IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

# "A Study On Role Of Demographic Factor On The Adoption Of Digital Payment Among Rural Women"

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**Abstract**

The mode of payment shift from cash to click has led to remarkable success in the Indian economy. There are numerous factors that have been attributed to the success of adopting online payment transactions. In our nation, there are 48.4% females for every 51.6% males. The literacy rate of the country has reached 74.04 percent, where 82.14 percent of men and 65.46 percent of women can read and write. According to the internet usage statistics for January 2024, India recorded a total of 751.5 million users. The rural activities of the 700 million smart-phone users of India exceeded 425 million in January 2023. Statistically, in India, 48.4 percent of the population is female and 51.6 percent is male, although less than 32 percent of women own cell phones, whereas more than 60 percent of men own them. Unified Payment Interface (UPI) has played an important part in the tremendous growth seen in digital payments in India, with transaction numbers increasing from 2,071 crore during FY 2017–18 to over 22,831 crore during FY 2024–25. However, it is difficult to quantify women's participation in transactions through UPI because no data specific to women's usage of UPI services is available to the public. As reported by Aarti Deo, Engineering Director of Google Pay (GPay) in 2023, "Less than 30 percent of users of India's UPI were women." Recently, in 2024, "Only 25 percent of payment users in the country were women, and they comprised even fewer numbers in semi-urban and rural areas," according to Nalin Bansal, Chief of Corporate Business and Key Initiatives at NPCI. The number of UPI users in the country is less than 30 percent female.

The present research analyzed the development of cashless transactions in India since their emergence, analyzing the knowledge and use of digital payment systems and the demographic analysis of people involved in the process of cashless acceptance among rural women.

Key Words: Cashless transaction, Rural women, Digital payment system, UPI, Digital India ,Government initiative

## I. Introduction

The Indian digital payment system expanded substantially because of the demonetization policy decision. Prime Minister Narendra Modi announced this strategic decision on 8 November 2016 in India. On November 8, 2016, Prime Minister Narendra Modi made this calculated decision. On November 8, 2016, Prime Minister Narendra Modi made this calculated decision.This payment transformation in India pushed people toward digital payment systems .and He broadcasted that all 500- and 1,000-rupee notes would be demonetized. It constituted around 86% of the currency in circulation. This step had changed the mode of payment mode in India.

The aim of strengthening and enhancing the financial sector, Government of India actively promoting the adoption of digital payments by launching various initiative in India which has increased the adoption from 2,071 crore in Financial Year 2017–18 to 8,840 crores in Financial Year 2021–22 (Source: RBI, NPCI, and banks).

Digital payment methods including (IMPS), (BHIM-UPI) and (NETC) underwent exponential growth during the last five years to revolutionize digital payment processes by facilitating P2P and P2M transactions. The largest number of citizens preferred using BHIM UPI for digital payments which generated 803.6 crore transactions valued at ₹ 12.98 lakh crore during January 2023.The Indian digital ecosystem began absorbing swift adoption due to Government support in digital transformation while consumers adopted both rising internet usage and mobile phones as well as e-commerce

Government's push for digitization, increased internet and smartphone uses, and the rise of e-commerce are few factors have played the important role in the increasing the adoption of India's digital ecosystem. Digital technology has experienced significant nationwide promotion through Government initiatives like Made in India together with Startup India and Digital India which extended their reach beyond healthcare to cover education and agriculture.

## II. Digital Payment

**"Digital Payment is a method of payment which can be made by the use of Banking cards, USSD, AEPS, E-wallets, UPI, etc. Both payer and payee use digital mode in to send and receive money. No hard cash is used in this process but completed with the help of Internet or online. It is a very convenient way to make the payments."** (Gupta et al. (2020)

In order to facilitate the transition of the nation towards a digitally empowered economy, the Government of India has initiated the Digital India initiative.. The main objectives behind this flagship scheme is to create a "Faceless,

Paperless, Cashless" system. This initiative has significantly increased the adoption of digital payment systems across the nation, enhancing the digital ecosystem and reducing dependence on cash. (Kumari & Pavithra, 2018).The Prime Minister advocates for digital transactions with the motto, "Yes to Digital Payments, No to Cash." (The Economic Times).

