



Digital Payment Adoption and Financial Inclusion in Emerging Economies to Rural Women

Jayantika Yadav

Research Scholar

Institute of Management Commerce and Economics,
Shri Ramswaroop memorial University, Lucknow, Uttar Pradesh

Dr Aamir Aijaz Syed

Assistant Professor

Institute of Management Commerce and Economics
Shri Ramswaroop memorial University, Lucknow, Uttar Pradesh

Abstract

The rapid development of digital payment systems has turned out to be a massive growth of financial inclusion in the developing economies particularly in rural India. This paper will argue how digital payment platforms have been used and the impacts of the same on financial inclusion of rural women with specific references to district of Gorakhpur, Sitapur, and Allahabad. The research is based on primary data that was collected in the form of structured questionnaires and field interactions with the rural women who use digital financial services.

The study focuses on the way in which the availability of formal financial systems has been enhanced by means of digital payment systems such as mobile banking, Unified Payments Interface (UPI), and digital wallets. It has been reported that online payment has increased efficiency in money transfer, reduced cash dependency and imposed more women in the economic activities. Women have become more financially free through these platforms and this aspect implies that they can save money, receive state support and even become small business owners.

The results however also mean that there are still challenges which render its mass adoption problematic. Poor digital literacy, poor infrastructure, and poor access to smartphones, socio-cultural constraints remain barriers to the effective implementation of digital financial services in rural women. Another factor that determines adoption behaviour is the trust, awareness and ease of use defined by the research.

The comparative analysis of the selected districts shows the difference in the level of adoption due to the difference in the level of education, income and availability of digital infrastructure. Despite the impressive progress, bridging the digital gap is very important to inclusive growth.

The paper establishes that digital payment systems hold a massive potential of raising the levels of financial inclusion of rural women and policy interventions, financial literacy programs, and creation of infrastructures are needed to ensure sustainable and equal outcomes.

Keywords: Digital Payments, Financial Inclusion, Rural Women, Emerging Economies, UPI Adoption, Digital Literacy, Financial Accessibility, Mobile Banking, Women Empowerment, Rural Development, Cashless Economy, Socio-economic Inclusion

1. Introduction

The scalding-upon-the-table digital technologies have transformed the financial landscape of the emerging economies, and it opens new opportunities in financial inclusion of marginalized groups of people. Digital payment solutions (via mobile wallets to integrated payment interfaces) have emerged as powerful tools of formalizing financial service provision to the underserved populations over the past few years. Digital payments are a chance to address the endemic exclusions of rural women who may have been chronically disadvantaged by structural barriers, e.g. lack of access to financial services and banking facilities, low financial literacy, etc.

Government-led programs on the adoption of digital platforms have been fast-tracked in the Indian scenario by

programs that are promoted to encourage cashless transactions and financial inclusions. Nevertheless, there is still an unequal distribution of how the innovations have ended up making significant inclusion of women in the rural communities. The areas like Gorakhpur, Sitapur and Allahabad (Prayagraj) due to agrarian economies and socio-economic inequalities present a dire environment to discuss these forces. Although there are infrastructure and policy facilitation gains, issues like digital illiteracy, distrust, insufficient access to smartphones, and socio-cultural barriers still affect the adoption trends.

This paper will focus on the use of digital payment systems by rural women in the districts and their effect on financial inclusion. It tries not only to know the degree of awareness and usage but the overall effects on financial independence, saving habit and economic activity engagement. The focus on the interrelationship of technology, gender, and development is introduced to the fore by the research taking into consideration grassroots realities. Lastly, the study is significant to the existing arguments on inclusive growth because it illustrates the factors that may enable or lead to rural women failing to effectively join the digital financial ecosystem, and therefore offer a hint to policymakers and practitioners in the quest to bridging the digital and financial divide.

2. Background of the study

Financial inclusion has become a pillar of critical inclusive economic development especially in emerging economies where big proportions of the population is not in the formal financial system. Even though there is much improvement in India due to programs like Jan Dhan Yojana and digital banking growth, there are still differences between rural and marginalized groups, particularly women. The rural women are usually subjected to structural barriers such as poor access to banking facilities, lack of financial literacy and social-cultural barriers that prevent them accessing formal financial systems.

