Social Science Journal for Advanced Research *Peer Reviewed and Refereed Journal*
ISSN (Online): 2583-0074
Volume-4 Issue-5 || September 2024 || PP. 97-102 DOI: 10.5281/zenodo.13855639

A Study on the Adoption of Digital Payments in Western UP from the Consumer's Perspective

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Received: 24-08-2024	Revised: 12-09-2024	Accepted: 27-09-2024

ABSTRACT
Demonetization led to a significant surge in digital payments in India. Government initiatives like Digital India, combined with the growing use of mobile phones and the internet, have contributed to the rapid expansion of digital payment adoption. This shift towards digital transactions enhances transparency, strengthening the nation's economy. Recent developments in payment systems, such as digital wallets, UPI, and BHIM apps, have further facilitated the transition to digital payments. The objective of this research is to examine the positive impact of payment system digitization. Specifically, it analyzes customer adoptionn levels of these systems.

Keywords: *adoption, digital payment, consumer perspective*

I. INTRODUCTION

The Digital India initiative is the Indian Government's flagship program aimed at transforming India into a digitally empowered nation. One of its key goals is to promote a "Faceless, Paperless, Cashless" society. As part of these reforms, Prime Minister Narendra Modi's demonetization of high-value Rs.500 and Rs.1000 notes in November 2016, along with the launch of the Digital India initiative in 2015, has greatly accelerated the growth of digital payments in the country. Government efforts like BHIM and UPI have further supported the transition and rapid adoption of digital payment systems.

Digital payments refer to electronic consumer transactions at point-of-sale (POS) for goods and services through internet banking, mobile banking via smartphones, or card payments. This process typically follows four key phases: 1. Registration, 2. Invoicing, 3. Payment selection, and 4. Payment confirmation. The system encompasses three main electronic payment instruments: cash, cheques, and cards. Following demonetization, the e-commerce sector has seen a shift away from Cash on Delivery (COD), with alternative methods like Card on Delivery, Net Banking, Debit Card, and Credit Card gaining prominence. This move is positively impacting India's e-commerce industry by encouraging cashless transactions.

To further promote cashless transactions and shift towards a less-cash economy, various digital payment modes are now widely available across the country.

Debit/Credit Cards are suitable for both online and offline merchant transactions, with the transaction limits set by the card issuer. To process a payment, details such as the card number, CVV, and expiry date are required. The costs involved include up to 0.75% for debit card transactions below Rs 2,000 and up to 1% for transactions above Rs 2,000, while credit card transactions typically incur a fee of around 2.5%.

RTGS/NEFT are ideal for high-value online transactions. RTGS has a minimum transaction limit of Rs2 lakh, with no upper limit, whereas NEFT allows transfers from Rs1 up to Rs10 lakh. These transactions require details such as account number, password, beneficiary registration, and IFSC code. The costs are up to Rs55 per RTGS transaction and up to Rs25 for NEFT.

IMPS is best suited for instant money transfers, with a daily transaction limit of Rs2 lakh. The required details include the account number, password, beneficiary registration, and IFSC code. The cost for IMPS transactions ranges from Rs5 to Rs15, depending on the transaction amount.

UPI (Unified Payment Interface) is designed for instant transfers, with a transaction limit of Rs 1 lakh. To initiate a transfer, users need the recipient's Virtual Payment Address (VPA) and their m-Pin. The cost per transaction is minimal, typically less than 50 paise.

USSD (Unstructured Supplementary Service Data) is suitable for feature phones that do not have internet connectivity, with a transaction limit of Rs5,000. Users only need to provide their Aadhaar number and the IFSC code assigned by their bank upon registration. Costs are determined by the telecom operator.

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E-Wallets are ideal for small-ticket transactions, allowing a monthly transaction limit of Rs 20,000, which can increase to Rs 1 lakh for KYC-compliant wallet holders. The only required detail is the login ID. Costs are incurred only when transferring money from the wallet to a bank account.