“Digital India is a dream of the nation,” Prime Minister Shri Narendra Modi stated. In order to achieve this objective, he came up with an idea known as Pradhan Mantri Gramin Digital Saksharta Abhiyan in an attempt to ensure that six crore rural households in India become digitally literate. This program evaluates the digital literacy status of citizens of India, allowing them to be able to access and utilize digital devices, search online, and perform digital transactions. Studies have revealed that about 70% of Indians live in rural areas, whereas the remaining 30% dwell in urban or metropolitan cities, earning a living from white-collar jobs. Currently, in India, there are about 700 million smartphone users out of which 425 million are from rural areas. Over 50% use smartphones; thus, the percentage of internet users has risen by 45%.. As more and more digital payment methods are used, there is an imperative to overcome obstacles for rural women in India to gain equal access to financial services.This can be achieved through a combination of measures, such as the improvement of technological literacy, trust building, and overcoming various socio-cultural obstacles that limit usage.

Overcoming these obstacles will help not only empower rural women in India but also bring overall economic growth and financial inclusion to the country. Without consideration of the unique challenges faced by rural Indian women, no effective measures aimed at promoting the use of digital payments can be developed.

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## III. Background of the study

Pandey & Kushwaha (2026) conducted a survey on 468 rural women in Uttar Pradesh and Madhya Pradesh and found that facilitating conditions, social influence, and perceived security have significant influence on behavioral intention towards digital payments. Manrai et al. (2021) conducted research among 568 semi-rural women near Delhi and identified effort expectancy, habit, and facilitating conditions to be significant determinants that explained 72.6% of variation in usage. Singh & Dahiya (2024) studied 208 rural women in Delhi and found that Paytm, Google Pay, and PhonePe were mostly used by them, with factors such as perceived ease of use and perceived usefulness influencing their adoption while perceived risks and low self-efficacy acting as barriers to their use. Sindakis & Showkat (2024) conducted a study on 400 rural respondents in Odisha and surprisingly found that there was higher adoption of digital technologies among female respondents.

However, Maheshwari et al. (2025) emphasize existing problems, including lack of digital literacy, internet accessibility, and social barriers in Rajasthan, which prevent adoption despite government efforts such as Digital India.

## IV. Modes of Digital Payment

1. **UPI-**It stands for unified payment interface. Now a days UPI apps are more popular among people for digital payment. The most popular UPI apps are BHIM ,Google Pay, Paytm , mob wiki ,Yonoetc.Through UPI system, an individual can add multiple bank account into a single application**.** Merchant are required to have current account linked with UPI for receiving money from customers.
2. **Banking Cards**-It is another popular method for digital payment . It is also known as plastic money .It offer convenience and safety to individuals. An individual need to keep PIN Code secure . Customer can use debit cards for cash withdrawal and to make online payment . There is significant growth in the number of Debit card holders from 22.79 crore to 82.86crore during the financial year 2010-2011 to2019-2020 .Credit Card is like a short term loan provided by banks to customer. Customer can also use credit card for online payment.In India, Credit card was introduced by Andhra Bank in 1981.The no of Credit card holder has increased from 1.80 crore to 5.77 crore during the financial year 2010-2011 to2019-2020.
3. **USSD**-It stands for Unstructured Supplementary Service Data . This method is used by those individual who don't have access to internet services. Individual can make payment through USSD without Internet connection.*99# service offered by 51 banks and GSM service provider in 12 different language.
4. **AEPS**-According to NPCI data, AEPS has crossed more than 205 million **transaction.** AEPS is a bank led model which allows online interoperable financial transaction at PoS.Through this system customer can transfer money by aadhaar linked bank account.
5. **NEFT**-It stands for National Electronic Fund Transfer. It was launched in 2005 and is owned by RBI Through NEFT individuals, firms can electronically transfer funds from any bank branch to any individual, firm account. At the time of starting in November 2005, NEFT had only eight member banks. And now NEFT system has222 member banks and their 1,70,996 branches. Individual can make payment through NEFT 24*7 from December 2019.
6. **Real Time Gross Settlement (RTGS)**-RTGS was launched by RBI in March 2004.Through RTGS customers can make financial transactions between 7:00 am and 6:00 pm .For inter-bank payments from 7:00 am to 7:45 pm. Now RTGS is available for making transaction 24*7 hour with effect from December 14, 2020. India's RTGS was first payment system implementedISO20022standardform.
7. **IMPS**-It is another popular option for digital payment .IMPS system was launched in 2010.It offers 24*7 fast fund transfer facility. Through IMPS, individuals can send or receive money from anywhere and anytime.