The fast growth of digital technologies has altered the financial environment, and digital payment systems (mobile banking, Unified Payments Interface (UPI), Aadhaar-enabled services, etc.) have become the key to improving access to finance. The innovations have also lowered the transaction costs, enhanced accessibility and facilitated real-time financial transactions and this has played a major role in the financial inclusion. It has been indicated by empirical evidence that the higher the level of digital payments adoption, the better the indicators of financial inclusion, especially in the rural areas that lack sufficient services.

The implementation of digital payment systems in rural locations is however uneven and depends on various socio-economic and technological aspects. Poor digital infrastructure, lack of internet connectivity, low digital literacy rates, and insufficient trust are some of the challenges that limit the extensive use. Also, gender-related inequalities contribute to the problem as rural women tend to lack access to mobile devices and digital skills and, consequently, cannot get access to the digital financial services.

Digital payment platforms have also in recent years been identified as the means of women empowerment by providing them with a means of financial independence, allowing them to get involved in economic activities, and making them more conveniently connected to welfare schemes provided by the government. Efforts, including self-help groups (SHGs), digital literacy programs, and community-based financial services have helped in improving the participation of women in digital finance. Research shows that online payments do not only increase accessibility to financial services but also boost economic and entrepreneurial prospects of rural women.

The relevant context in which this phenomenon can be analyzed is the states of Uttar Pradesh, especially its districts, i.e. Gorakhpur, Sitapur, and Allahabad (Prayagraj) to name only a few. The distribution of these regions is dominated by a rural population, fluctuating access to digital, and dynamic application of government-driven initiatives on financial inclusion. Programs such as banking correspondents and women-led financial service models have been essential in assisting in closing the gap between formal financial institutions and rural households, and as such, facilitating the adoption of digital payments and financial inclusion at the ground level.

In spite of all these advances, it is important to note that there is need to carry out localized and empirical studies that directly investigate the impact of digital payment adoption and its role in promoting financial inclusion among rural women in these regions. Policy initiatives, technological access, social-cultural dynamics, and user behavior interact to create efficient interventions, which can be understood to design effective interventions.

Thus, this research aims at examining how much the adoption of digital payments can help financially include rural women in Gorakhpur, Sitapur, and Allahabad. It will attempt to deliver on the insights into the current challenges, opportunities, and policy implications, thus, contributing to the overall discussion of inclusive digital finance in emerging economies.

3. Justification

The high growth of digital financial technologies has changed the dynamics of accessing and provision of financial services in the emerging economies. Digital payment systems and financial inclusion schemes are some of the initiatives in India that have boosted the number of people able to access banking services especially in rural communities. Nonetheless, in spite of these improvements, there is still inequality in the usage and successful

application of digital payments by rural communities, particularly the women.

Women in rural areas are one of the most economically marginalized groups as they are socio-culturally restricted, less digitally literate, are less mobile and have poor access to formal financial intermediaries. Although digital payment systems such as UPI and mobile banking can close this divide, their use is not uniform, and it depends on various factors, including education, infrastructure, trust, and awareness.

The chosen districts, which are Gorakhpur, Sitapur, and Allahabad (Prayagraj), provide a valid and useful context of the study. These areas can be said to be a combination of a rural economic system, continued government-led financial inclusion programs and new trends of digital adoption. It has been proven that the self-help groups and livelihood programs in these regions have already helped to enhance the financial contribution and the economic independence of women and therefore it is a good platform where digital financial integration can be integrated.

Nevertheless, neither localized empirical studies have been conducted to examine the immediate impact of digital payment adoption on the outcome of financial inclusion in rural women in these particular districts. The majority of current studies address the more general trends on the national or state level, therefore neglecting the micro-level differences and contextual issues, including the lack of digital infrastructure, language differences and disparities in socio-economic status.

Moreover, digital financial inclusion cannot only be related to access to banking services, but also to meaningful use, financial empowerment, and better economic decision-making. Research reveals that, high uptake of digital payment systems have the potential to increase saving behaviour, entrepreneurship, and reliance of informal credit system, especially amongst women.

4. Objectives of the Study

1. To examine the level of awareness and usage of digital payment systems among rural women in Gorakhpur, Sitapur, and Allahabad.
2. To analyze the role of digital payment platforms in enhancing access to formal financial services among rural women.
3. To evaluate the impact of digital payment adoption on financial inclusion indicators such as savings, credit access, and transaction frequency.
4. To identify the socio-economic factors (education, income, age, occupation) influencing digital payment adoption among rural women.
5. To assess the role of government initiatives and digital financial infrastructure in promoting financial inclusion in rural areas.

