

Usage of Digital Financial Tools in the Agricultural Sector of Chhattisgarh

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ABSTRACT

The present study examines the usage of digital financial tools in the agricultural sector of Chhattisgarh and analyzes their role in enhancing financial inclusion, operational efficiency, and accessibility among farmers and agro-based respondents. The study focuses on the adoption and usage of digital payment systems such as UPI, e-wallets, digital banking services, online subsidies, and digital credit facilities. Primary data were collected from 134 respondents through a structured questionnaire in selected districts of Chhattisgarh, including Bilaspur, Raigarh, and Ambikapur. The collected data were analyzed using frequency and percentage analysis. The findings reveal that a majority of respondents actively use UPI and digital banking services, indicating growing acceptance of digital financial technologies. However, the adoption of digital loans and access to online subsidy schemes remain comparatively low due to challenges such as limited digital literacy, poor infrastructure, lack of awareness, and technological barriers. The study concludes that digital financial tools have significant potential to modernize agricultural finance and improve rural economic development, provided adequate awareness, policy support, and infrastructural facilities are ensured.

Keywords: Digital Financial Tools, Financial Inclusion, Agricultural Sector, UPI and Digital Payments, Chhattisgarh Agriculture

INTRODUCTION

The usage of digital financial tools in the agricultural sector of Chhattisgarh has significantly transformed financial accessibility and operational efficiency among farmers. The adoption of digital payment systems, particularly the Unified Payments Interface (UPI), has increased rapidly due to various government initiatives launched under the Digital India programme, enabling farmers to conduct transactions more conveniently and securely (Singh, 2022). In addition, digital wallets and mobile-based financial services have emerged as important FinTech solutions that assist farmers in accessing credit facilities, managing cash flow, and improving overall financial inclusion ("Assessing Digital Market Access and Mobi...", 2025). Furthermore, the Electronic National Agriculture Market (e-NAM) has played a crucial role in enhancing farmers' income by providing better price discovery mechanisms and wider market linkages (Tyngkan, 2018). These digital platforms have also strengthened transparency and bargaining power by connecting farmers with urban as well as international markets ("Assessing Digital Market Access and Mobi...", 2025). Despite the considerable benefits offered by digital financial tools, several challenges continue to hinder their widespread adoption in the agricultural sector of Chhattisgarh. Issues such as inadequate digital literacy, poor technological infrastructure, and socio-economic disparities remain significant barriers for many farmers (Abedalrman, 2024; Singh, 2022). Therefore, targeted initiatives focusing on digital literacy enhancement and infrastructural development are essential to maximize the effectiveness of digital financial technologies in agriculture (Jaiswal et al., 2021). Although these technologies contribute to improved financial inclusion and market accessibility, unequal access to digital resources and education may further widen existing inequalities among different categories of farmers if not addressed properly.

Objectives of study:

- 1) To examine the extent of usage of digital financial tools among farmers and agro-based respondents in Chhattisgarh.
- 2) To analyze the adoption and frequency of use of digital payment systems such as UPI, e-wallets, and digital banking services in the agricultural sector.
- 3) To assess the accessibility and utilization of digital financial services, including online subsidies and digital credit facilities, among respondents.
- 4) To identify the challenges and factors influencing the adoption and effective use of digital financial tools in the agricultural sector of Chhattisgarh.

Need of the Research: The need for this research arises from the increasing adoption of digital financial tools in the agricultural sector and their growing importance in improving financial inclusion, transparency, and operational efficiency among farmers in Chhattisgarh. With the rapid expansion of digital payment systems, online banking, e-wallets, and digital credit services, it becomes essential to understand the level of awareness, accessibility, and usage of these tools among agricultural stakeholders. The study is also necessary to identify the challenges faced by farmers in adopting digital financial technologies and to suggest measures for enhancing digital financial literacy and effective utilization of such services.

Scope of the Research: The scope of this research is confined to the study of digital financial tools used in the agricultural and agro-processing sector of Chhattisgarh. The research focuses on examining the usage of digital payment systems, e-wallets, digital banking services, online subsidies, and digital credit facilities among respondents. It also covers the analysis of user behavior, accessibility, ease of use, and the challenges associated with digital financial adoption. The findings of the study may help policymakers, financial institutions, and researchers in understanding the current status of digital financial inclusion in the agricultural sector.

