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**ROLE OF UPI IN ADVANCING WOMEN'S EMPOWERMENT: EVIDENCE FROM SELECT DISTRICTS OF WEST BENGAL**

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*Digital payment systems have transformed financial transactions in India over the past decade. The introduction of the Unified Payments Interface (UPI) has made digital payments faster, easier, and more accessible. This research paper examines the adoption and usage of UPI among women in West Bengal and its impact on financial inclusion and empowerment. The study explores the socio-economic factors influencing digital payment adoption, the benefits women derive from using UPI, and the challenges they face in adopting digital financial technologies. The research highlights that UPI has improved financial independence, convenience, and business opportunities for women. However, issues such as digital literacy gaps, smartphone ownership inequality, internet connectivity problems, and security concerns continue to hinder wider adoption. The paper concludes that while UPI has significant potential to promote women's financial inclusion in West Bengal, targeted digital literacy programs and policy interventions are necessary to ensure inclusive digital growth.*

**Keywords:** digital payments, financial inclusion, women empowerment, UPI, West Bengal

**1. INTRODUCTION**

The rapid expansion of digital technology has significantly transformed financial systems around the world. In India, digital payments infrastructure has grown phenomenally over the past decade, most notably with the expansion of the mobile cellular network. Banks and non-bank providers of payment systems are utilizing the rising mobile density and mobile internet users to offer payment services that are accessible over mobile phones and the internet. India has seen substantial growth in payments with the introduction of multiple payment systems. The RBI launched a number of initiatives in the middle of the 1980s and the beginning of the 1990s to introduce technology-based banking system solutions. The Electronic Clearing Services (ECS Credit) system was one such project that was created in 1990 to handle the bulk and repeated payment requirements of corporations and other organizations, such as salary, interest, dividend payments, etc. NPCI was established as an umbrella organisation for the retail payments system in India, under the direction and cooperation of the RBI and the Indian Banks' Association (IBA). It was established in December 2008 with the objective of working for the benefit of all member banks and their clients to develop the infrastructure necessary to run pan-Indian systems with high availability and scalability to handle rising retail electronic payment volumes, etc. One of the most important innovations in India's digital payment ecosystem is the Unified Payments Interface (UPI), developed by the National Payments Corporation of India (NPCI). UPI allows users to transfer money instantly between bank accounts through mobile applications without needing complicated bank details. The system operates 24 hours a day and supports peer-to-peer as well as merchant transactions. Digital payments have played an important role in promoting financial inclusion in India. Financial inclusion refers to the process of ensuring that individuals and businesses have access to useful and affordable financial products and services. Women, particularly in developing regions, have historically faced barriers to accessing formal financial services due to social, economic, and technological limitations.

In West Bengal, women play a crucial role in household financial management and small-scale economic activities such as self-employment, small retail businesses, and participation in self-help groups. With the increasing availability of smartphones and internet services, women in both urban and rural areas are gradually adopting digital payment systems. UPI has become one of the most widely used payment platforms due to its ease of use and accessibility. Many women now use digital payment applications for everyday transactions such as paying utility bills, purchasing groceries, transferring money to family members, and conducting small business transactions. However, despite the rapid growth of digital payments, several challenges remain. These include lack of digital literacy, limited smartphone ownership among women, concerns about online fraud, and poor internet connectivity in rural areas. This research paper aims to study the level of UPI usage among women in West Bengal and analyse how digital payment systems are contributing to women's financial empowerment and economic participation.

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## 2. REVIEW OF LITERATURE

Several studies have examined the role of digital payments in promoting financial inclusion and economic empowerment. Researchers have found that digital payment systems such as UPI significantly reduce transaction costs and increase financial accessibility. The ability to conduct financial transactions at odd hours is made possible for the rural population by digital payment applications, which give them a genuine sense of empowerment. The rural population's acceptance of this financial technology will have a major impact on the success of digital payments there (Sharma & Sharma, 2019). Users have a positive opinion about e-payments despite certain challenges with compatibility and standardization of security and interfaces. According to the respondents, it is quicker, easier to use, more affordable and cashless (Singh & Singh, 2022). The majority of respondents are familiar with mobile wallets and use them to make payments. The services offered by m-wallet gateways are adequate and choose m-wallets for the ability to make instant payments (Sujith et. al, 2019). The age and gender of consumers play an important role in the adoption of digital payments. They also found that the usage of digital payments does not depend on the income of the customers and the usage of digital payments depends on the customer's education. More Educated people are expected to have more favourable attitudes toward the adoption of innovations (Vally & Divya, 2018). Consumer perceptions and their intention to use digital payments might differ from culture to culture. Mobile payment penetration differs among countries because of their different economic, cultural, social, technological, and demographic features (Sahi et al., 2021). The perception of digital payment instruments affects the payment behaviour of an individual. Customers were seen to be willing to discount online fraud experiences in the face of higher convenience offered by digital payment modes. Digital payments adoption has been increased in line with the socio-economic development of the population (Shree et al., 2021).