II. REVIEW OF LITERATURE

Sanghita Roy and Dr. Indrajit Sinha (2014) highlighted the significant growth of the e-payment system in India, although they noted that much work remains to be done to enhance its adoption, with 90% of transactions still conducted in cash. Utilizing the Technology Acceptance Model for their study, they identified four key factors—innovation, incentives, customer convenience, and legal framework—that strengthen the e-payment system.

E-payment systems serve as crucial mechanisms for individuals and organizations, offering a secure and convenient way to make payments online, while also acting as a gateway to technological advancements in the global economy (Slozko & Pello, 2015).

In their research paper titled "A Study on Factors Influencing Consumer Adoption of Internet Banking in India," Rakesh H. M. and Ramya T. J. (2014) examined the determinants of internet banking adoption. They found that perceived reliability, perceived ease of use, and perceived usefulness significantly influence consumer acceptance of internet banking. To promote the adoption of internet banking services, it is essential for experts to emphasize the benefits of these services and enhance awareness to capture consumer interest.

Kartikeya Bolar (2014), in his research paper titled "End-user Acceptance of Technology Interface in Transaction-Based Environment," emphasized the importance of understanding customer evaluations of technology interfaces. He argued that creators and investors in technology need insights into customer perceptions based on various features and quality dimensions to make informed strategic decisions that enhance technology interfaces and improve competitive positioning.

Nitsure (2014) observed that developing countries like India face challenges in adopting e-banking initiatives primarily due to limited dissemination of information technology. His paper pointed out issues such as security concerns, regulatory challenges, and management difficulties. Furthermore, Nitsure warned of a potential digital divide in India, where economically disadvantaged populations risk being excluded from both internet access and the financial system.

Balazs Vinnai, General Manager of Digital Channels at Misys (April 25, 2016), stated that it is crucial for banks to integrate new digital channels into a cohesive strategy. He advocated for a transition from first-generation to second-generation digital banking, where digital channels shift from a supportive role to becoming the primary means of sales and communication for banks. Vinnai acknowledged that reengineering processes around customer needs is a complex task, but he stressed that embracing digital banking is essential for banks to remain competitive and relevant in today's market.

III. OBJECTIVES OF THE STUDY

1. To assess how the age of respondents influences their usage of digital payments.
2. To evaluate the effect of customers' educational backgrounds on their adoption of digital payment methods.
3. To investigate the relationship between customers' income levels and their utilization of digital payments.

IV. HYPOTHESES

H01: Customers' age has no significant effect on the usage of digital payments.
H02: Customers' income level does not significantly impact their usage of digital payments.
H03: Customers' education level has no significant influence on the usage of digital payments.

V. RESEARCH METHODOLOGY

The study aims to gather data on the adoption of digital payment systems in India, with a focus on Western Uttar Pradesh. A sample size of 100 respondents was selected through convenience sampling. Data was collected using structured questionnaires, and the responses were analysed using simple percentage analysis and the Chi-square test.

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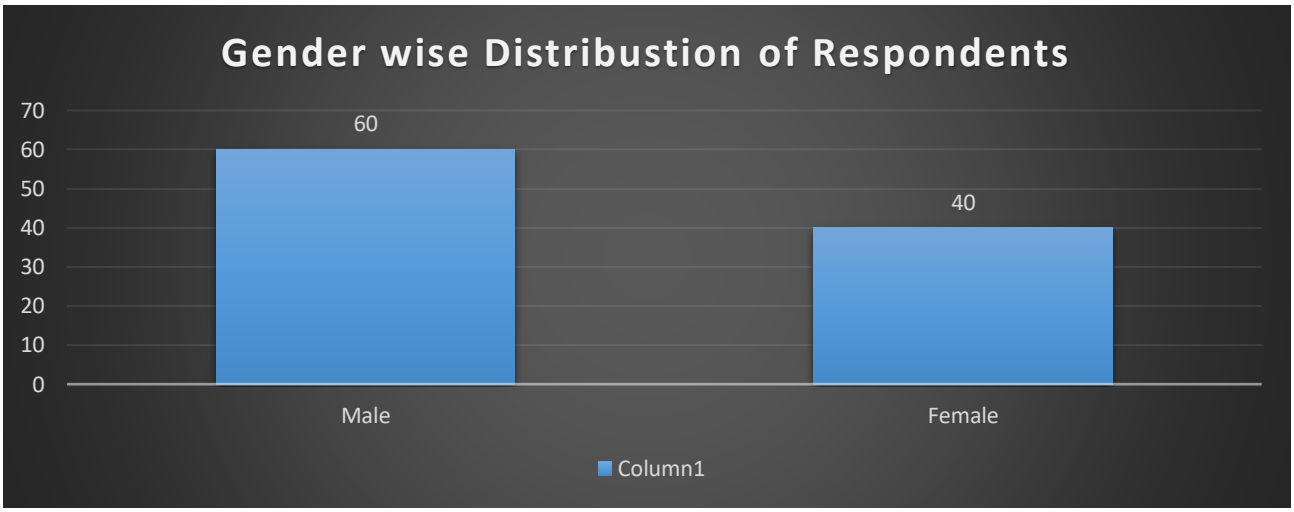
VI. ANALYSIS AND DISCUSSION