Limitations of the Research: The study has certain limitations that may affect the generalization of the findings. The research is limited to selected respondents from the agricultural sector in four districts Chhattisgarh, such as Bilaspur, Raigarh and Ambikapur and may not represent the views of all farmers across India. The study primarily relies on respondents' perceptions and self-reported data, which may include personal bias or inaccurate responses. In addition to that, the factors such as; limited digital literacy, internet connectivity issues, and time constraints during data collection may have influenced the accuracy and depth of the findings.

REVIEW OF LITERATURE

The review of literature provides an understanding of previous studies related to digital financial tools, financial inclusion, and their application in the agricultural sector. Several researchers have examined the role of FinTech, digital payments, and online financial services in improving financial accessibility and operational efficiency among rural populations and agribusinesses. Abedalrman (2024) highlighted the transformative potential of FinTech in enhancing financial inclusion and efficiency in rural agricultural contexts, although the study did not specifically focus on Chhattisgarh. Similarly, Singh S. K. (2022) discussed the adoption of Unified Payments Interface (UPI) and emphasized the influence of Digital India initiatives on digital payment trends. Tyngkan (2018) examined the impact of the electronic National Agriculture Market (e-NAM) on farmers' income in Raipur and Dhamtari APMCs, indicating the importance of digital market platforms in improving agricultural marketing systems. Jaiswal, Seth, and Kasera (2021) emphasized the significance of digital financial tools in agribusiness by improving cash flow management, enabling collateral-free loans, and enhancing operational efficiency. Likewise, Fausiyat A. T. (2025) explored digital market access and mobile finance in rural agribusiness contexts across Sub-Saharan Africa and South Asia, while Joy et al. (2024) focused on fintech platforms that improve access to financial services for smallholder farmers globally. Dubey and Gain (2025) discussed AI integration in sustainable agriculture and highlighted the opportunities and challenges associated with technology-driven agricultural development. In addition, studies related to rural commerce in Telangana demonstrated that digital tools such as mobile banking and UPI contribute significantly to financial inclusion and support rural entrepreneurs. Furthermore, Jagtap, Sonwane, Khandagale, and Biradar (2025) examined digital platforms for farmer empowerment in Maharashtra, focusing on modernization, machinery information, and awareness regarding government schemes. Although the existing literature highlights the importance of digital financial tools in promoting financial inclusion, market access, and agricultural modernization, most studies are either conducted in broader rural contexts or focused on regions outside Chhattisgarh. Very limited research specifically examines the usage, accessibility, and effectiveness of digital financial tools in the agricultural sector of Chhattisgarh. But, there is inadequate empirical evidence regarding farmers' adoption behavior, challenges in digital financial usage, and the impact of digital financial literacy on agricultural activities in the state. Therefore, the present study attempts to fill this gap by analysing the usage of digital financial tools and their influence on the agricultural sector in Chhattisgarh.

RESEARCH METHODOLOGY

The present study is descriptive and analytical in nature and focuses on examining the usage of digital financial tools in the agricultural sector of Chhattisgarh. Primary data were collected from 134 respondents associated with the agro and food processing sector through a structured questionnaire covering aspects such as UPI usage, e-wallets, digital banking services, digital loans, online subsidies, and ease of using digital tools. The study was conducted in selected districts of Chhattisgarh, including Bilaspur, Raigarh, and Ambikapur. Secondary data were collected from research articles, journals, reports, and published literature related to digital financial inclusion and agricultural finance. The collected data were analyzed using simple statistical tools such as frequency and percentage analysis to interpret respondents' adoption behavior, accessibility, and challenges related to digital financial tools.

ANALYSIS AND INTERPRETATION

The usage of digital financial tools refers to the extent to which individuals actively utilize digital platforms and technologies for conducting financial transactions and managing their finances. These tools include mobile banking applications, UPI-based payment systems, digital wallets, online banking services, and other fintech solutions. In the context of the agro and food processing sector, the adoption and regular use of such tools play a crucial role in enhancing efficiency, transparency, and financial inclusion. Analyzing the usage patterns of digital financial tools among respondents helps in understanding their level of engagement with the digital financial ecosystem and identifying potential gaps in adoption and practical application.

