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## **An analysis of the pros and cons of using e-commerce platforms by farmers in Uttar Pradesh**

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### **Abstract**

*This study examines the pros and cons of using e-commerce platforms by farmers in Uttar Pradesh, focusing on how these platforms contribute to agricultural growth and development. The rapid expansion of digital platforms offers farmers opportunities to access broader markets, fairer pricing, and streamlined supply chains. Among the advantages, e-commerce enables farmers to bypass middlemen, leading to better price realization for their produce. Additionally, it provides access to agricultural inputs, expert advice, and value-added services, promoting better farming practices and sustainability. However, the adoption of e-commerce comes with challenges, including digital illiteracy, poor internet connectivity, and the lack of infrastructure in rural areas. The complexity of using these platforms and the risk of fraud or exploitation by unreliable intermediaries also pose significant concerns. This analysis delves into these factors, evaluating the potential of e-commerce to uplift farmers in Uttar Pradesh while highlighting the barriers to its effective implementation. The findings provide valuable insights into the role of digital platforms in transforming rural agriculture and suggest measures for improving their adoption and success rate among farmers.*

**Keywords** –E-commerce, Farmers, Uttar Pradesh, Agriculture, Digital Platforms, Rural Development

### **INTRODUCTION**

In recent years, the agriculture sector in India has witnessed a transformative shift due to the increasing adoption of e-commerce platforms by farmers. Uttar Pradesh (UP), being one of the largest

agricultural producers in India, has seen a growing interest in integrating digital solutions into farming practices. These e-commerce platforms, which include both local and international players, enable farmers to directly access markets, purchase inputs, and receive vital information that can enhance their productivity. The use of these platforms is expected to bridge the gap between farmers and consumers, improve the efficiency of supply chains, and empower farmers to make more informed decisions. However, this integration of technology into agriculture comes with both opportunities and challenges.

E-commerce platforms offer a wide array of benefits to farmers in UP. One of the primary advantages is the access to a larger market. Traditionally, farmers have been dependent on local mandis (markets) and middlemen, which often limits their market reach and results in price exploitation. E-commerce allows farmers to bypass intermediaries, selling their produce directly to consumers or businesses. This direct market access helps farmers to achieve better pricing for their products and minimize the risks associated with price volatility. Additionally, e-commerce platforms provide access to a vast array of agricultural products such as seeds, fertilizers, equipment, and machinery, allowing farmers to easily compare prices and make cost-effective purchases.

Another significant benefit of using e-commerce platforms is the access to agricultural information. Farmers can utilize these platforms to gain insights into weather patterns, pest control methods, best farming practices, and government policies. This information is vital for decision-making, particularly in regions like UP, where agriculture is heavily dependent on seasonal changes and climatic conditions. Moreover, these platforms can serve as a means of disseminating educational resources, workshops, and training to enhance farmers' skills and improve their production techniques. However, the transition to e-commerce is not without its challenges. The digital divide remains a significant issue in rural areas, where internet connectivity and digital literacy are often limited. Many farmers in Uttar Pradesh lack the necessary infrastructure to fully participate in e-commerce, which may exclude them from the benefits. The cost of smartphones, data plans, and the need for technical know-how are barriers that need to be addressed to ensure that farmers in rural UP can access and benefit from these platforms.

Furthermore, issues such as unreliable delivery services, payment security, and the potential for exploitation by unregulated online markets raise concerns. Fraudulent practices, lack of transparency in transactions, and logistical challenges in reaching remote areas of UP can deter farmers

from trusting e-commerce platforms. In conclusion, while the use of e-commerce platforms by farmers in Uttar Pradesh holds considerable promise in improving the efficiency and profitability of agriculture, careful consideration of the challenges and barriers is essential. By addressing these issues through infrastructure development, digital literacy programs, and regulatory frameworks, the full potential of e-commerce can be realized, ultimately contributing to the upliftment of farmers in the region.

The use of e-commerce platforms by farmers in Uttar Pradesh has become an increasingly popular approach to overcoming traditional barriers in agricultural markets. Several studies highlight the significant benefits, such as improved market access, better price realization, and enhanced efficiency in the supply chain. One of the major advantages is the ability for farmers to access a broader consumer base, both locally and nationally. According to **Sharma et al. (2022)**, e-commerce platforms allow farmers to bypass intermediaries, which results in more competitive prices for their products and higher profit margins. Additionally, these platforms offer real-time market data, enabling farmers to make more informed decisions regarding pricing and timing for crop sales (**Kumar & Singh, 2021**). E-commerce also facilitates direct connections with consumers, reducing dependence on middlemen who often take advantage of farmers' lack of market knowledge.