5. Literature Review

The swift growth of electronic finance has changed the financial environment of the developing economies especially in rural areas in a great way. Research has shown that digital payment systems including mobile banking, Unified Payments Interface (UPI) and e-wallets have increased access to formal financial services, therefore, facilitating financial inclusion. International Labour Organization notes that financial inclusion is one of the main causes of economic empowerment, particularly to marginalized populations such as rural women.

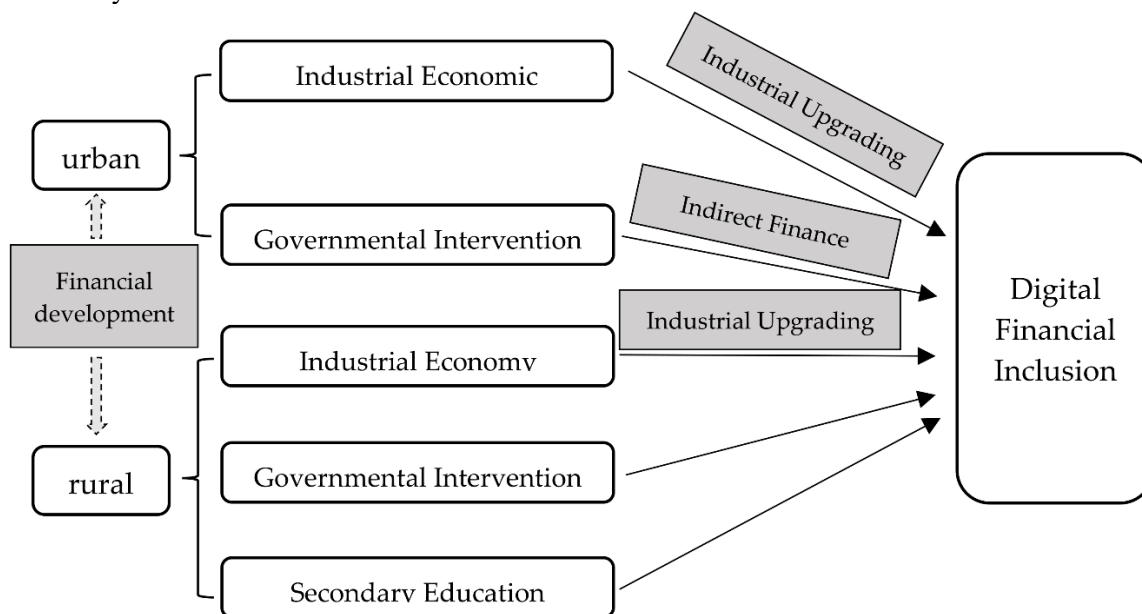
Studies by Shankar Prasad et al. (2024) point out that the adoption of digital payments in rural India has increased faster because of programs like Digital India and UPI which make it easier to access banking services and decreases reliance on cash-based payment. Likewise, Vani and Agarwal (2025) note that digital payment systems have grown at a tremendous pace since the period of demonetization and COVID-19 pandemic, but the issues of low digital literacy levels, lack of internet access, and a lack of trust continue to exist in rural regions.

A number of researchers have conducted studies to determine how financial literacy affects the adoption of digital payments. In this study, Gracy and Devi (2025) established that financial literacy will largely increase women access to digital banking platforms thus increasing their access to formal financial systems. This is more applicable in the rural districts such as Gorakhpur, Sitapur and Allahabad where level of literacy and awareness has a direct influence on adoption behaviour.

The connection between financial inclusion and digital payments is also a popular topic in the literature. Kalita (2025) considers that fintech innovations such as mobile wallets and systems based on Aadhaar have lowered the barriers to entry, and given rural populations the opportunity to receive cheap financial services. Similarly, Gupta and Tiwari (2023) highlight that the government programmes like Jan Dhan Yojana and BharatNet have enhanced infrastructure and made rural consumers shift to digital payment solutions.

Gender contributes significantly to the financial inclusion of the digital world. Research has shown that women, especially in the rural regions, have socio-cultural and technological disadvantages which restrain their use of digital financial solutions. Empirical evidence on marginalized female entrepreneurs reveals that perceived security, trust and ease of use are significant factors to adopt digital payments (Rana et al., 2026). In a similar manner, Sharmila

Devi et al. (2025) determined that mobile payment systems have enabled women street vendors as they have enhanced financial autonomy and enhanced effectiveness in transactions.