## V. India's Top 5 Digital Payment Applications

- PhonePe: This popular app lets you send and receive money, pay bills, and recharge mobile phones. It supports UPI transactions and offers various financial services.

- Google Pay: With this app, users can easily send money, make payments, and pay their bills. Google Pay uses UPI for quick purchases and often provides rewards.

- Paytm: Paytm is a feature-packed app that includes a digital wallet, bill payment options, and shopping. Users can also access Paytm Bank services for savings and investments.

- Amazon Pay: Built into the Amazon shopping app, Amazon Pay allows users to pay bills, recharge phones, and make purchases using their Amazon account balance.

- BHIM App: NPCIcreated the safe, ad-free, and incredibly dependable BHIM (Bharat Interface for Money) app.
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## VI. Objectives:

1. Explore the evolution of electronic payment in India
2. Investigate the awareness level and influence on the uptake of digital payment systems among women.
3. To analyse the connection between demographic factor and adoption of digital payment among rural women.
4. To determine the preferred payment methods of rural women.

## VII. Hypothesis:

H 1:There is no association between education and adoption of digital payment system.

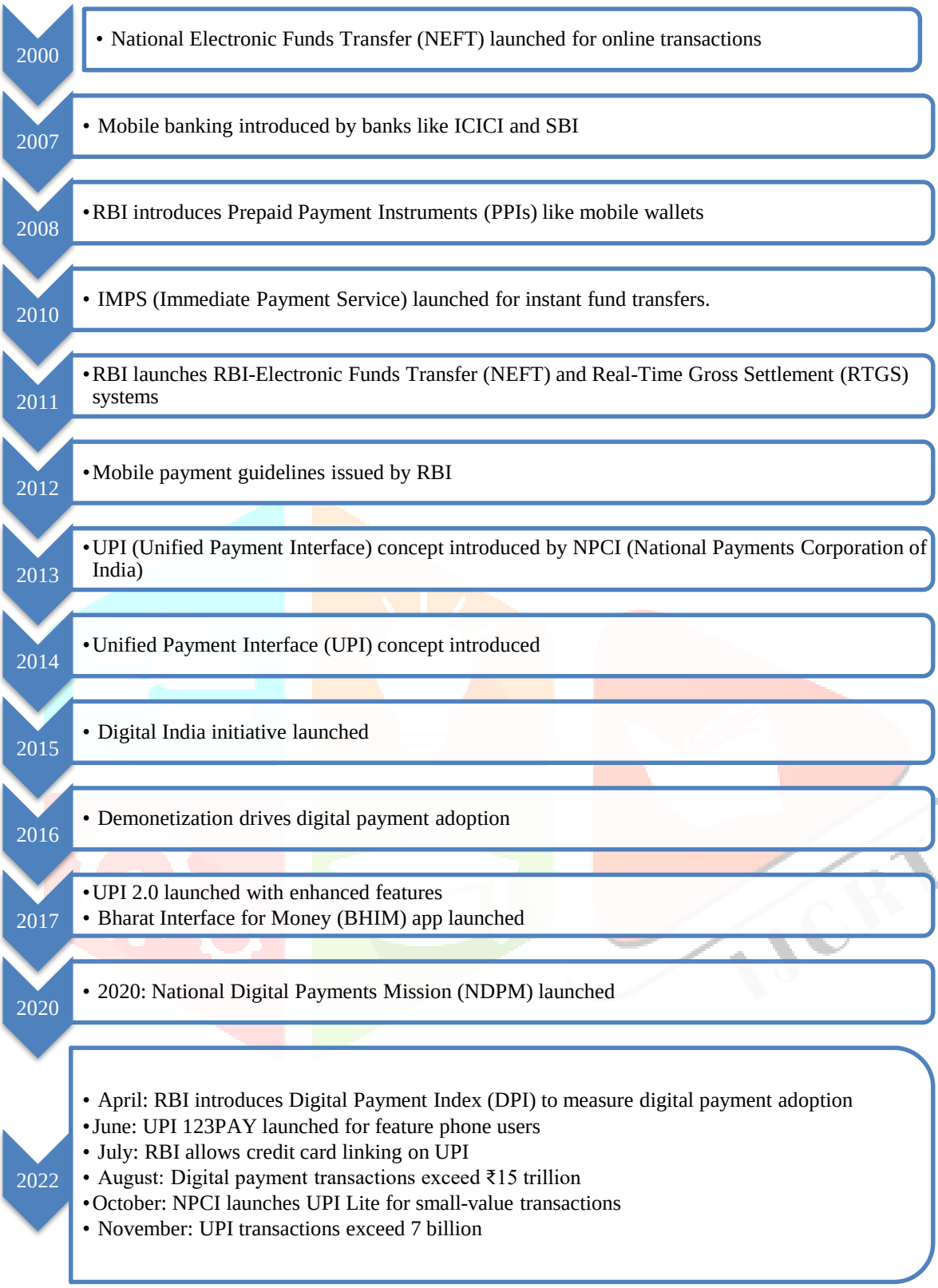
H2: There is no correlation of demographic factors on the adoption of digital payment among rural women.