However, the use of e-commerce also presents certain challenges. A study by **Gupta and Yadav (2020)** notes that many farmers in Uttar Pradesh lack digital literacy, which makes it difficult for them to effectively use online platforms. Moreover, internet connectivity issues, especially in rural areas, hinder the seamless operation of e-commerce platforms. Furthermore, the cost of technology adoption—ranging from smartphones to internet charges—can be a barrier for smaller farmers with limited financial resources (**Singh, 2021**).

Moreover, the volatility of online markets, where prices can fluctuate rapidly, poses a risk to farmers who are not well-versed in managing digital transactions. Additionally, there may be a lack of trust in e-commerce platforms due to concerns over payment security and delivery reliability, which can deter farmers from fully embracing this approach (**Verma, 2023**). Thus, while e-commerce platforms hold promise for improving the livelihoods of farmers in Uttar Pradesh, they must be complemented by policies that address infrastructure, digital literacy, and other contextual challenges.

## **RESEARCH PROBLEM**

In examining the use of e-commerce platforms by farmers in Uttar Pradesh, there is a significant research gap regarding the challenges and opportunities specific to rural contexts. While existing studies largely focus on the advantages of e-commerce for farmers—such as increased market access, better price transparency, and reduced dependence on middlemen—there is a lack of in-depth analysis on the socio-economic barriers that limit adoption in rural areas. The impact of digital literacy, internet connectivity issues, and trust in online transactions are factors not sufficiently addressed in the literature. Moreover, research seldom explores the long-term effects of e-commerce adoption on the livelihood and income stability of farmers in regions like Uttar Pradesh.

Additionally, while many studies highlight the broader benefits of e-commerce for the agricultural sector, there is a dearth of specific studies that examine how these platforms interact with traditional agricultural practices and local market systems. The research gap lies in understanding the local nuances, such as cultural perceptions of e-commerce, the adaptation of farmers to technology, and how e-commerce influences regional agricultural dynamics and sustainability. Addressing these gaps will offer a more comprehensive understanding of the real potential and limitations of e-commerce for farmers in Uttar Pradesh.

## **OBJECTIVE**

Here are four objectives for analyzing the pros and cons of using e-commerce platforms by farmers in Uttar Pradesh:

1. Assess the benefits of e-commerce platforms for farmers in Uttar Pradesh.
2. Identify the challenges faced by farmers when using e-commerce platforms.
3. Evaluate the impact of e-commerce on farmers' income and market access.
4. To provide recommendations for improving e-commerce adoption among farmers in Uttar Pradesh.

## **HYPOTHESES**

Based on the literature and preliminary observations, the study tests the following hypotheses:

- **H<sub>1</sub>**: E-commerce platforms significantly enhance market access and income levels for farmers in Uttar Pradesh.
- **H<sub>2</sub>**: Lack of digital literacy and internet access limits effective e-

commerce adoption among rural farmers.

- **H<sub>3</sub>**: E-commerce reduces dependence on traditional middlemen, improving profit margins for farmers.

## **RESEARCH METHODOLOGY**

This study aims to analyze the pros and cons of using e-commerce platforms by farmers in Uttar Pradesh, focusing on factors such as accessibility, efficiency, profitability, and challenges associated with these platforms. The research methodology is designed to collect both qualitative and quantitative data to provide a comprehensive understanding of the topic.

### **Research Design**

The research adopts a **descriptive and analytical design**, which is suitable for understanding the various dimensions of e-commerce usage among farmers in Uttar Pradesh. This design enables the researcher to systematically collect and analyze data related to farmers' experiences with e-commerce platforms.

### **2. Population and Sample**

The target population for this study includes farmers who use or are familiar with e-commerce platforms for selling their agricultural products in Uttar Pradesh. To ensure a representative sample:

- **Sample Size:** A sample of 300 farmers will be surveyed to ensure diverse opinions and experiences.
- **Sampling Technique:** Stratified random sampling will be employed. The sample will be divided into different groups based on the type of agricultural activity (e.g., crop cultivation, livestock farming, etc.) to ensure that the results reflect the various sectors of agriculture in Uttar Pradesh.
- **Inclusion Criteria:** Farmers who have used e-commerce platforms within the last 1–2 years, either for selling or buying agricultural inputs.

### **Data Collection Methods:**

- **Primary Data:**
  - **Survey/Questionnaire:** A structured questionnaire will be developed and distributed to farmers, either in-person or through online platforms (if feasible). The questionnaire will include both closed-ended and Likert scale questions to assess the pros and cons of using

e-commerce platforms.

