Challenges in Adopting A Cashless Economy: A Study of Technological and Socio-Economic Barriers in Uttar Pradesh

Ms. Aarti
Research Scholar
Dept. of Economics
DAV College,
Bulandshahr
Email:aartichauhan0293@gmail.com

Dr. Rajeev Sirohi
Professor
Dept. of Economics
DAV College
Bulandshahr

Abstract

The transition towards a cashless economy has been promoted in India to enhance transparency, efficiency, and financial inclusion. The present study aims to examine the ***key barriers to adopting a cashless economy in Uttar Pradesh****, with special reference to* ***Lucknow city.*** *The study is* ***descriptive and analytical in nature****and is based on* ***primary data*** *collected from* ***95 respondents*** *selected through a* ***non-probability convenience sampling technique.*** *Data were gathered using a* ***structured questionnaire*** *covering awareness, usage patterns, perceived benefits, and challenges associated with cashless transactions. The collected data were analyzed using* ***simple percentage analysis****. The findings reveal that while a majority of respondents perceive cashless payment systems as* ***convenient, time-saving, and transparent****, significant challenges persist.* ***Poor internet connectivity, lack of digital literacy, fear of cyber fraud, low-income levels, and resistance to shifting from cash-based transactions*** *were identified as the major technological and socio-economic barriers. The findings provide useful insights for policymakers, financial institutions, and stakeholders in addressing the challenges associated with digital payment adoption.*

Keywords

Cashless Economy, Digital Payments, Technological Barriers, Socio-Economic Challenges

Reference to this paper should be made as follows:
Received: 14-01-26
Approved: 24-02-26

Ms. Aarti
Dr. Rajeev Sirohi

Challenges in Adopting A Cashless Economy: A Study of Technological and Socio-Economic Barriers in Uttar Pradesh

RJPP Oct.25-Mar.26,
Vol. XXIV, No. I,
Article No. 09
Pg. 086-095
Similarity Check - 08%

Online available at:
https://anubooks.com/journal-volume/rjpp-mar-2026-vol-xxiv-no1--270

https://doi.org/10.31995/rjpp.2026.v24i01.009

Introduction

The concept of a **cashless economy** has gained significant attention globally, particularly in developing countries like India, where the reliance on cash transactions has traditionally been high. A cashless economy refers to a system where financial transactions are conducted electronically rather than using physical currency. The adoption of digital payment systems is considered a crucial step towards **enhancing transparency, reducing corruption, improving efficiency, and promoting financial inclusion**. In recent years, the Indian government has initiated several measures, including **demonetization, promotion of digital wallets, and online banking initiatives**, to encourage citizens and businesses to shift from cash-based to cashless transactions.

Despite these initiatives, the transition to a fully cashless economy faces several challenges, particularly in regions with diverse socio-economic and technological conditions. Factors such as **low digital literacy, poor internet connectivity, lack of access to smartphones and banking facilities, and fear of online fraud** continue to hinder widespread adoption of digital payment systems. Additionally, behavioural and cultural factors, such as the habitual preference for cash and distrust of electronic systems, also play a significant role in limiting the acceptance of a cashless framework.

Lucknow, the capital city of Uttar Pradesh, presents a unique case for studying the adoption of a cashless economy. The city has a **heterogeneous population** comprising people from varied educational, occupational, and income backgrounds. This diversity makes Lucknow an ideal location to examine both the **technological barriers and socio-economic challenges** faced by individuals and businesses in adopting cashless payment methods. Understanding these challenges is critical for policymakers and financial institutions to design strategies that can accelerate the adoption of digital payments and ensure an inclusive cashless economy.

The present study, therefore, aims to investigate the **awareness, usage patterns, perceived benefits, and challenges** associated with cashless transactions among residents of Lucknow. By analyzing both technological and socio-economic barriers, the study seeks to provide insights into the factors that influence the adoption of digital payment systems. The findings are expected to guide policymakers, financial institutions, and other stakeholders in **addressing obstacles and promoting sustainable growth of a cashless economy** in Uttar Pradesh and similar contexts.

Review of Literature

Zargar, Nasir et al., (2023). A growing number of countries are moving toward cashless systems. When compared to traditional cash payments, cashless transactions offer faster processing times, greater security, and greater convenience.

