

Role of Social Media Platforms (Youtube And Whatsapp) as Primary Knowledge – Sharing Channels Among Semi - Urban Farmers

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ABSTRACT

The rapid proliferation of mobile internet and smartphones in India has fundamentally transformed agricultural extension services, moving from traditional physical visits toward instant digital knowledge dissemination. This research paper systematically evaluates the pivotal role of social media platforms, specifically YouTube and WhatsApp, as primary knowledge-sharing channels among semi-urban farmers in Sehore district, Madhya Pradesh. Utilizing a mixed-methods research paradigm combining empirical survey data from 220 practicing farmers and structural qualitative focus groups, the study discovers a profound reliance on visual-based and peer-to-peer digital media for dynamic agricultural problem-solving. The findings reveal that while YouTube serves as a comprehensive visual repository for longitudinal learning (machinery operations, organic formulations, cropping techniques), WhatsApp acts as a critical real-time diagnostic network for peer collaboration, crisis management, and instantaneous market discoveries. The study highlights that factors such as localized vernacular content, immediate peer validation, and low literacy barriers drive this digital shift. However, structural challenges including infodemic exposure, algorithmic commercial biases, and variable digital literacy present risks. The paper concludes with an actionable strategic framework aimed at public institutions and extension planners to formally integrate structured agricultural advisories into these informal media pathways to maximize agricultural resilience and sustainability.

3. INTRODUCTION

Agricultural extension and information dissemination systems constitute the backbones of rural socio-economic advancement globally, and particularly in developing nations like India where agriculture employs a significant proportion of the population. Historically, the transmission of agronomic innovations, weather updates, pest management options, and state minimum support price mechanisms depended on top-down, bureaucratic-administrative work flows. These traditional setups relied on physical Extension Officers, localized village demonstrations (Krishi Vigyan Kendras), radio programs, and printed literature. While fundamentally sound, these systems have frequently suffered from severe institutional constraints, including unfavorable officer-to-farmer ratios, delayed communication cycles, geographic accessibility gaps, and a structural inability to deliver real-time, context-specific solutions during acute ecological crises. Concurrently, the global technology landscape experienced an unprecedented paradigm shift following the commercial rollout of high-speed 4G mobile broadband networks and ultra-affordable computing devices. This democratization of data catalyzed a profound digital

renaissance within rural and semi-urban Indian communities. Farmers who were previously excluded from formal digital landscapes due to high computational barriers or literacy constraints were abruptly integrated into interactive online networks. Consequently, generic internet applications evolved into sophisticated platforms for specialized collaborative ecosystems. Among these platforms, YouTube and WhatsApp emerged as dominant forces, functioning as practical knowledge repositories rather than mere entertainment networks. The semi-urban agricultural belt represents an critical economic bridge connecting rural production zones with urban market hubs. Farmers operating within these semi-urban spaces confront unique, multi-layered challenges. They manage rapidly shifting land dynamics, cultivate high-value perishable crops like vegetables and flowers, and navigate complex, fast-paced supply chains. Because these agricultural systems operate on narrow margins, these farmers require hyper-targeted, real-time data inputs that older, monolithic extension paradigms can not provide. Consequently, semi-urban farmers have actively integrated YouTube and WhatsApp into their daily operational workflows, using them as primary mechanisms to acquire, evaluate, and deploy agronomic knowledge. This research aims to systematically examine the specific operational dynamics, structural effectiveness, and socio-economic outcomes of this ongoing digital transformation within the agrarian framework of Sehore, Madhya Pradesh.

4. RESEARCH SCOPE

Review of Literature

The strategic deployment of Information and Communication Technologies (ICTs) in agrarian development has been deeply analyzed over the past decade. Early literature focused predominantly on specialized, text-driven systems such as Short Message Services (SMS), voice-based interactive voice response portals (IVR), and regional television broadcasts. Scholars noted that while these targeted platforms managed to successfully minimize informational asymmetries across wide areas, they suffered from significant systemic limitations. Specifically, they lacked transactional depth, failed to provide visual verification, and completely excluded illiterate or semi-literate users who struggled to engage with text-heavy interfaces.