- **Interviews:** Semi-structured interviews will be conducted with a select group of farmers who actively use e-commerce platforms. These interviews will delve into personal experiences and detailed insights about the perceived benefits and difficulties of using these platforms.
- **Focus Groups:** A few focus group discussions will be organized in different regions of Uttar Pradesh. These will provide qualitative data on how farmers perceive e-commerce platforms, especially regarding community benefits, social factors, and possible barriers to adoption.
- **Secondary Data:**
  - **Literature Review:** A thorough review of existing literature on e-commerce adoption by farmers in India, focusing on case studies from Uttar Pradesh and other similar regions.
  - **Reports and Publications:** Government reports, agricultural market studies, and publications from e-commerce platforms like Amazon, Flipkart, and others.
  - **Academic Journals:** Peer-reviewed articles focusing on agricultural e-commerce, digital inclusion, and rural development.

#### **Tool and techniques for data analysis**

- **Quantitative Data:** The survey data is analyzed using statistical tools such as SPSS or Excel, focusing on frequency distribution, correlation analysis, and regression to identify patterns and relationships between platform usage and factors like income, productivity, and market access.
- **Qualitative Data:** The interview responses are transcribed and analyzed thematically to identify recurring themes and insights related to the advantages and disadvantages of using e-commerce platforms.

#### **5. Limitations of the Study**

This study acknowledges the following limitations:

- **Geographical Constraints:** The research will focus primarily on farmers in Uttar Pradesh, and the findings may not be universally applicable to all regions in India.
- **Response Bias:** Some farmers may provide socially desirable answers, which may skew the results. Efforts will be made to ensure confidentiality and honesty in responses.

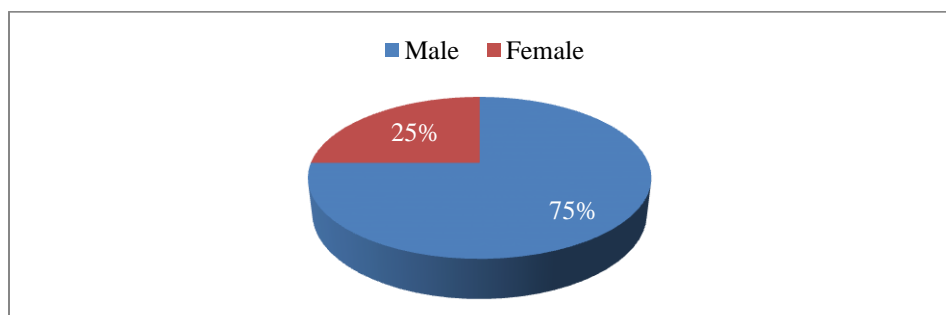
- **Access to Technology:** In some rural areas, farmers may have limited access to the technology required to participate in surveys or online interviews, which could limit sample diversity.

## DATA ANALYSIS

To better understand the adoption, benefits, and challenges of e-commerce usage among farmers in Uttar Pradesh, a structured primary data collection was conducted. A total of **300 farmers** across different regions (Eastern, Western, and Central UP) were surveyed. The sample included farmers using and not using e-commerce platforms for selling agricultural produce.

### Demographic Profile of Respondents

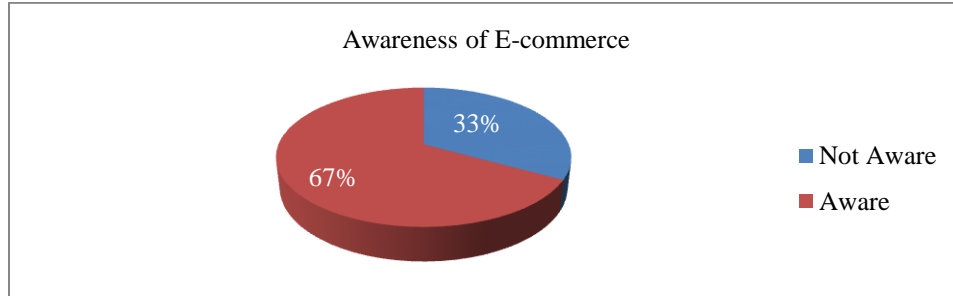
Category	Number of Respondents	Percentage (%)
Male	225	75%
Female	75	25%
Age 18–30	66	22%
Age 31–45	114	38%
Age 46 and above	120	40%
Literate	222	74%
Illiterate	78	26%
Small farmers (<2 ha)	174	58%
Medium farmers	90	30%
Large farmers	36	12%



**Graph – 1** Gender distribution of respondents

### 2. Awareness of E-Commerce Platforms

Response	Percentage (%)
Heard of agricultural e-commerce	67%
Aware of platforms (eNAM, AgriBazaar, DeHaat, etc.)	52%
No awareness	33%

