Knowledge ($r = 0.210$). Conversely, negative correlations are observed between factors such as Security Concerns and Speed of Transactions ($r = -0.052$) and Technical Issues ($r = -0.030$), indicating that higher concerns about security may lead to perceived slower transactions and technical challenges. These correlations provide insights into the interdependencies among factors influencing the adoption of digital payment services in Odisha, highlighting potential areas for improvement and targeted interventions to enhance user experience and mitigate adoption barriers.

5. CONCLUSION

The adoption of digital payment systems in Odisha hinges on a complex interaction of motivators and obstacles. Understanding these factors and implementing targeted strategies can significantly advance the state's journey towards a cashless economy. This study aims to contribute by analyzing the primary drivers and deterrents of digital payment adoption in Odisha, offering practical recommendations for stakeholders to enhance financial inclusion and digitalization in the region. It emphasizes that while digital payments bring numerous benefits, several barriers must be tackled for widespread acceptance in Odisha. Key strategies include improving digital literacy, enhancing security measures, providing incentives, and ensuring robust technical infrastructure. These initiatives not only promote financial inclusion but also support India's broader goal of transitioning to a cashless economy. The study underscores the critical role of convenience, security, and incentives like cashback in shaping consumer attitudes towards digital payments. Convenience, particularly ease of use, transaction speed, and availability around the clock, emerged as a major driver. Improving these aspects through intuitive interfaces and seamless integration into daily transactions could significantly increase adoption rates. Addressing security concerns is vital, necessitating robust cybersecurity measures and educational campaigns to build trust and mitigate risks associated with digital transactions. Strategies focusing on data protection and fraud prevention are essential for cultivating a secure digital payment environment. Furthermore, challenges such as limited merchant acceptance and technical issues pose barriers to widespread adoption. Overcoming these obstacles requires collaborative efforts to expand infrastructure, enhance interoperability, and ensure reliability in digital payment systems. Policymakers and financial institutions can leverage these insights to tailor interventions that boost digital literacy, expand merchant networks, and incentivize adoption through promotions and rewards. Establishing a supportive regulatory framework that encourages innovation while safeguarding consumer interests is crucial for advancing digital financial inclusion in Odisha.

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