Table 1: Gender wise Distribution of respondents

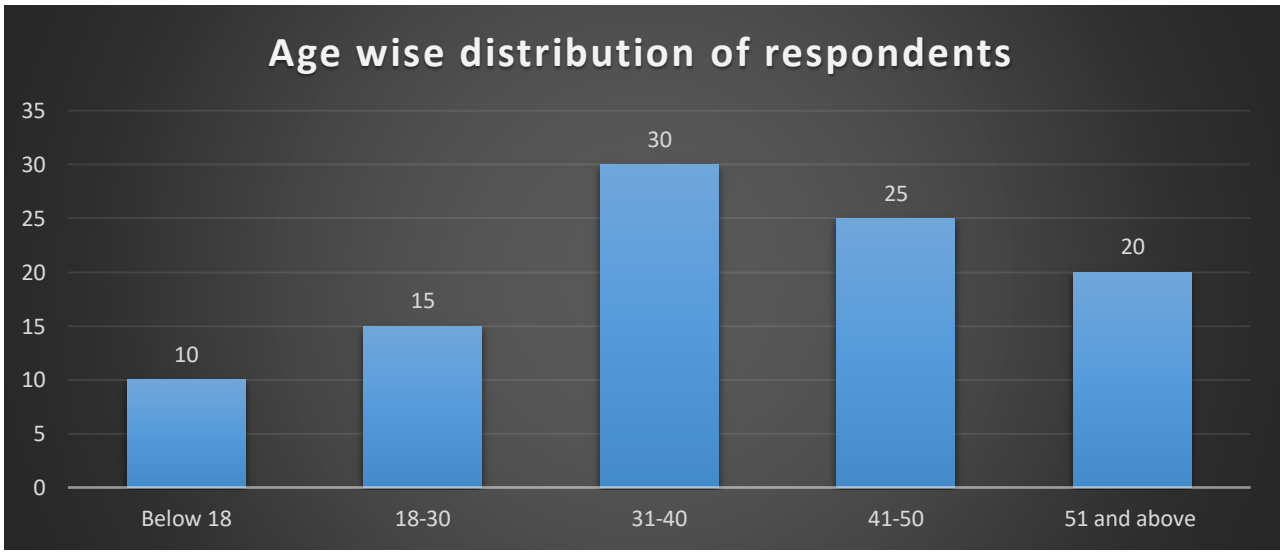
	Frequency	Percentage
Male	60	60
Female	40	40
Total	**100**	**100**



The majority of respondents, 60%, were male, while only 40% were female, and engaged in digital banking. However, previous studies suggest that gender does not significantly influence the adoption of technology in the banking sector.