H3: There is no significant relationship between Awareness and the adoption of the digital payment system among rural women.

## VIII. Methodology

Both primary data from direct observations and secondary data from existing sources serve as the foundation for this study. battleopic.info participants were asked to complete a survey that yielded 206 responses. Online platforms along with periodicals newspapers and publications contributed second-hand data to strengthen the research reliability. This research utilized convenience sampling as its non-probability sampling approach.

## IX. Timeline of digital payment in India



## X. Analysis:

We have **utilized** the frequency test to **examine** the **demographic** profile of the rural women.

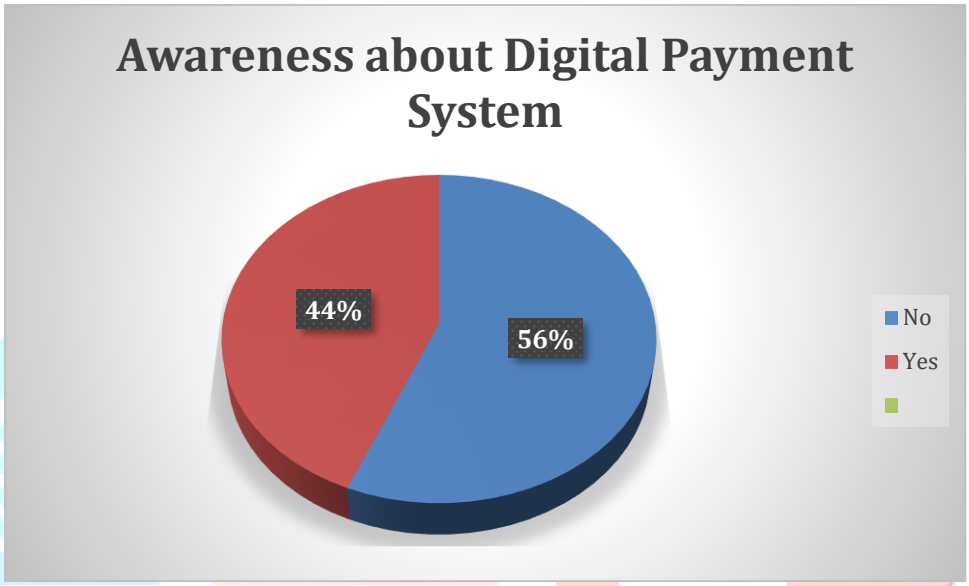
**Table 1 : Demographic Profile of Rural Women**