Studies on digital financial services in India show that women are gradually adopting mobile banking and digital payment platforms. However, adoption rates remain lower among women compared to men due to socio-economic barriers and lower levels of digital literacy (Kafley & Chandrasekaran, 2019). Young women mostly utilize mobile banking services at a moderate level and there are notable disparities in the levels of usage of digital banking services among people (Shafeer, 2019). Research on digital payments in rural India highlights that many women rely on family members to operate mobile phones or digital payment applications. This dependency limits their ability to independently use digital financial services (Nayak, 2018). Studies focusing on e-payment suggest that digital payment adoption is higher in urban areas compared to rural regions. Urban women are more likely to use digital payment applications due to better internet access and higher levels of education (Singh, 2019). Some research also highlights the role of government initiatives in promoting digital payments. Programs such as financial literacy campaigns and the expansion of banking infrastructure have encouraged more people to use digital payment systems (Singh & Malik, 2019). Another important factor influencing digital payment adoption is the rise of small digital payment platforms that allow small merchants and vendors to accept digital payments. Women entrepreneurs in small businesses are increasingly using these platforms to receive payments from customers (Seethamraju & Diatha, 2019). Overall, existing literature indicates that digital payment systems have the potential to empower women financially, but structural barriers continue to limit widespread adoption.

## 3. OBJECTIVES OF THE STUDY

**The study intends to unveil the level of UPI usage among women in select districts of West Bengal. The following objectives are taken up for study by the researchers:**

1. To examine the extent of UPI usage among women in West Bengal.
2. To analyse the role of digital payments in promoting financial empowerment among women.
3. To identify challenges faced by women in using digital payment systems.

## 4. RESEARCH METHODOLOGY

### 4.1 Research Design

This study uses a descriptive research design to analyse the adoption of UPI among women in West Bengal. The research focuses on understanding patterns of digital payment usage and the factors influencing adoption.

### 4.2 Data Sources

The study is based on both primary and secondary data. Primary data include survey responses from women regarding their use of digital payment applications. Secondary data has been gathered from academic journals, governmental reports, financial sector analyses, news updates, and research publications pertaining to digital payments.

**4.3 Sample Size**

The data was collected through a structured questionnaire administered to 185 women respondents from selected districts of West Bengal. The selected districts include Kolkata, Howrah, and Purba Medinipur district. These districts represent a combination of urban and rural areas, allowing the study to capture a diverse perspective on UPI usage among women.

**4.4 Data Collection Methods**

Data has been collected using structured questionnaires that include questions related to frequency of UPI usage, purpose of digital transactions, level of digital literacy, access to smartphones and internet, security concerns related to digital payments.

**4.5 Data Analysis**

The collected data has been analyzed using statistical tools such as percentage analysis, frequency distribution, and descriptive interpretation. The findings are presented through tables and explanations to provide a clear understanding of the patterns of digital payment adoption among women.

**5. DATA ANALYSIS AND INTERPRETATION**

This chapter presents the analysis and interpretation of the primary data collected from women respondents regarding their usage of the Unified Payments Interface (UPI). The purpose of this chapter is to examine the level of awareness, usage patterns, preferences, and challenges faced by women while using digital payment systems.

**Table 1: Demographic and Income Profile of Respondents**

| Profile                        | Categorical variable | Frequency | Percentage (%) |
|--------------------------------|----------------------|-----------|----------------|
| <b>Age</b>                     | Below 25             | 30        | 16.22          |
|                                | 25-29                | 35        | 18.92          |
|                                | 30-34                | 36        | 19.46          |
|                                | 35-39                | 29        | 15.68          |
|                                | 40-44                | 28        | 15.14          |
|                                | 45 or above          | 27        | 14.58          |
| <b>Education Qualification</b> | Primary              | 34        | 18.38          |
|                                | Secondary            | 56        | 30.27          |
|                                | Graduate             | 63        | 34.05          |
|                                | Postgraduate         | 32        | 17.30          |
| <b>Area of Respondents</b>     | Kolkata              | 58        | 31.35          |
|                                | Howrah               | 61        | 32.97          |
|                                | Purba Medinipur      | 66        | 35.68          |
| <b>Monthly income</b>          | Below Rs 10000       | 53        | 28.65          |
|                                | Rs 10001-20000       | 65        | 35.13          |
|                                | Rs 20001-30000       | 38        | 20.54          |
|                                | Rs 30001-40000       | 12        | 6.49           |
|                                | Above Rs 40000       | 17        | 9.19           |
| <b>Nature of Residence</b>     | Rural                | 109       | 58.92          |
|                                | Urban                | 76        | 41.08          |