The purpose of this literature review is to offer a synopsis of the accepted research on cashless economies, highlighting both the positive and negative aspects of these systems. Technology, governmental policy, and societal factors are the three main determinants of cashless economies, as discussed in this paper. Also covered in the analysis are the possible risks associated with moving towards cashless economies, such as increased vulnerability to cyberattacks and the marginalization of people who do not have access to electronic payment systems. At its end, the analysis offers stakeholders some advice on how to overcome the obstacles to a cashless economy and encourage its widespread adoption. In sum, the findings and analysis presented in this paper shed light on the variables that are influencing the present level of cashless economy acceptance.

Kirobo, Abdulkadir et al., (2022). People and businesses all across the globe have begun using cashless payment systems. Merchants have begun accepting these payment options due to the widespread belief that the associated hardware is simple and inexpensive. The pros and cons of a cashless economy, as well as different payment mechanisms, are discussed in this paper.

Raya, Josep Maria & Vargas, Claudia. (2022). This paper's overarching goal is to learn how people make the decision to pay with a credit card instead of cash, specifically how socioeconomic characteristics influence the adoption of various payment methods over time. Using a static and dynamic panel data estimation with data from the Spanish Survey of Household Finances (SSHF) from 2002 to 2017, we find that the most important factors influencing the use of credit cards as a payment method are age, income, wealth, education, and education. Age and the cohort effect are separated. Nonlinearity issues and card use persistence are examined. One of our secondary goals is to determine the monetary effects of a cashless economy through a controlled experiment.

Hasan, Aslam et al., (2020). The government of India has begun the transition to a cashless economy in an effort to stem the flow of illicit funds, prevent money laundering, and ensure a stable economy. A new age has begun in the country, one in which digital currency is the norm. The article will begin with defining the cashless system, then go on to describe online banking procedures in India, the government's plans to implement the cashless system across the country, and finally, the difficulties associated with electronic payment systems and a cashless economy. The study's overarching goal is to take a look at the major obstacles that Indians encounter when trying to go cashless. Interviews will be carried out in order to accomplish the goals of this exploratory kind of self-study.

Sahu, G. & Singh, (2017). In this paper, we will try to identify the key elements that led to India's e-payment system's smooth launch. Analyze the prevalence of e-Payment imitators across India and assess the current state of e-Payment in Allahabad, a city in Uttar Pradesh. The research was carried out using a qualitative approach, which included a thorough literature review, interviews, and expert opinions. Using NVivo 11 Pro, we can examine the data and determine what contributed to the success. The program helped identify thirteen elements that would be important for the effective adoption of digital payment in Allahabad: anonymity, bank involvement, drawer, infrastructure, mobility, parties, popularity, range of payment, risk, security, transfer limit, transfer mode, and transfer time. The results will be useful for other cities in India to establish digital payment systems.

Research Objectives

1. To examine the technological and socio-economic challenges faced by individuals in adopting cashless payment systems in Lucknow city, Uttar Pradesh.
2. To analyze the awareness, usage patterns, and perceived benefits of cashless transactions among different socio-economic groups in Lucknow.

Research Methodology

Research Design

The present study is descriptive and analytical in nature. It aims to examine the technological and socio-economic challenges faced in adopting a cashless economy in Uttar Pradesh, with special reference to Lucknow city. The study is based on primary data collected from respondents to understand their awareness, usage, and difficulties related to cashless payment systems.

Area of the Study

The study is conducted in Lucknow city, the capital of Uttar Pradesh. Lucknow has been selected due to its mixed population comprising people from different educational, occupational, income, and socio-economic backgrounds, making it suitable for analyzing cashless economy adoption challenges.

Sample Size and Sampling Technique

A sample size of 95 respondents was selected for the study. The respondents were chosen using a non-probability convenience sampling technique, considering the accessibility of respondents and time constraints. The sample includes both literate and illiterate respondents to capture diverse perceptions and experiences regarding the cashless economy.

Data Collection

The study is based primarily on primary data. Data were collected using a structured questionnaire, designed to obtain information on awareness, usage patterns, technological barriers, and socio-economic challenges related to cashless transactions. The questionnaires were administered personally to ensure better response accuracy.