A. Frequency of UPI usage: The frequency of UPI (Unified Payments Interface) usage is a key indicator of the practical adoption of digital financial tools among respondents (Xu, G., Feng, L., & Wang, W. 2024). It reflects how regularly individuals rely on digital payment systems for their day-to-day financial transactions. Analyzing usage frequency helps in understanding the level of integration of digital payments into routine financial behavior.

Table 1: Frequency of UPI usage

Response	No of Respondents	Percentage (%)
Daily	93	69.4
Weekly	27	20.1
Rarely	5	3.7
Never	9	6.7
Total	134	100

Interpretation: The table indicates that a majority of respondents, **69.4%**, use UPI **daily**, demonstrating a high level of dependence on digital payment systems. Additionally, **20.1%** use it **weekly**, indicating regular but less frequent usage. A smaller proportion of respondents use UPI **rarely (3.7%)** or **never (6.7%)**, suggesting limited adoption among a few individuals. Hence, the findings of this research highlight strong usage of UPI among respondents, reflecting widespread acceptance of digital payment methods, although a small segment still remains less engaged.

B. Use of e-wallets: The use of e-wallets is an important aspect of digital financial behavior, as it reflects respondents' adoption of alternative digital payment methods beyond traditional banking systems (Takane, V. S., & Kedar, S. S. 2025). E-wallets facilitate quick and convenient transactions for payments, transfers, and online purchases. Assessing their usage helps in understanding the extent to which respondents are integrating diverse digital financial tools into their daily activities.

Table 2: Use of e-wallets

Response	No of Respondents	Percentage (%)
Regularly	47	35.1
Occasionally	51	38.1
Never	36	26.9
Total	134	100

Interpretation: The table indicates that **38.1%** of respondents use e-wallets **occasionally**, followed by **35.1%** who use them **regularly**, suggesting a moderate level of adoption among the majority. However, **26.9%** of respondents **never** use e-wallets, indicating a notable portion that has not embraced this mode of digital payment. Therefore the findings show that while e-wallet usage is fairly common, it is not as consistently adopted as other digital payment methods, highlighting scope for increased awareness and usage.

C. Use of digital banking services: The use of digital banking services is a significant indicator of the adoption of formal digital financial systems among respondents. It includes activities such as online banking, mobile banking, fund transfers, bill payments, and account management through digital platforms (Bassey, I. B., Oscar, F., Ebong, G. N., Oyekunle, D., & Matthew, U. O. 2025). Evaluating the frequency of usage helps in understanding how actively respondents engage with banking services in a digital environment.

Table 3: Use of digital banking services

Response	No of Respondents	Percentage (%)
Frequently	66	49.3
Sometimes	48	35.8
Never	20	14.9
Total	134	100

Interpretation: The table indicates that **49.3%** of respondents use digital banking services **frequently**, while **35.8%** use them **sometimes**, reflecting a considerable level of engagement with digital banking platforms. However, **14.9%** of respondents **never** use such services, indicating a segment that remains excluded from digital banking. Therefore the findings suggest that while digital banking adoption is fairly strong, there is still a need to encourage and support those who have not yet embraced these services.

D. Use of digital loans/credit services: The use of digital loans and credit services is an important aspect of digital financial inclusion, as it reflects respondents' willingness and ability to access credit through online platforms. These services provide quick, convenient, and often paperless access to funds, which can be particularly beneficial for individuals engaged in agro and food processing activities (Ikmanila, R., & Djastuti, I. 2025). By assessing their usage helps in understanding the extent to which respondents rely on digital channels for their financial needs.

Table 4 : Use of digital loans/credit services

Response	No of Respondents	Percentage (%)
Yes	54	40.3
No	80	59.7
Total	134	100

Interpretation: The table indicates that **40.3%** of respondents use digital loans or credit services, while a majority of **59.7%** do not utilize these facilities. This suggests that although a considerable portion of respondents has adopted digital credit options, a larger segment still relies on traditional or non-digital sources of borrowing. Therefore, the findings highlight moderate adoption of digital credit services, with significant scope for increasing awareness, trust, and accessibility among users.