*Source:* Primary Survey

Table 1 presents the demographic profile of the respondents. The age distribution of respondents shows that the largest proportion of participants belongs to the 25–34 age group (38%). This indicates that young adult women are the most active users of digital payment systems. The below 25 age group accounts for 16.2%, which is also a significant proportion. Women in this age category are generally students or early-career professionals who are more comfortable using smartphones and digital applications. The 35–39 age group represents 15.68% of the respondents, suggesting moderate adoption among middle-aged women. However, the participation of older women decreases significantly, with only 15.14% in the 40–45 age group and 14.58% above 45 years. This pattern indicates that younger women are more inclined to adopt digital technologies, while older women may face challenges such as lack of digital literacy, limited exposure to technology, or hesitation in using mobile-based financial services. The educational background of respondents indicates that graduates form the largest group (34.05%), followed by secondary education (30.27%). This suggests that a considerable proportion of women in the study possess moderate to high levels of education, which may positively influence their awareness and use of digital payment systems. Respondents with primary education constitute 18.38%, indicating that women with limited formal education are also participating in digital transactions, though possibly with assistance from family members. The relatively smaller proportion of postgraduates (17.30%)

reflects the general educational distribution among the surveyed population. Overall, the findings highlight that education plays an important role in increasing digital literacy and encouraging the adoption of digital payment technologies. The respondents were from the Purba Midnapore (36%), Howrah (33%), and Kolkata (31%).

**5.1 Objective 1:** To examine the extent of UPI usage among women in West Bengal.

#### UPI Usage Among Women in West Bengal

Women in West Bengal are increasingly adopting digital payment systems for various financial activities. The adoption is particularly noticeable in urban areas such as Kolkata, where access to smartphones and internet services is higher. Many women use digital payment applications for everyday activities such as paying electricity bills, mobile recharges, grocery purchases, and online shopping. Self-help groups and micro-entrepreneurs have also started using digital payment systems to conduct financial transactions. For example, women running small businesses such as tailoring shops, food stalls, or handicraft businesses use digital payments to receive payments from customers. In rural areas, the adoption of UPI is slower but steadily increasing. Government initiatives and financial literacy programs have played a significant role in encouraging women to adopt digital payments.

**Table 2:** Frequency of UPI Usage

| Frequency    | Respondents | Percentage (%) |
|--------------|-------------|----------------|
| Always       | 46          | 24.86          |
| Often        | 78          | 42.16          |
| Sometimes    | 45          | 24.32          |
| Rare         | 16          | 8.66           |
| <b>Total</b> | <b>185</b>  | <b>100</b>     |

*Source:* Primary Survey

The results show that 42.16% of respondents often use UPI to make a transaction, making it the most common usage frequency. Additionally, 24.86% of respondents always use UPI for payment, indicating that digital payment systems have become a regular part of their daily financial activities. A smaller percentage of respondents reported rarely using UPI (8.66%). These respondents face barriers such as limited access to smartphones, lack of digital literacy, or concerns about online security. Overall, the findings demonstrate that UPI is widely used among women for regular financial transactions, particularly for small-value payments.

**5.2 Objective 2:** To analyze the role of digital payments in promoting financial empowerment among women.

#### Benefits of UPI for Women

UPI offers several advantages that contribute to women's financial empowerment.

- **Financial Independence:** Digital payments allow women to control their finances more independently. They can manage their bank accounts, transfer money, and make payments without relying on others.
- **Convenience and Time Saving:** UPI enables quick and easy transactions without visiting banks or ATMs. Women can complete financial transactions from their homes using smartphones.
- **Support for Women Entrepreneurs:** Women entrepreneurs benefit significantly from digital payments. Small businesses can accept payments digitally, making transactions easier and reducing the need to handle cash.
- **Transparency and Record Keeping:** Digital transactions provide a clear record of financial activities. This transparency helps women track their spending and manage household budgets effectively.
- **Access to Financial Services:** Using digital payment platforms connects women to formal banking systems. This can improve their eligibility for loans, savings schemes, and other financial services.

**Table 3:** Purpose of Using UPI

| Purpose          | Responses  |
|------------------|------------|
| Money Transfer   | 181        |
| Mobile Recharge  | 134        |
| Online Shopping  | 112        |
| Utility Bills    | 114        |
| Grocery Payments | 78         |
| <b>Total</b>     | <b>619</b> |

*Source:* Primary Survey

The analysis reveals that the most common purpose of using UPI is money transfer. This indicates that women frequently use digital payment platforms for transferring money between individuals. The second most common use is mobile recharge, followed by utility bill payments. Responses of using online shopping, reflecting the increasing popularity of e-commerce platforms. Few respondents primarily use UPI for grocery payments, which suggests that while digital payments are popular for money transfer, traditional methods may still be preferred for everyday household expenses. These findings highlight that UPI is particularly effective for facilitating convenient and quick transactions in daily life.