Tools and Techniques of Analysis

The collected data were classified, tabulated, and analyzed using simple statistical tools, mainly percentage analysis. The results were presented in the form of tables and charts for better interpretation and clarity.

Results and Discussion

Table 1.1:

Respondents' Opinions on Challenges in Adopting a Cashless Economy (N = 95)

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Cashless payment systems are easy to use	22 (23.16)	34 (35.79)	18 (18.95)	14 (14.74)	7 (7.36)	95 (100)
Poor internet connectivity limits the use of cashless payments	31 (32.63)	29 (30.53)	16 (16.84)	12 (12.63)	7 (7.37)	95 (100)
Cashless transactions are safe and secure	18 (18.95)	27 (28.42)	21 (22.11)	19 (20.00)	10 (10.52)	95 (100)
Low income restricts the adoption of cashless payments	26 (27.37)	28 (29.47)	17 (17.89)	15 (15.79)	9 (9.48)	95 (100)
Willingness to shift completely to cashless payments	20 (21.05)	30 (31.58)	19 (20.00)	16 (16.84)	10 (10.53)	95 (100)

Table 1.1 presents respondents' opinions on various challenges related to adopting a cashless economy among 95 respondents. The findings indicate a generally mixed but moderately positive attitude toward cashless payment systems. Regarding ease of use, a majority of respondents (58.95%) either strongly agreed or agreed that cashless payment systems are easy to use, suggesting a fair level of user familiarity and acceptance, although a notable proportion (22.10%) expressed disagreement, indicating usability concerns among some users.

Poor internet connectivity emerged as a significant barrier, with a substantial majority (63.16%) strongly agreeing or agreeing that inadequate internet access limits the use of cashless payments. This highlights infrastructure-related challenges as a major constraint in the wider adoption of digital transactions. In terms of safety and security, opinions were divided: while 47.37% of respondents perceived cashless transactions as safe and secure, 30.52% disagreed, and 22.11% remained neutral, reflecting uncertainty and trust issues related to digital payment platforms.

Income level was also perceived as an important factor influencing adoption. More than half of the respondents (56.84%) agreed that low income restricts the use of cashless payments, indicating that economic capacity and affordability of digital tools play a crucial role in adoption. Finally, willingness to shift completely to cashless payments showed a cautious outlook, with 52.63% expressing agreement, while 27.37% disagreed and 20.00% remained neutral. Overall, the table suggests that although there is a reasonable level of acceptance and willingness toward cashless transactions, challenges such as poor internet connectivity, income constraints, and concerns about security continue to hinder the full adoption of a cashless economy.

Table 1.2:

Expected Benefits of the Cashless Economy (N = 95)

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Cashless economy increases transparency in financial transactions	32 (33.68)	29 (30.53)	17 (17.89)	10 (10.53)	7 (7.37)	95 (100)
Digital payments help reduce corruption and black money	28 (29.47)	31 (32.63)	16 (16.84)	12 (12.63)	8 (8.43)	95 (100)
Cashless transactions save time and increase convenience	35 (36.84)	30 (31.58)	14 (14.74)	9 (9.47)	7 (7.37)	95 (100)
Cashless economy promotes financial inclusion	27 (28.42)	29 (30.53)	18 (18.95)	12 (12.63)	9 (9.47)	95 (100)
Digital payments support economic growth and modernization	30 (31.58)	28 (29.47)	19 (20.00)	11 (11.58)	7 (7.37)	95 (100)

Table 1.2 highlights respondents' perceptions regarding the expected benefits of a cashless economy among 95 respondents. Overall, the results reveal a strong

positive outlook toward the advantages of digital payments. A clear majority of respondents (64.21%) either strongly agreed or agreed that a cashless economy increases transparency in financial transactions, indicating widespread belief that digital systems enhance accountability and reduce opacity in monetary dealings.

Similarly, digital payments were viewed as an effective tool in reducing corruption and black money, with 62.10% of respondents expressing agreement. This reflects confidence in traceable digital transactions as a means of curbing illegal financial activities, although a moderate proportion (21.06%) remained neutral, suggesting some uncertainty about the extent of this impact. Time-saving and convenience emerged as the most strongly endorsed benefit, as 68.42% of respondents agreed that cashless transactions save time and increase convenience, underscoring the practical advantages of digital payment methods in everyday life.