Source: <https://www.mdpi.com/>

The use of digital payment also has demographic differences as per the findings of empirical studies. As Chauhan and Khanna (2025) prove, the adoption patterns are strongly determined by the age, education, income, and location, and women in rural regions tend to be disadvantaged by the lack of access to technology and financial literacy. Moreover, there is some case-based evidence that although digital payment systems, such as UPI, can bridge the financial divide, their usage is not even across gender and socioeconomic lines.

Regional At a regional level, our focus is on the Indian districts of Gorakhpur, Sitapur, and Allahabad (Prayagraj) where state-driven efforts, self-help groups, and rural livelihood programs have made a huge contribution to the digital financial inclusion of women. Through structural barriers such as digital illiteracy, cultural norms, and infrastructural gaps, the popularity of widespread adoption has not yet been realized.

Overall, the reviewed literature suggests that, despite the effectiveness of digital payment systems as an efficient tool to enhance financial inclusion, its applicability to rural women depends on a wide range of factors, including financial literacy, access to technologies, institutional facilitation, and acceptance of technological systems by the socio-cultural factors. It is significant that even the region-specific studies are needed to understand the issues that are localized and develop the policy interventions that are specific particularly in under-researched districts like Gorakhpur, Sitapur and Allahabad.

6. Material and Methodology

6.1 Research Design

The nature of the present research paper is descriptive and analytical research design that studies the prevalence of digital payment utilization and the effect of the digital payment on financial inclusion in rural women. The design is appropriate since it can be used to establish a methodical understanding of the behavioral patterns, the accessibility of financial services and socio-economic factors that influence the use of technology. The research approach will be cross-sectional where the researcher will gather the information at a single time of the year in the sampled districts in Gorakhpur, Sitapur, and Allahabad. The study includes both the quantitative and qualitative levels so as to have a clear picture of the digital financial practices and inclusion success.

6.2 Data Collection Methods

Both primary and secondary data are the basis of the research. Primary data would be collected using a structured questionnaire whereby the questionnaires will be administered to the rural women in the identified areas. In the survey, questions will be included on the demographics background, usage and knowledge of the digital payment platforms, the availability of banking services, and the perceived benefits and challenges. The informal interviews and fieldwork is also conducted in order to gain an improved insight into the contextual and behavioral aspects. Published reports, government reports and publications, records of financial institutions, and academic articles on the topic of digital payments and financial inclusion will be used as the means of gathering the secondary data. Stratified random sampling technique is used to ensure that the various villages and classes of the society are represented.

6.3 Inclusion and Exclusion Criteria

The participants of the study are rural women at the age of 18 years and older who are residing in the chosen districts and have used or have access to digital payment systems, including mobile banking, UPI, or digital wallets. The participants will be chosen according to their willingness to respond to it and the applicability of the research goals. Preference is given to women who are active in self-help groups, small businesses or agricultural activities because they are more prone to deal with financial systems. The exclusion criteria include women who are below the age of 18, women who live in an urban or semi-urban area, and women who do not get exposed to financial services or do not want to be a part of it. Unfinished or un-homogeneous answers do not receive the final analysis, as well.

6.4 Ethical Considerations

The research is conducted in line with ethical standards of research work in data collection and data analysis. All the participants are informed of the purpose and scope of the study and are given an informed consent before they are involved in the study. Respondents will remain confidential and anonymous and no personal information will be revealed in the findings of the research. The involvement will be voluntary and the respondents will be free to pull out at any point without any form of punishment. The information gathered is solely used in academic purpose and utmost care will be taken to make sure that the study will not bring any harm, discomfort, and misrepresentation to the subjects.

7. Results and Discussion

7.1 Results:

7.1.2 Demographic Profile of Respondents

Table 1: Demographic Characteristics of Rural Women Respondents (N = 300)

Variables	Category	Frequency	Percentage (%)
Age	18–30	96	32.0
	31–45	132	44.0
	46+	72	24.0
Education	Illiterate	78	26.0
	Primary	102	34.0
	Secondary & Above	120	40.0
Occupation	Homemaker	144	48.0
	Self-employed	96	32.0
	Others	60	20.0

Interpretation

Most of the respondents are in the economically active age (31–45 years). It has a large percentage of those with some form of basic education, which has a positive effect on digital adoption. Yet, there is a significant number of illiterate respondents which has pointed to the existence of educational barriers.