| Particular | Frequency | Percentage |
|---|---|---|
| **Residence** | | |
| Gorakhpur | 81 | 39.3% |
| Prayagraj | 91 | 44.2% |
| Sitapur | 34 | 16% |
| **Age** | | |
| 18-28 | 63 | 30.6% |
| 29-38 | 30 | 14.6% |
| 39-48 | 107 | 51.9% |
| 49-58 | 6 | 2.9% |
| **Education** | | |
| $10^{th}$ | 49 | 23.8% |
| $12^{th}$ | 43 | 20.9% |
| Graduation | 104 | 50.4% |
| Post Graduation | 10 | 4.9% |
| **Occupation** | | |
| Homemaker | 132 | 64.1% |
| Student | 60 | 29.1% |
| Business | 7 | 3.4% |
| Private Job | 7 | 3.4% |
| **Marital Status** | | |
| Married | 145 | 70% |
| Unmarried | 61 | 29.6% |
| **Annual Family Income** | | |

| | | |
|---|---|---|
| Less than 2 lakh | 33 | 16% |
| 2 Lakh to 5 Lakh | 150 | 72.8% |
| 5 Lakh to 10 Lakh | 15 | 7.3% |
| 10 Lakh to 20 Lakh | 8 | 3.9% |

SOURCE-Primary Data

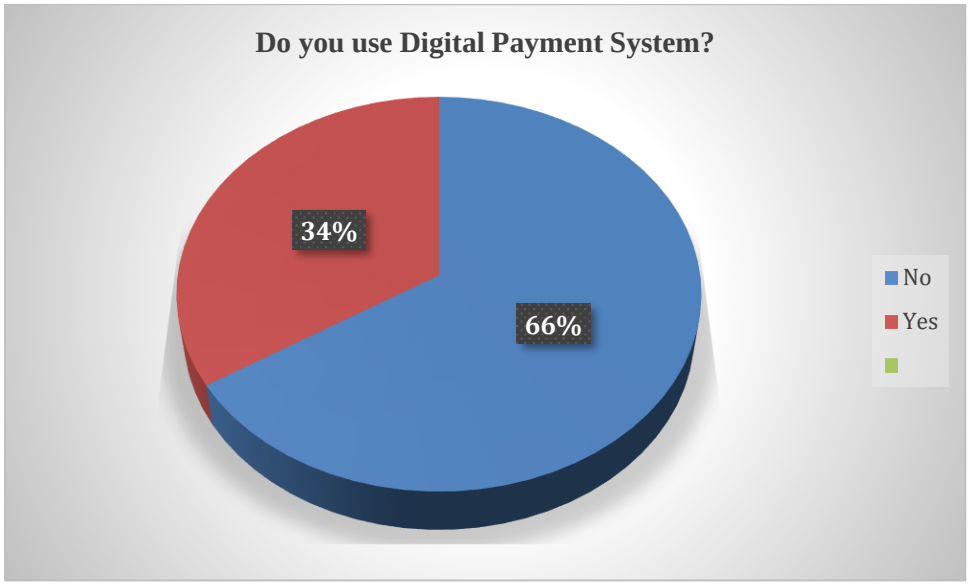
**Figure- 01**




Source-Primary Data Collected from 206 respondent.