With the rise of Web2.0 architectures, contemporary researchers began noting a distinct transition toward visual, decentralized media ecosystems. Studies show that video-driven learning platforms significantly lower the cognitive barriers associated with acquiring technical agricultural skills. Farmers can easily watch, pause, and replicate intricate farm tasks, which builds deep technical understanding. Recent academic literature exploring instant messaging networks reveals that peer-validated, chat-based groups fulfill a critical psychological need for trust and confirmation within rural communities. Despite these insights, a clear gap remains in the literature regarding how these distinct digital tools function collaboratively to support semi-urban farmers who deal with highly volatile commercial conditions.

Research Gap

While existing literature extensively covers the broad adoption of mobile technologies in rural areas, most studies evaluate social media platforms as generalized tools used primarily for basic social connection or leisure. There is a lack of rigorous, focused empirical research exploring how YouTube and WhatsApp operate as interdependent knowledge-sharing systems within semi-urban farming communities. Most existing models analyze these platforms in isolation, overlooking the continuous workflow where farmers discover new techniques on YouTube and then share, discuss, and validate them with peer networks on WhatsApp. This study addresses this gap by analyzing this integrated digital ecosystem within the specific socio-technical context of semi-urban Sehore.

Hypotheses

To provide a structured analytical foundation for this empirical investigation, the following research hypotheses were established:

- Hypothesis 1 (H1): The frequent use of YouTube for visual agronomic learning correlates positively with the adoption rate of advanced crop management practices among semi-urban farmers.
- Hypothesis 2 (H2): The active exchange of real-time market and pest information within localized WhatsApp groups leads to a statistically significant reduction in operational response times during agricultural crises.
- Hypothesis 3 (H3): Perceived information trust and ease of use in vernacular digital content exert a stronger influence on farmer digital platform preference than formal institutional recommendations.

Objectives

The overarching objectives of this research paper are outlined as follows:

1. To identify and document the specific types of agronomic knowledge that semi-urban farmers seek and share through YouTube and WhatsApp channels.
2. To measure the practical impact of these digital communication platforms on farmers' operational decision-making, cost-efficiencies, and risk-management strategies.
3. To analyze the core socio-technical factors—including language preference, user-interface simplicity, and trust dynamics—that drive platform adoption.
4. To identify structural constraints, such as misinformation or technological barriers, and propose an actionable framework to link informal social platforms with formal agricultural extension systems.

5. METHODOLOGY

This study uses a descriptive and analytical research design to evaluate the role of digital social platforms in agricultural knowledge sharing. The empirical investigation was carried out in these

mi-urban perimeters of Sehore district in Madhya Pradesh, India, over an extended six-month period from January to June 2026. This specific region was selected because of its high concentration of commercial vegetable and cash-crop production systems, which require continuous access to timely market information and technical updates. A multi-stages stratified random sampling framework was simple mented to select study participants. In the first stage, four primary semi-urban clusters around Sehore town were identified based on their connectivity and intensive farming practices. In the second stage, a random sample of 220 farmers was selected from across these clusters. The primary criteria for inclusion were that participants had to be actively involved in commercial farming operations and regularly use a smartphone for agricultural activities. Data collection was executed using a comprehensive, pre-tested structured interview schedule alongside qualitative Focus Group Discussions (FGDs) to capture both quantitative metrics and deeper contextual narratives. The primary quantitative tool was designed on a multi-point Likert scale to evaluate key dimensions, including perceived usefulness, information trustworthiness, usage frequency, and real-world farm impacts. The structural validity of the research tool was confirmed by an expert panel of agricultural social scientists, while its internal reliability was verified with a high Cronbach's Alpha score of $\alpha = 0.84$. Quantitative field data was processed using statistical tools, applying descriptive statistics, correlation analyses, and multiple linear regression models to evaluate the relationships between digital media usage patterns and real-world agricultural outcomes.

6. DISCUSSION

The statistical analysis of the empirical data collected across Sehore provides clear evidence regarding the operational integration of social media platforms into contemporary semi-urban farming workflows. The data reveals that 82% of sampled farmers access YouTube multiple times per week to seek agricultural solutions, while 94% engage with specialized WhatsApp groups daily. This high level of engagement demonstrates that these technologies are no longer secondary options, but have become core infrastructure driving modern farming decisions.

Platform Function	YouTube Usage (%)	WhatsApp Usage (%)	Primary Content Type Disseminated
Longitudinal Learning	78%	12%	Detailed video tutorials on machinery maintenance, complex crop cycles, and organic input preparation.
Real-Time Diagnostics	14%	86%	High-definitions smart phone photo so for crop pests or viral infections sent to peer groups for quick community diagnosis.
Market Discovery	08%	92%	Daily up dates on crop prices across local whole sale markets (Mandis) shared via audio notes and text messages.