Financial inclusion was also positively perceived, with 58.95% of respondents agreeing that a cashless economy promotes access to financial services for a wider population. However, nearly one-fifth (18.95%) remained neutral, indicating that inclusion benefits may not yet be fully realized by all sections of society. Lastly, support for economic growth and modernization received substantial agreement (61.05%), reflecting the belief that digital payments contribute to broader economic development and technological advancement. Overall, the table demonstrates strong respondent confidence in the economic, social, and operational benefits of transitioning toward a cashless economy.

Table 1.3:

Expected Challenges of the Cashless Economy (N = 95)

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Lack of digital literacy poses a major challenge to adopting a cashless economy	29 (30.53)	27 (28.42)	18 (18.95)	13 (13.68)	8 (8.42)	95 (100)
Poor internet connectivity affects the smooth functioning of cashless transactions	31 (32.63)	29 (30.53)	16 (16.84)	12 (12.63)	7 (7.37)	95 (100)
Risk of cyber fraud discourages people from using digital payments	26 (27.37)	28 (29.47)	17 (17.89)	15 (15.79)	9 (9.48)	95 (100)
High cost of smartphones and internet services limits cashless adoption	24 (25.26)	26 (27.37)	20 (21.05)	15 (15.79)	10 (10.53)	95 (100)
Resistance to change and preference for cash remain significant barriers	30 (31.58)	29 (30.53)	14 (14.74)	13 (13.68)	9 (9.47)	95 (100)

Table 1.3 presents respondents' views on the expected challenges associated with the adoption of a cashless economy among 95 respondents. The results clearly indicate that multiple structural, technological, and behavioral factors continue to hinder the smooth transition toward digital payments. A significant majority of respondents (58.95%) strongly agreed or agreed that lack of digital literacy poses a major challenge, highlighting insufficient knowledge and skills as a key obstacle, particularly among less educated and older populations.

Poor internet connectivity was perceived as one of the most critical challenges, with 63.16% of respondents expressing agreement that it affects the smooth functioning of cashless transactions. This underscores the importance of reliable digital infrastructure for the effective implementation of cashless systems. Concerns related to cyber fraud were also prominent, as 56.84% of respondents agreed that fear of online fraud discourages people from using digital payments, reflecting trust and security issues in the digital ecosystem.

The high cost of smartphones and internet services was identified as another limiting factor, with 52.63% of respondents agreeing that affordability issues restrict cashless adoption. A relatively high neutral response (21.05%) suggests varied experiences across income groups. Additionally, resistance to change and a strong preference for cash were acknowledged as significant behavioural barriers, with 62.11% of respondents agreeing that traditional payment habits continue to impede the shift toward a cashless economy. Overall, the findings indicate that while the cashless economy offers substantial benefits, addressing digital literacy, infrastructure gaps, affordability, security concerns, and behavioural resistance is essential for its successful and inclusive adoption.

Conclusion

The study highlights that while the adoption of a **cashless economy** in Lucknow, Uttar Pradesh, is gradually increasing, significant **technological and socio-economic barriers** continue to impede its full implementation. The analysis of respondents' opinions, as presented in the tables, reveals that **digital literacy, internet connectivity, and cyber security concerns** are among the most critical technological challenges. A considerable proportion of respondents indicated that **poor network infrastructure and lack of familiarity with digital payment systems** discourage them from relying entirely on cashless transactions.

Socio-economic factors also play a significant role in adoption. The findings show that **low income, high cost of smart phones and internet services, and resistance to change** limit the willingness of certain population groups to shift from cash-based to cashless payments. Despite these challenges, respondents

acknowledged several **benefits of a cashless economy**, including increased **convenience, time-saving, transparency, financial inclusion, and reduction of black money**, suggesting that the overall perception of digital payments is positive. Overall, the study concludes that while cashless transactions offer clear economic and social advantages, **effective implementation requires addressing both technological and socio-economic barriers**. Strengthening digital infrastructure, enhancing awareness programs, improving access to affordable digital devices, and building trust in online payment systems are essential steps for promoting broader adoption. The findings provide valuable insights for policymakers, financial institutions, and stakeholders aiming to **accelerate the growth of a cashless economy in Uttar Pradesh and similar urban contexts**.