**Interpretation :** Out of 206 respondent 44% respondent are aware and 56% are not aware about digital Payment System

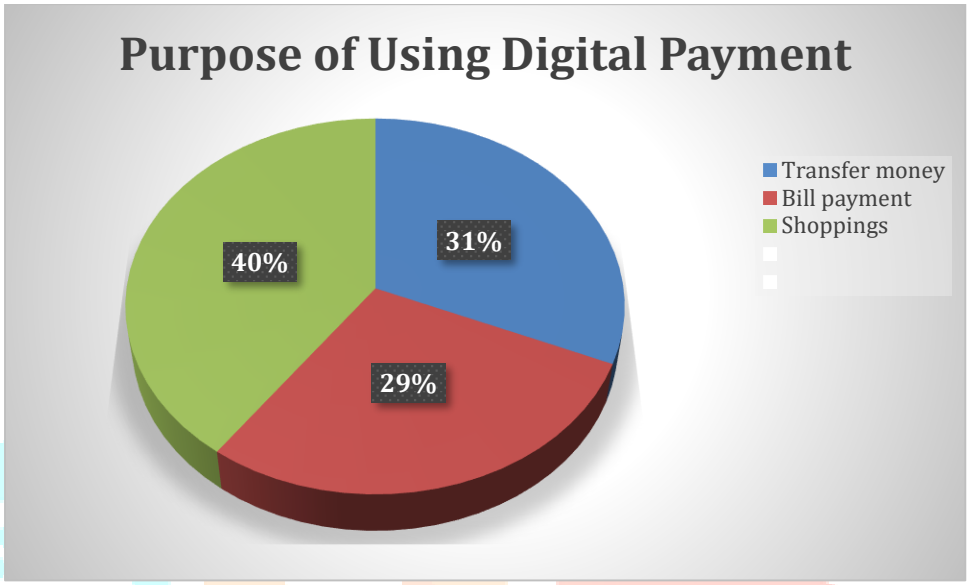
**Figure- 02**




Source-Primary Data Collected from 206 respondent

**Interpretation:** Out of 206 respondent only 34% percent respondent are using digital payment system and 66% respondent have not adopted digital payment system till now.

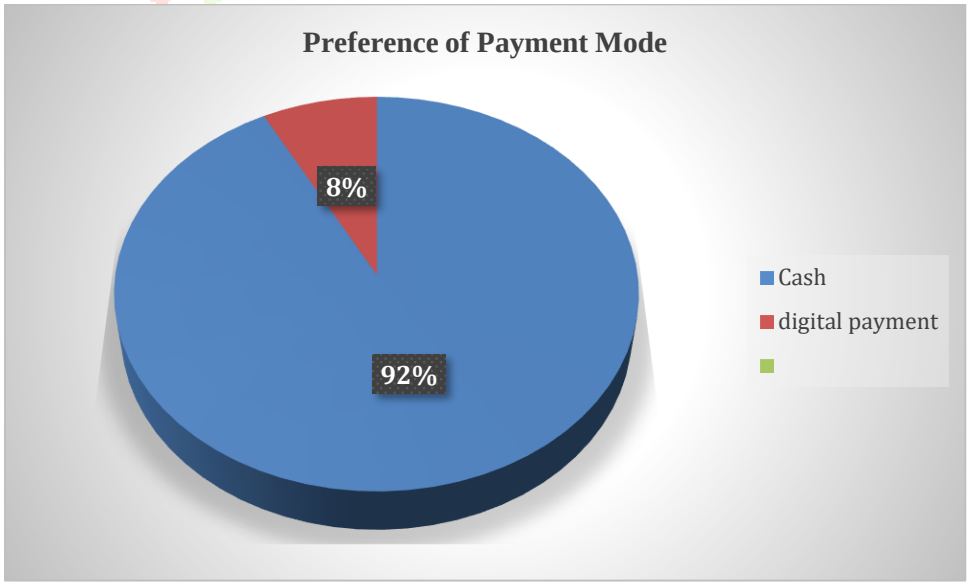
**Figure-03**




Source-Primary Data Collected from 206 respondent

**Intrepretation:**31% rural women using DPS for Transfers money and 29% rural women using DPS for Bill payment and 40% rural women using DPS for shopping.