E. Access to online subsidies: Access to online subsidies is an important indicator of how effectively respondents are able to utilize digital platforms to avail government benefits and financial support schemes. It reflects the practical application of digital financial literacy in accessing subsidies, grants, and assistance programs, particularly in the agro and food processing sector. By evaluating this access helps in understanding the level of digital inclusion and the ease with which respondents can benefit from government initiatives.

Table 5: Access to online subsidies

Response	No of Respondents	Percentage (%)
Yes	66	49.3
No	68	50.7
Total	134	100

Interpretation: The table indicates that **49.3%** of respondents have access to online subsidies, while a slightly higher proportion, **50.7%**, do not have such access. This near-equal distribution suggests that although digital platforms are being utilized by a significant number of respondents, a large segment still faces barriers in accessing online subsidy schemes. Therefore, the findings of this study highlight the need to improve awareness, accessibility, and support systems to ensure wider utilization of digital subsidy services.

F. Mode of financial transactions: The mode of financial transactions is a key indicator of the extent to which respondents have adopted digital financial practices in their daily activities. It reflects whether individuals prefer digital methods such as UPI, mobile banking, and online transfers, or continue to rely on traditional cash-based transactions. Understanding this preference helps in assessing the overall shift towards a cashless economy and the level of digital financial integration among respondents.

Table 6: Mode of financial transactions

Response	No of Respondents	Percentage (%)
Mostly Digital	73	54.5
Mostly Cash	42	31.3
Both Equally	19	14.2
Total	134	100

Interpretation: The table indicates that a majority of respondents, **54.5%**, primarily use **digital modes** for financial transactions, highlighting a strong inclination towards cashless practices. Meanwhile, **31.3%** still prefer **cash transactions**, and **14.2%** use **both modes equally**, indicating a transitional phase among a

segment of respondents. Overall, the findings suggest a growing adoption of digital transactions, although a significant portion continues to rely on cash, pointing to the need for further encouragement of digital financial practices.

G. Ease of using digital tools : The ease of using digital tools is an important factor in determining the level of comfort and acceptance of digital financial services among respondents. It reflects how user-friendly and accessible individuals perceive digital platforms such as mobile banking apps, UPI systems, and other online financial services (Kenia, Y., Hadke, V., Shah, S. N., Iyengar, L., & Kumar, A. 2025). Assessing this aspect helps in understanding the practical challenges faced by users and their overall experience with digital technologies.

Table 7: Ease of using digital tools

Response	No of Respondents	Percentage (%)
Easy	80	59.7
Moderate	40	29.9
Difficult	14	10.4
Total	134	100

Interpretation: The table indicates that a majority of respondents, 59.7%, find digital tools **easy** to use, suggesting a positive user experience and good level of digital adaptability. In addition to that, 29.9% perceive the usage as **moderate**, indicating some level of difficulty or learning requirement. However, 10.4% of respondents find digital tools **difficult** to use, highlighting the presence of usability challenges for a smaller segment. Therefore, the findings of this paper suggest that while most respondents are comfortable with digital tools, there is still a need to simplify processes and provide support to enhance user experience for all.

H. Key Findings

- ❖ The study found that digital financial tools are widely adopted among farmers and agro-based respondents in Chhattisgarh, indicating a growing shift towards digital financial inclusion.
- ❖ A majority of respondents (69.4%) use UPI on a daily basis, showing strong acceptance and dependence on digital payment systems for routine financial transactions.
- ❖ The usage of e-wallets was found to be moderate, as 38.1% of respondents use them occasionally and 35.1% use them regularly, while a significant proportion still avoid using e-wallet services.
- ❖ Nearly half of the respondents (49.3%) frequently use digital banking services, reflecting a considerable level of engagement with online banking and mobile banking platforms.
- ❖ The adoption of digital loans and credit services remains comparatively low, as only 40.3% of respondents use such facilities, whereas the majority continue to rely on traditional borrowing methods.
- ❖ Access to online subsidy schemes is still limited, with 50.7% of respondents reporting that they do not have access to online subsidy services.
- ❖ More than half of the respondents (54.5%) prefer mostly digital modes of financial transactions, indicating a gradual movement towards a cashless economy in the agricultural sector.
- ❖ A notable proportion of respondents (31.3%) still prefer cash transactions, suggesting that traditional financial practices continue to influence financial behavior among farmers.
- ❖ The majority of respondents (59.7%) found digital financial tools easy to use, indicating a positive level of digital adaptability and acceptance among users.
- ❖ Some respondents continue to face challenges in using digital financial services due to issues such as limited digital literacy, technological barriers, lack of awareness, and inadequate infrastructure.
- ❖ The study highlights that government initiatives such as Digital India and e-NAM have positively influenced the adoption of digital financial practices among agricultural stakeholders.
- ❖ The findings suggest that there is significant scope for improving awareness, accessibility, trust, and digital literacy to ensure wider adoption of digital financial tools in the agricultural sector of Chhattisgarh