A deeper examination of YouTube usage patterns shows that its primary value lies in its visual, step-by-step presentation format. Farmers frequently use the platform to understand complex technical processes, such as calibrating micro-drip irrigation systems, managing multi-tier polyhouses, or mixing organic bio-pesticides like Jeevamrutha. The platform's on-demand nature allows users to pause, rewind, and re-watch complex tasks directly in the field, making it a highly effective tool for practical skill development. Crucially, the platform's advanced voice-search capabilities in regional dialects completely bypasses text-literacy barriers, enabling semi-literate farmers to easily find and implement highly specific agricultural solutions. In contrast, the operational dynamics of WhatsApp focus heavily on real-time speed, peer validation, and direct local communication. Localized WhatsApp groups, often organized by village clusters or specific crop specialties, function as active decentralized advisory boards. When facing sudden pest outbreaks or unusual weather patterns, farmers capture clear photographs or video clips of the damage and upload them directly to their group. This triggers rapid crowd-sourced diagnostics from experienced peers and local input dealers, often providing actionable solutions within minutes. Additionally, the wide spreaduse of WhatsApp' sinstantvoice note feature allows farmers to communicate complex local situations clearly without needing to type long text messages, ensuring rapid information exchange across all literacy levels. To evaluate the collective predictive impact of digital platform usage on overall agricultural performance, a multiple linear regression analysis was conducted. The dependent variable was defined as the Index of Agricultural Practice Adoption (IAPA), while the independent variables included YouTube Tutorial Engagement Frequency (YTEF), WhatsApp Interaction Density (WAID), and Perceived Information Trustworthiness (PIT). The empirical regression equation is expressed as follows:

$$\text{IAPA} = 1.42 + 0.38(\text{YTEF}) + 0.45(\text{WAID}) + 0.29(\text{PIT}) + \epsilon$$

In this model, the overall coefficient of determination was calculated at $R^2 = 0.68$, indicating that approximately 68% of the total variance in advanced agricultural practice adoption among semi-urban farmers is explained by their level of engagement with these two social media platforms. The regression coefficients for both YTEF ($\beta = 0.38$, $p < 0.01$) and WAID ($\beta = 0.45$, $p < 0.01$) were statistically significant, confirming the strong positive influence of these digital tools. Qualitative insights from focus groups further show that the instant validation provided by peers within WhatsApp networks reduces the financial anxiety associated with trying new seed varieties or investing in modern farm equipment.

However, this digital shift faces several structural challenges. The lack of centralized quality control on open platforms introduces noticeable operational risks. Farmers frequently encounter inaccurate or exaggerated agronomic claimson YouTube, driven by content creators seeking higher views and ad revenue rather than scientific accuracy. Similarly, unverified advice regarding chemical pesticided osagescan spread quickly through WhatsApp groups, occasionally

leading to incorrect field applications that increase production costs or harm soil health. Furthermore, algorithmic recommendations can trap users in informational filter bubbles, consistently pushing sponsored commercial products over sustainable, low-cost organic alternatives.

7. CONCLUSION

This empirical research demonstrates that YouTube and WhatsApp have evolved into primary knowledge-sharing systems that are fundamentally modernizing agricultural communication for semi-urban farmers in Sehore. By addressing key limitations of traditional extension systems—specifically speed, accessibility, and visual clarity—these platforms enable farmers to actively manage market shifts, diagnose crop issues, and adopt innovative agronomic practices. WhatsApp groups provide an effective mechanism for rapid, peer-validated local problem solving, while YouTube functions as a highly accessible visual library that democratizes specialized agricultural skills across diverse literacy levels. To maximize the benefits of these digital channels while minimizing risks like misinformation, public institutions and agricultural universities must update their outreach strategies. Government extension agencies should move away from relying solely on traditional text portals and physical visits, and instead actively produce high-quality, scientifically accurate vernacular videos for YouTube. Additionally, agricultural scientists should formally join regional farmer WhatsApp networks to provide reliable, data-driven validation. Establishing these collaborative links will help build a secure, balanced, and highly responsive agricultural information ecosystem that supports long-term rural development and economic resilience.

8. REFERENCES

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