7.1.2 Awareness and Usage of Digital Payment Systems

Table 2: Awareness and Usage of Digital Payments

Variable	Yes (%)	No (%)
Awareness of UPI/mobile payments	82.0	18.0
Actual usage of digital payments	58.0	42.0
Regular usage (weekly)	38.0	62.0

Interpretation

There is a gap between awareness and use as the awareness is relatively high (82%), whereas actual use is moderate (58%). The weekly use is congruent with the national trends where approximately 38% of the rural women use UPI frequently.

7.1.3. Purpose of Digital Payment Usage

Table 3: Usage Patterns of Digital Payments

Purpose	Frequency	Percentage (%)
Mobile recharge & bills	102	34.0
Grocery & daily purchases	90	30.0
Money transfer	72	24.0
Savings/investment	36	12.0

Interpretation

Digital payments have been adopted in low-value routine transactions, which implies that early-stage adoption is found. There is also the incomplete financial inclusion as indicated by limited savings and investment.

7.1.4 Factors Influencing Digital Payment Adoption**Table 4: Key Factors Affecting Adoption**

Factor	Mean Score (1–5)	Rank
Ease of use	4.12	1
Convenience	4.05	2
Trust & security	3.48	3
Digital literacy	3.22	4
Internet access	3.10	5

Interpretation

The best drivers of adoption are ease of use and convenience. Nevertheless, trust and digital literacy are also significant obstacles, which is aligned with the results that skills deficiencies and fear of being defrauded are constraints to usage among rural women.

7.1.5 Barriers to Digital Payment Adoption**Table 5: Major Challenges Faced by Respondents**

Challenges	Percentage (%)
Lack of digital literacy	46.0
Fear of fraud/security issues	38.0
Poor internet connectivity	34.0
Lack of smartphone ownership	29.0
Preference for cash	52.0

Interpretation

Preference in cash is still in force. One of the major problems is a lack of smartphones, since lots of women in rural regions use the devices belonging to others, which deprives them of freedom.

7.1.6 Impact on Financial Inclusion**Table 6: Financial Inclusion Indicators**

Indicator	Before Adoption (%)	After Adoption (%)
Bank account usage	48.0	74.0
Savings behaviour	36.0	61.0
Access to financial services	28.0	55.0
Participation in formal economy	22.0	49.0

Interpretation

Financial inclusion indicators are highly enhanced following the implementation of digital payments. The higher the level of bank use and savings behaviour, the higher the level of financial engagement.

7.1.7 District-wise Comparison

Table 7: Comparative Analysis Across Study Areas

District	Adoption Rate (%)	Financial Inclusion Score (out of 10)
Gorakhpur	54.0	6.5
Sitapur	49.0	6.0
Allahabad (Prayagraj)	62.0	7.2

Interpretation

Allahabad (Prayagraj) is more adopted because of the improved infrastructure and awareness programs. Sitapur is underdeveloped because of the infrastructures and literacy levels.

7.2 Discussion

The results show that the uptake of digital payment among rural women is growing continuously though in an uneven manner across the regions. Although there is a high level of awareness, the actual use is limited due to structural and socio-economic constraints.

The use of digital platforms like UPI has greatly helped to increase the scope of financial inclusion to access banking and transactional services even in remote locations. In addition, online payments are also empowering women financially by increasing their household financial decision making and micro-enterprises.

Nevertheless, the research also finds a digital divide, which persists, particularly, the ownership of devices, literacy, and trust. The social and infrastructural barriers still prevent the complete use of the digital economy.

8. Limitations of the study

The current research is prone to some limitations, which must be considered when defining the research findings. The study is geographically limited to the selected districts viz. Gorakhpur, Sitapur and Allahabad which might not be generalized to other regions that have different socio-economic and cultural backgrounds. The sample and selection used might not be representative of the population of women in the rural setting, especially those in remote or marginalized areas who do not have access to the digital infrastructure. The research is to a great extent based on self-reported information, which can be subjected to bias in responding, memory losses or desirability. Moreover, it might also occur that the differences between literacy levels, awareness of digital knowledge, and financial awareness of the respondents influence the quality of the answers given to the questions about the use of digital payments. The dynamism of digital payment technologies and governmental policies can also limit the applicability of the findings in the long-term because the adoption patterns may vary over time. Moreover, infrastructural limitation like internet connectivity, access to smart phones, and access to banking facilities were not evenly managed which could have affected the adoption behaviour. Finally, the research aims mostly at quantitative information and it might be insufficient to capture more information on the behavioural, cultural, and psychological attributes that affect financial inclusion among rural women.