DISCUSSION

The present study discusses the growing importance and adoption of digital financial tools in the agricultural sector of Chhattisgarh and highlights their contribution towards financial inclusion, operational efficiency, and modernization of financial transactions among farmers and agro-based respondents. The data analysis reveals that a majority of respondents (69.4%) use UPI on a daily basis, while only 6.7% never use it, indicating a strong acceptance of digital payment systems and reflecting the positive influence of Digital India initiatives on rural financial behavior. The findings further show that e-wallet usage remains moderate, with 38.1% of respondents using them occasionally and 35.1% regularly, whereas 26.9% still avoid using e-wallet services, suggesting that awareness and trust in such platforms require further improvement. In terms of digital banking services, 49.3% of respondents frequently use online banking facilities and 35.8% use them sometimes, demonstrating a considerable level of engagement with formal digital financial systems. However, the adoption of digital loans and credit services remains comparatively low, as only 40.3% of respondents utilize such services while 59.7% continue to rely on traditional borrowing methods, indicating barriers related to accessibility, trust, and digital literacy. Similarly, access to online subsidy schemes remains limited, with 50.7% of respondents reporting that they do not have access to online subsidy services, highlighting the need for improved awareness and infrastructural support. The analysis also indicates that 54.5% of respondents prefer mostly digital modes of financial transactions, whereas 31.3% still prefer cash transactions, reflecting a gradual but incomplete transition toward a cashless economy in the agricultural sector. Furthermore, 59.7% of respondents found digital financial tools easy to use, while 10.4% experienced difficulty in using them, indicating that although digital adaptability is increasing, challenges such as inadequate digital literacy, technological barriers, poor internet connectivity, and lack of awareness continue to hinder effective utilization. These findings are consistent with previous studies by Singh (2022), Jaiswal et al. (2021), and Tyngkan (2018), which emphasized the role of digital financial technologies, e-NAM, and FinTech innovations in improving agricultural marketing, financial accessibility, and agribusiness efficiency. Therefore, the study concludes that digital financial tools have positively influenced the agricultural sector of Chhattisgarh; however, stronger policy support, digital literacy programmes, infrastructural development, and awareness initiatives are necessary to ensure wider accessibility, effective utilization, and sustainable digital financial inclusion among farmers.

CONCLUSION

The study concludes that digital financial tools have significantly influenced the agricultural sector of Chhattisgarh by improving financial accessibility, operational efficiency, and financial inclusion among farmers and agro-based respondents. The findings reveal a strong adoption of digital payment systems, particularly UPI, digital banking services, and other fintech solutions, indicating a gradual shift toward a cashless and digitally connected agricultural economy. The analysis also highlights that digital platforms such as e-NAM, online banking, and mobile financial services have enhanced transparency, market access, and financial convenience for respondents. However, despite the growing acceptance of digital financial tools, challenges such as limited digital literacy, inadequate technological infrastructure, lack of awareness, and restricted access to online subsidies and digital credit services continue to hinder wider adoption. The study further indicates that a considerable proportion of respondents still rely on traditional cash-based transactions and non-digital financial systems. Therefore, the research emphasizes the need for stronger policy support, digital literacy programmes, infrastructural development, and awareness initiatives to ensure effective utilization and sustainable expansion of digital financial services in the agricultural sector of Chhattisgarh. Therefore, this study highlights that, the digital financial technologies possess significant potential to modernize agricultural finance and contribute toward inclusive rural economic development.

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