Table 2: Age wise Distribution

Age	Frequency	Percentage
Below 18	10	10
18-30	15	15
31-40	30	30
41-50	25	25
Above 51	20	20
Total	**100**	**100**



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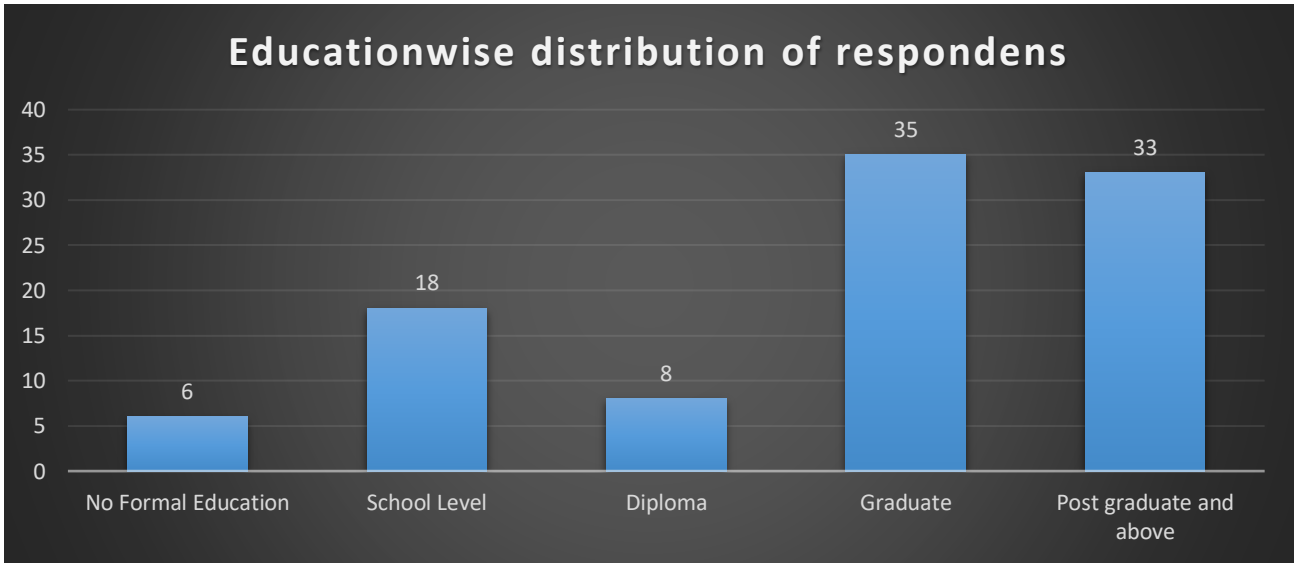
The table above presents the demographic factors of bank customers. It indicates that 30% of respondents fall within the age group of 31–40 years, while 25% are aged 41–50 years. Only 10% of respondents are below 18 years, and 20% are above 51 years.

Table 3: Educational Status wise Distribution

Education	Frequency	Percentage
No Formal Education	06	06
School Level	18	18
Diploma	08	08
Graduate	35	35
Post graduate and above	33	33
Total	**100**	**100**



The table above indicates that 35% of respondents are graduates, 33% are postgraduates, 18% have completed school-level education, and 6% have no formal education.

Table 5: Income (per month) Status wise Distribution

Income	Frequency	Percentage
>10000	12	12
10001-20000	14	14
20001-30000	40	40
30001-40000	23	23
40001 and above	11	11
Total	**100**	**100**

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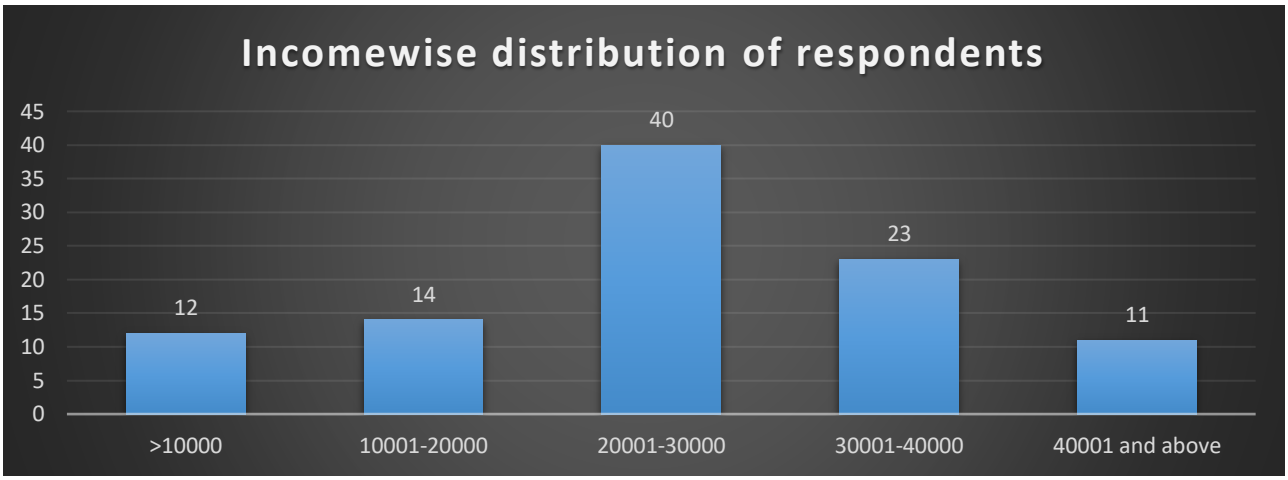