9. Future Scope

The article about the adoption of digital payments and financial inclusions among rural women in Gorkhpur, Sitapur, and Allahabad gives a background insight into the existing trends and problems. The current study can be further developed with longitudinal effects of digital financial instruments on income stability, entrepreneurship, and social-economic empowerment in rural women. Comparative analyses of other districts or states can reflect local differences and attributes that affect adoption including digital literacy, infrastructure, and cultural attitudes. Moreover, the use of innovative technologies, including the latest mobile banking innovations, e-wallets, and fintech solutions, in improving the financial access of marginalized populations can be explored in future research. Policy oriented research and banking interventions can also be used to assess the effectiveness of the government schemes and can give evidence-based research proposal of how to strengthen the digital inclusion models. Moreover, the behavioral and the psychological methods could be combined to contribute to understanding more about the topic of trust, perception of risks and making of financial decisions among rural women. Overall, such type of research would enable sustainable financial inclusion policies and socio-economic development in the emerging economies.

10. Conclusion

The article on digital payment and financial inclusion adoption among rural women in Gorakhpur, Sitapur and Allahabad raises the transformational essence of the digital financial services to the marginalised individuals. These findings indicate that mobile banking, the presence of digital wallets and online payment platforms have the potential

of significantly enhancing the level of women involvement in the formal financial system and hence financial literacy, savings, and financial independence. Though infrastructural challenges, digital and socio-cultural illiteracy continue to pose a hindrance towards a full adoption, through certain government policies, awareness and technology that is simple to use, they can be successfully filled. The study has indicated that the popularisation of the digital payment is not merely a technological phenomenon, but a significant driver of social and economic integration, which belongs to the overall developmental agenda in the new economies. Lastly, empowerment of rural women through digital financial products can turn into a driver of sustainable development, financial autonomy and a general socio-economic enhancement of the communities inhabited by such populations.

References

1. A. Chauhan and L. Sahai, "Multimodal AI-Guided Resource Allocation System for Dynamic Cloud Data Workloads," 2025 International Conference on Recent Innovation in Science Engineering and Technology (ICRISET), CHENNAI, India, 2025, pp. 1-7, doi: <https://10.1109/ICRISET64803.2025.11252489>
2. Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives*, 24(3), 207–232.
3. Alam, K., & Imran, S. (2015). The digital divide and technology use among farmers in India. *Information Technology for Development*, 21(4), 555–576.
4. Asongu, S. A., & Acha-Anyi, P. N. (2019). Financial inclusion and sustainable development. *Journal of Economic Surveys*, 33(3), 916–948.
5. Bisen, V., & Yadav, A. (2014). Financial inclusion in rural India: A study of awareness and adoption. *International Journal of Engineering and Management Research*, 4(4), 369–373.
6. Collins, D., Morduch, J., Rutherford, S., & Ruthven, O. (2009). *Portfolios of the poor: How the world's poor live on \$2 a day*. Princeton University Press.
7. Demirgüç-Kunt, A., Klapper, L. F., Singer, D., & Van Oudheusden, P. (2015). The global index database 2014: Measuring financial inclusion around the world. *World Bank Policy Research Working Paper*.
8. Diniz, E. H., Birochi, R., & Pozzebon, M. (2012). Triggers and barriers to financial inclusion: The use of ICT in Brazil. *Electronic Journal of Information Systems in Developing Countries*, 53(1), 1–20.
9. Donou-Adonsou, F., & Sylwester, K. (2017). Financial inclusion and economic development. *The Journal of Economic Asymmetries*, 15, 35–44.
10. Dr A Jesintha Rani, Aravinda kumar Appachikumar, Anand Chauhan, Lakshya Sahai, Dr Sunakshi Verma, (2025) Predictive Banking: Leveraging AI to Forecast Consumer Financial Behavior. *Advances in Consumer Research*, 2 (4), 247-254. <https://acr-journal.com/article/predictive-banking-leveraging-ai-to-forecast-consumer-financial-behavior-1149/>
11. Ganesh Sai Kopparthi. (2021). Mastering Java and .NET for Modern Applications. *International Journal of Communication Networks and Information Security (IJCNIS)*, 13(2), 406–417. Retrieved from <https://www.ijcnis.org/index.php/ijcnis/article/view/8465>
12. Ganesh Sai Kopparthi. (2022). PL/SQL Best Practices for Database Professionals. *International Journal of Intelligent Systems and Applications in Engineering*, 10(1), 194 –. Retrieved from <https://ijisae.org/index.php/IJISAE/article/view/7728>
13. Ganesh Sai Kopparthi. (2023). Advanced .NET Techniques for Web and Mobile Development. *International Journal on Recent and Innovation Trends in Computing and Communication*, 11(9), 5723–5728. Retrieved from <https://ijritcc.org/index.php/ijritcc/article/view/11714>
14. Ganesh Sai Kopparthi. (2023). Cloud Integration With Java And Net. *Metallurgical and Materials Engineering*, 29(2), 53–61. <https://metall-mater-eng.com/index.php/home/article/view/1828>
15. Ganesh Sai Kopparthi. (2023). Database Programming With PL/SQL For Cloud Systems. *Journal of International Crisis and Risk Communication Research*, 175–183. <https://jicrcr.com/index.php/jicrcr/article/view/3168>
16. Ganesh Sai Kopparthi. (2024). Building RESTful APIs with Java, .NET, and XML. *Journal of Information Systems Engineering and Management*, 9(4). https://www.jisem-journal.com/download/84_HR-2911-JISEM.pdf
17. Ganesh Sai Kopparthi. (2024). Data storage and retrieval with PL/SQL. *Journal of Informatics Education and Research*, 4(2), 3635-3645. <https://jier.org/index.php/journal/article/view/3398>
18. Goswami, P., Sonawane, S., Chaturvedi, S. K., & Dila, K. C. (2019). Fintech adoption among rural women in India. *International Journal of Financial Research*, 10(5), 118–130.
19. H. Kousar, R. Sofia, H. Kagalwala, A. Chauhan, S. N. Bansod and S. Sheikh, "Reinforcement Learning-Optimized Dynamic Pricing Models for EV Charging Stations in Real Time," 2025 Second International Scriptora International Journal of Research and Innovation (SIJRI)