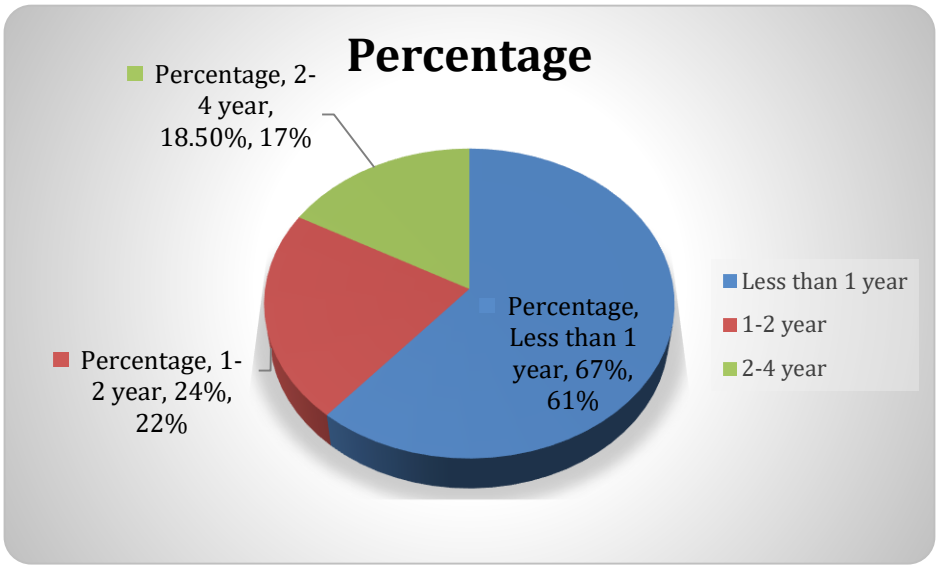
**Figure -04**




Source-Primary Data Collected from 206 respondent

**Intrepretation:**92 % rural women preference is cash over Digital payment

**Figure -05**




Source-Primary Data Collected from 206 respondent

**Interpretation:** A significant majority (61%) of the rural women using DPS less than 1 year of experien 22% rural women respondent have been using DPS from 1 and 2 years .Only 17% rural women have been using DPS from 2-4 years .

**Hypothesis Testing**

**Hypothesis 1**:There is no association between education and adoption of digital payment system

**Findings:**

Categorical data evaluation employed Chi-Square assessment up to a 5% significance cut-off to analyse variable correlations. Our assessment of the Null Hypothesis serves with approximately 95 accuracy to determine acceptance or rejection. Values below 0.05 p-value reject the null hypothes yet values exceeding this threshold fail to produce hypothesis rejection. Our initial examination te the relationship between educational attainment and public acceptance of digital payment method Data from the chi-square table provides evidence to reject the Null Hypothesis because our p-valu (p-value=0.001) remains beneath 0.05. Student education correlates to the adoption rate of the digi payment platform.

**Table02: Role of Education in adoption of Digital Payment**

| **Education * Use Digital Payment System Cross tabulation** | | | | |
|---|---|---|---|---|
| Count | | | | |
| | | Do you use Digital Payment System? | | Total |
| | | No | Yes | |
| Education | 10 | 41 | 8 | 49 |
| | 12 | 35 | 8 | 43 |
| | Graduation | 53 | 51 | 104 |
| | Post Graduation and above | 7 | 3 | 10 |
| Total | | 136 | 70 | 206 |

| **Chi-Square Analysis** | | | |
|---|---|---|---|
| | Value | df | Asymptotic Significance (2-sided) |
| **Pearson's $\chi^2$ Test** | 21.921[a] | 3 | <.001 |
| **LR test** | 22.768 | 3 | <.001 |
| **Test for Linear Association** | 14.803 | 1 | <.001 |
| **Total valid record** | 206 | | |

**Hypothesis 2**:There is no association between demographic factor on adoption of digital payment system

**Table-03**

| Model Summary | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .715[a] | .511 | .502 | .335 |

The value of R Square value is .511 which indicates that the demographic factor (occupation, annual family income, age, and marital status) causes 51% change in adoption of digital payment system among rural women.