The above table interpret that 40% respondents were having 20001 to 30000 income group, 23% were 30001-40000, 14% were between 10001 to 20000. The least were below 10000 which is 12%.

Hypothesis Testing using Chi-Square Test

H01: Customers' age has no significant effect on the usage of digital payments.

Impact of age on technology adoption	**Age (years)**						**Chi-square**	**df**	**P value**
	Below 18	**18-30**	**31-40**	**41-50**	**51 & Above**	**Total**			
Yes	4.12	14.56	12.98	15.97	5.12	52.75	11.173	3	0.004*
No	6.40	12.97	11.58	06.32	9.98	47.25			
Total	10.52	27.53	24.56	22.29	15.1	100.00			

Based on the table, it is observed that with a p-value of less than 0.05, age plays a significant role in the adoption of digital payments, indicating a positive correlation between age and the likelihood of adopting digital payment methods.

H02: Customers' income level does not significantly impact their usage of digital payments.

Income of customer impact the usages technology	**Age (years)**						**Chi-square**	**df**	**P value**
	Below 10000	**10001-20000**	**20001-30000**	**30001-40000**	**40001& above**	**Total**			
Yes	3.15	13.96	11.68	16.77	4.91	50.47	9.873	3	0.004*
No	5.83	15.77	10.58	09.62	7.73	49.53			
Total	8.98	29.73	22.26	26.39	11.64	100.00			

Based on the table, it is observed that with a p-value of less than 0.05, income plays a significant role in the adoption of digital payments, indicating a positive correlation between income and the likelihood of adopting digital payment methods.

H03: Customers' education level has no significant influence on the usage of digital payments.

Education of customer impact the usages technology	**Age (years)**						**Chi-square**	**df**	**P value**
	No formal education	**School level**	**Diploma**	**UG**	**PG**	**Total**			
Yes	4.25	15.76	14.98	15.67	14.91	65.57	19.773	3	0.001*
No	5.83	8.33	7.53	6.55	6.29	34.43			
Total	10.08	24.09	22.51	22.22	21.2	100.00			

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The table indicates that education significantly impacts the adoption of digital payments, with a p-value of less than 0.001. This suggests a positive correlation between education and the likelihood of adopting digital payment methods.

VII. CONCLUSION

The study explores the impact of adopting digital payments on consumers in India's banking sector. The findings provide valuable policy insights into strategies that can promote the expansion of cashless transactions in the country. The results highlight that the integration of digital payment technologies has enhanced the performance of the banking sector and supported the goal of a cashless economy. The study underscores the importance of raising awareness about the optimal use of technology. Banks should implement effective initiatives to increase awareness regarding the efficient use of digital tools and ensure security in digital transactions. In conclusion, the analysis demonstrates that age, income, and education all play significant roles in the adoption of digital payments, as indicated by p-values of less than 0.05 and 0.001. There is a positive correlation between these factors and the likelihood of adopting digital payment methods, suggesting that individuals who are older, have higher income levels, or possess higher education are more likely to embrace digital payment technologies. This highlights the importance of targeting these demographic factors when promoting the adoption of digital payments.

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