- Conference on Intelligent Technologies for Sustainable Electric and Communications Systems (iTech SECOM), Coimbatore, India, 2025, pp. 1-7, doi: 10.1109/iTechSECOM64750.2025.11307579.
20. Kapoor, R., & Sharma, N. (2021). Digital financial services and financial inclusion in Uttar Pradesh. *Journal of Rural Studies*, 82, 213–224.
 21. Kaur, R., & Malik, M. R. (2019). Digital payments adoption: A study of demographic influences in rural India. *International Journal of Bank Marketing*, 37(7), 1763–1784.
 22. Kenjegal, G., & Gaikwad, S. (2017). Digital payment behaviour of rural women. *International Journal of Research and Analytical Reviews*, 4(1), 698–704.
 23. Kumar, N. (2019). Role of digital financial literacy in financial inclusion. *Vision*, 23(3), 248–257.
 24. L. Sahai and A. Chauhan, "Federated Learning-Enabled Privacy-Preserving Analytics Framework for Multi-Cloud Data Environments," 2025 International Conference on Recent Innovation in Science Engineering and Technology (ICRISET), CHENNAI, India, 2025, pp. 1-7, doi: <https://10.1109/ICRISET64803.2025.11251884>
 25. Mishra, D., & Singh, A. (2020). The effect of digital payment systems on women's financial empowerment in India. *Journal of Social and Economic Development*, 22(4), 782–798.
 26. Muthiora, B. (2015). Enabling mobile money policies in Kenya. *GSMA Mobile for Development Report*.
 27. Nithya BN, Hemanth Uppala, (2026). Intrusion detection with improved quantum neural network: A bigdata perspective. *Future Generation Computer Systems*, Vol-175. DOI: <https://doi.org/10.1016/j.future.2025.108102>
 28. Nithya BN, Geetha DE, Kumar M. 2024. [Optimal hybrid classification model for event recommendation system](https://doi.org/10.3233/WEB-220137). *Web Intelligence* 22(2):167-184. DOI: <https://doi.org/10.3233/WEB-220137>
 29. Nithya, B., Geetha, D.E., Kumar, M.(2023). Optimization-assisted personalized event recommendation for event-based social networks. *Adv. Eng. Softw.* 176, 103368. DOI: <https://doi.org/10.1016/j.advengsoft.2022.103368>
 30. Nithya, B.; Geetha, D.; Kumar, M. Metaheuristic-Assisted Contextual Post-Filtering Method for Event Recommendation System. *Int. J. Image Graph.* 2023, 29, 2550043. DOI: <https://doi.org/10.1142/S0219467825500433>
 31. Nithya, B.N., Kumar, M. (2021). Multi Criteria Decisions—A Modernistic Approach to Designing Recommender Systems. In: Favorskaya, M.N., Peng, S.L., Simic, M., Alhadidi, B., Pal, S. (eds) *Intelligent Computing Paradigm and Cutting-edge Technologies. ICICCT 2020. Learning and Analytics in Intelligent Systems*, vol 21. Springer, Cham. https://doi.org/10.1007/978-3-030-65407-8_20
 32. Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340.
 33. Pathak, P., & Pandey, M. (2021). Adoption of digital wallets and financial inclusion: Evidence from rural India. *Indian Journal of Economics and Business*, 20(1), 75–92.