**Table-04**

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 23.628 | 4 | 5.907 | 52.571 | <.001[b] |
| | Residual | 22.585 | 201 | .112 | | |
| | Total | 46.214 | 205 | | | |

**Interpretation:** As Anova result shows that p value 0.001 which is less then 0.05,Hence we reject the null hypothesis. Hence we say that there is significant relations between Demographic factor of rural women in adoption of digital payment system.

| **2.Age** | | | | |
|---|---|---|---|---|
| **Count** | | | | |
| | | **6- Do you use Digital Payment System?** | | **Total** |
| | | **No** | **Yes** | |
| **2.Age** | **18-28** | **11** | **52** | **63** |
| | **29-38** | **27** | **3** | **30** |

| | | | | |
|---|---|---|---|---|
| | 39-48 | 92 | 15 | 107 |
| | 49-58 | 6 | 0 | 6 |
| Total | | 136 | 70 | 206 |

| Chi-Square Tests | | | |
|---|---|---|---|
| | Value | df | Asymptotic Significance (2-sided) |
| Pearson's $\chi^2$ Test | 96.003[a] | 3 | <.001 |
| LR Test | 99.462 | 3 | <.001 |
| Test for linear Association | 77.893 | 1 | <.001 |
| Total Valid Record | 206 | | |

| Annual Family income | | | | |
|---|---|---|---|---|
| Count | | | | |
| | | 6- Do you use Digital Payment System? | | Total |
| | | No | Yes | |
| Annual Family income | Less than 2 lakh | 25 | 9 | 34 |
| | 2 | 93 | 53 | 146 |
| | 5 lakh to 10 lakh | 11 | 7 | 18 |
| | 10 lakh to 20 lakh | 7 | 1 | 8 |
| Total | | 136 | 70 | 206 |

| **Chi-Square Tests** | | | |
|---|---|---|---|
| | **Value** | **df** | **Asymptotic Significance (2-sided)** |
| Pearson's $\chi^2$ Test | **3.044[a]** | **3** | **.385** |
| **LR** | **3.371** | **3** | **.338** |
| Test for Linear Association | **.000** | **1** | **1.000** |
| Total valid record | **206** | | |

| **5-Occupation** | | | | |
|---|---|---|---|---|
| **Count** | | | | |
| | | **6- Do you use Digital Payment System?** | | **Total** |
| | | **No** | **Yes** | |
| **5-Occupation** | **Homemaker** | **118** | **14** | **132** |
| | **Student** | **10** | **50** | **60** |
| | **Business** | **5** | **2** | **7** |
| | **Private Job** | **3** | **4** | **7** |
| **Total** | | **136** | **70** | **206** |

| **Chi-Square Tests** | | | |
|---|---|---|---|
| | **Value** | **df** | **Asymptotic Significance (2-sided)** |
| Pearson's $\chi^2$ Test | **99.057[a]** | **3** | **<.001** |
| LR test | **102.765** | **3** | **<.001** |
| Test for Linear Association | **37.058** | **1** | **<.001** |
| Total valid record | **206** | | |

**Hypothesis 3:There is no association between awareness and adoption of digital payment system.** The p-value indicates that the correlation is statistically significant. Higher awareness of digital payment systems is strongly associated with higher usage rates. This implies that initiatives aimed at increasing awareness (such as education and marketing) could lead to increased adoption of digital payment methods.

**Table-05**

| **Correlations** | | | |
|---|---|---|---|
| | | Awareness about Digital Payment System | Use Digital Payment System |
| Are you aware about Digital Payment System | Pearson Correlation | 1 | .732** |
| | Sig. (2-tailed) | | <.001 |
| | N | 206 | 206 |
| 6- Do you use Digital Payment System? | Pearson Correlation | .732** | 1 |
| | Sig. (2-tailed) | <.001 | |
| | N | 206 | 206 |

## I. Conclusion

By working together, we can create an atmosphere that encourages rural women to use digital payments, therefore boosting their economic engagement and empowerment. For changing the scenario of digital payment in rural India .Training programme is required for rural women to make comfortable them in using technology .training programs will help to teach them the basics of digital payments, making it friendly for them to adopt .Some societal norm also restrict rural women to embrace technology. Involving local leaders to promote the benefits of digital payments can help shift these attitude.

Government should increase the awareness about security features and share positive stories from others who have successfully used DPS method to motivate rural women towards adoption. The price of data plans and transaction fees might be prohibitive even in cases when devices are readily available. Offering free or heavily discounted data plans or no-cost transactions for specific services may promote increased use.

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