References

1. Agarwal, M., & Khatri, M. (2021). Moving Towards a Cashless Society – Literature Review. 10(2), Pg. **4419–4428.**
2. Ahmad, K., Arifuzzaman, A., Al Mamun, A., & Md Khaled Bin Oalid, J. (2021). Impact of consumer's security, benefits and usefulness towards cashless transaction within Malaysian university students. International Journal of Research in Business and Social Science (2147- 4478), 10(2), Pg. **238–250**.
3. Ajmera Hiteshi, D. V. B. (2020). "Factors affecting the consumer' s adoption of E -wallets in India: An empirical study". Alochana Chakra Journal, IX(VI), Pg. **1081–1093**.
4. Amofah, D. O., & Chai, J. (2022). Sustaining Consumer E-Commerce Adoption in Sub-Saharan Africa: Do Trust and Payment Method Matter? Sustainability, 14(14), 8466. https://doi.org/10.3390/su14148466
5. Avula, S. (2017). The Cashless Economy in India: Prospects and Challenges. International Journal of Research in Management Studies, 2(9), Pg. **14–19**.
6. Ayu, N., & Suhaimi, N. (2022). Determining The Use of Cashless Payment Methods and The Contributing Factors: Hotel Guests' Perspectives in Malaysia. Pg. **198–208**. https://doi.org/10.55573/IJAFB.074118
7. Balakrishnan, V., & Shuib, N. L. M. (2021). Drivers and inhibitors for digital payment adoption using the Cashless Society Readiness-Adoption model in Malaysia. Technology in Society, 65(March), 101554. https://doi.org/10.1016/j.techsoc.2021.101554

8. Behera, S., & Balaji, P. (2019). Cashless Economy: The Dream of Digital India Cashless Economy: The Dream of Digital India Introduction. International Journal of Management, IX (April 2019).
9. Butini, A. (2020). From barter to cashless societies: how the worldwide economy benefits the implementation of e-payments. Pg. **1–53**.
10. Chatterjee, P., & Rose, R. L. (2012). Do payment mechanisms change the way consumers perceive products? Journal of Consumer Research, 38(6), 1129– 1139. https://doi.org/10.1086/661730
11. Chaturvedi, D. D., Singh, H., & Chaturvedi, S. (2021). Factors Affecting the Adoption of Cashless Transactions in India: An Empirical Study. Journal Of Archaeology Of Egypt/Egyptology, 18(10), 3533.
12. Chauhan, A. (2017). Cashless Economy: Opportunities and Challenges in India. Ramanujan International Journal of Business and Research, 2(1), Pg. **187–194**. https://doi.org/10.51245/rijbr.v2i1.2017.124
13. Hasan, Aslam & Aman, Mohd & Mohd, Ashraf. (2020). Cashless Economy in India: Challenges Ahead. Shanlax International Journal of Commerce. 8. Pg. **21-30.** 10.34293/commerce. v8i1.839.
14. Kirobo, Abdulkadir & Lissah, Jane & Govella, Mohamedi. (2022). Adoption of Cashless Economy in the World: A Review. IOSR Journal of Economics and Finance. 13. Pg. **37-48**. 10.9790/5933-1302083748.
15. Raya, Josep Maria & Vargas, Claudia. (2022). How to become a cashless economy and what are the determinants of eliminating cash. Journal of Applied Economics. 25. Pg. **543-562**. 10.1080/15140326.2022.2052000.
16. Sahu, G. & Singh, (2017). Paradigm Shift of Indian Cash-Based Economy to Cash-Less Economy: A Study on Allahabad City. Pg. **453-461**. 10.1007/ 978-3-319-68557-1_40.
17. Zargar, Nasir & Handoyo, Rossanto & Heiqbaldi, Unggul & Ibrahim, Kabiru & Ali, Umar & Ula, Erika. (2023). Adoption of Cashless Economy: A Review. Manajemen dan Bisnis. 22. 74. 10.24123/jmb. v22i2.701.