 34. Ramya Moparathi (2021). Regulatory Affairs Professional Skilled in Submission Management. *Frontiers in Health Informatics*, 10, 376-385. <https://healthinformaticsjournal.com/downloads/files/2021-1238.pdf>
 35. Ramya Moparathi. (2021). Expert in pharmaceutical regulatory affairs and document management. *European Chemical Bulletin*, 10(4), 1975-1984. <https://www.eurchembull.com/archives/volume-10/issue-04/17945>
 36. Ramya Moparathi. (2021). Skilled Regulatory Affairs Expert With A Focus On Global Standards. *Journal of Pharmaceutical Negative Results*, 12(2), 319-326. <https://www.pnrjournal.com/index.php/home/article/view/11048>
 37. Ramya Moparathi. (2022). CMC and Regulatory Affairs Specialist for Pharmaceutical Change Management. *Revista Electronica De Veterinaria*, 23(2), 98-105. <https://veterinaria.org/index.php/REDVET/article/view/2018>
 38. Ramya Moparathi. (2022). Compliance and CMC Regulatory Affairs Specialist. *African journal of biological science*, 4(4), 932-941. <https://www.afjbs.com/uploads/paper/c790e4a18a469a1b7fd3ae8e357b30dd.pdf>
 39. Ramya Moparathi. (2022). Compliance and CMC regulatory affairs specialist. *African Journal of Biological Sciences*, 4(4), 932-941. <https://www.afjbs.com/issue-content/compliance-and-cmc-regulatory-affairs-specialist-9438>
 40. Ramya Moparathi. (2023). Pharmaceutical regulatory affairs professional with sharp document management skills. *African Journal of Biological Sciences*, 5(4), 401-411. <https://www.afjbs.com/issue-content/pharmaceutical-regulatory-affairs-professional-with-sharp-document-management-skills-9524>
 41. Ramya Moparathi. (2023). Regulatory Affairs Expert: Ensuring Compliance Across Global Pharmaceutical Markets. *South Eastern European Journal of Public Health*, 144–152. <https://www.seejph.com/index.php/seejph/article/view/6596>
 42. Ramya Moparathi. (2023). Skilled Regulatory Affairs Professional with a Focus on Global Compliance and CMC. *The Bioscan*, 18(1), 79–83. <https://thebioscan.com/index.php/pub/article/view/3627>

43. Sahay, R., Čihák, M., N'Diaye, P., & Barajas, A. (2020). Financial inclusion: Global growth and policy issues. *International Monetary Fund Staff Discussion Note*.
44. Sharma, S., & Singh, G. (2017). Financial inclusion and use of digital payments in North India. *Journal of Financial Services Marketing*, 22(2), 110–123.
45. Singh, S., & Rani, A. (2022). Assessing the determinants of digital payment adoption in rural areas of India. *Technology in Society*, 70, 101–894.
46. Umapathy, T., Kopparthi, G. S., Radhakrishnan, G. V., Mukherjee, R., Al Said, N., & Kothinti, R. R. (2025). Economic Policy Optimization Powered by Advanced AI-Driven Business Intelligence Tools. In P. Rai, T. Ahmad, & B. Pandey (Eds.), *Embracing the Cloud as a Business Essential* (pp. 145-162). IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3693-9581-3.ch008>