**Table 4: Impact of UPI on Financial Behaviour**

| Impact Area                      | Agree | Neutral | Disagree |
|----------------------------------|-------|---------|----------|
| Increased financial independence | 118   | 44      | 23       |
| Easier transaction process       | 131   | 30      | 24       |
| Reduced cash dependency          | 128   | 31      | 26       |

*Source:* Primary Survey

The table showed that UPI has a positive impact on financial behaviour and contributes to the financial empowerment of women in West Bengal. About 64% of respondents agree that digital payments have increased financial independence, showing that many women are now able to manage and control their finances without relying heavily on others. About 71% agree that UPI has made transactions easier, more convenient, and time-saving for women. Almost 69% of respondents agree that UPI has decreased reliance on cash. This suggests a shift toward safer financial procedures. The existence of neutral and opposing answers from respondents highlights issues like low digital literacy, limited access to smartphones or poor internet services, and a persistent reliance on cash. Overall, the data suggests that efforts are still required to address the obstacles, even though UPI is significantly improving women's financial inclusion and empowerment.

**5.3 Objective 3:** To identify challenges faced by women in using digital payment systems.

**Challenges Faced by Women in Using UPI**

Despite the advantages, several challenges continue to affect the adoption of digital payments among women.

- **Digital Literacy:** Many women lack the necessary digital skills to use mobile applications effectively. This is particularly common in rural areas where educational opportunities may be limited.
- **Smartphone Ownership Gap:** In many households, men are more likely to own smartphones than women. Even when women have access to phones, they may share devices with family members, limiting their independent use.
- **Security Concerns:** Fear of online fraud and cybercrime discourages some women from using digital payment platforms. Lack of awareness about safe digital practices increases vulnerability to scams.
- **Internet Connectivity:** Poor internet connectivity in rural areas makes digital transactions difficult. Reliable internet access is essential for the smooth functioning of digital payment systems.
- **Cultural and Social Barriers:** In some communities, women may have limited exposure to technology due to traditional gender roles and social norms.

**Table 5: Challenges Faced in Using UPI**

| Problem                    | Responses  |
|----------------------------|------------|
| Lack of Digital Knowledge  | 177        |
| Fear of Online Fraud       | 163        |
| Poor Internet Connectivity | 124        |
| Technical Issues           | 92         |
| No Smartphone Access       | 47         |
| <b>Total</b>               | <b>603</b> |

*Source:* Primary Survey

The data indicates that lack of digital knowledge is the most significant challenge faced by women when using UPI services. Another major issue is fear of online fraud, which reflects concerns about the safety of digital transactions. Poor internet connectivity also poses a significant barrier, particularly in rural and semi-urban areas. Technical issues such as application errors and transaction failures were reported by respondents, while few respondents reported lack of smartphone access as a challenge. These findings suggest that technological,

educational, and infrastructural barriers continue to affect the widespread adoption of digital payment systems among women.

## 6. FINDINGS AND CONCLUSION

Digital payment systems such as UPI have significantly transformed the financial landscape in India. This chapter presents the major findings derived from the analysis of data collected from women respondents regarding the use of the Unified Payments Interface (UPI) in West Bengal. The purpose of the study was to examine the level of awareness, usage patterns, and challenges faced by women while using UPI-based digital payment systems. The study highlights several key findings:

- UPI adoption among women is increasing rapidly in urban areas of West Bengal.
- Younger women are more likely to use digital payment applications compared to older women.
- Digital payments are commonly used for money transfer, household expenses and small business transactions.
- Digital literacy and smartphone ownership are major factors influencing adoption.
- Security concerns and lack of awareness remain significant barriers.

In order to encourage the expansion of e-payment systems, the study investigates the elements that affect users' capacity to adapt to digital payment systems. The adoption of digital payments has improved financial independence, convenience, and economic participation among women. However, challenges such as digital literacy gaps, smartphone ownership inequality, and security concerns continue to limit widespread adoption. Addressing these challenges requires coordinated efforts from government institutions, financial organizations, and community groups. By promoting digital education and expanding access to technology, policymakers can ensure that women fully benefit from the opportunities created by digital financial systems. Greater participation of women in digital financial systems can contribute to financial inclusion, economic empowerment, and social development. As digital technologies continue to evolve, empowering women with the knowledge and resources to participate in the digital economy will be essential for achieving inclusive growth. UPI has the potential to become a powerful tool for women's financial empowerment and inclusive economic development in West Bengal.

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