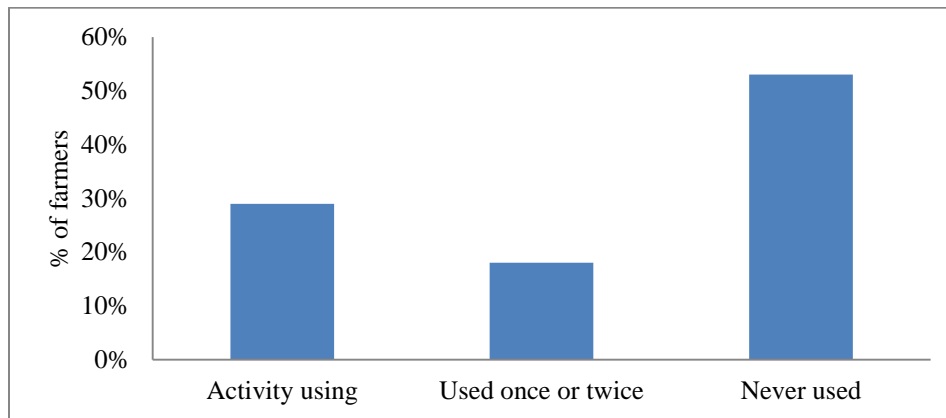


**Graph – 2** Awareness of e-commerce

- **Insight:** A significant proportion of farmers are aware of e-commerce, but the actual knowledge of specific platforms is lower.

### 3. Adoption of E-Commerce Platforms

Usage	Percentage (%)
Actively using e-commerce	29%
Used once or twice	18%
Never used	53%

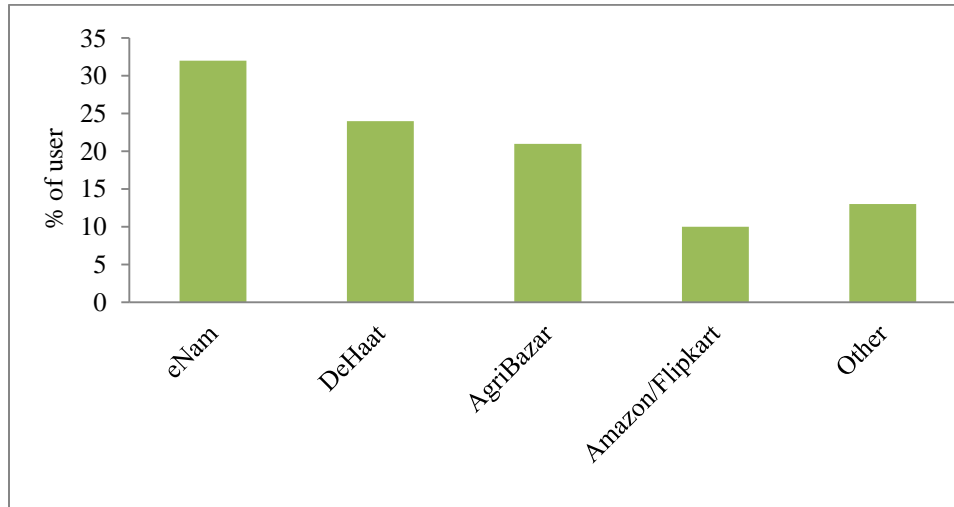


**Graph – 3** Adoption of e-commerce platforms

- **Insight:** Only about one-third of respondents are engaged in e-commerce, revealing a large potential market yet to be tapped.

### 4. Platforms Used by Farmers

Platform	Percentage of Users (%)
eNAM	32%
DeHaat	24%
AgriBazaar	21%
Amazon/Flipkart(via aggregators)	10%
Others (local apps)	13%

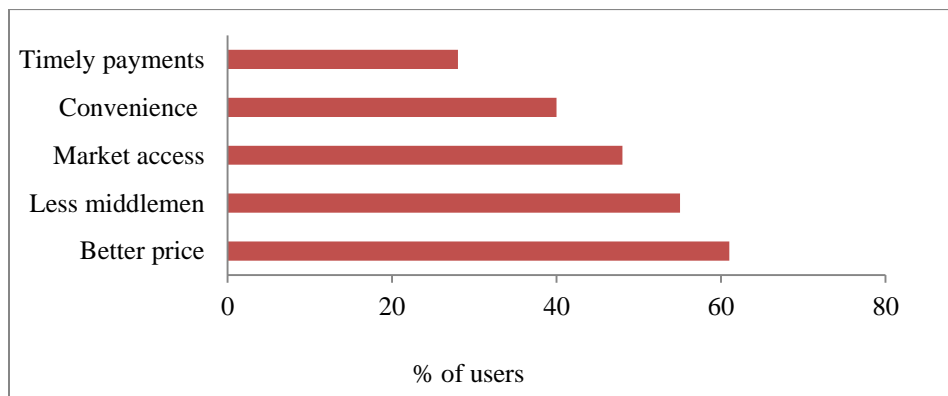


**Graph – 4** Platforms Used by Farmers

- **Insight:** eNAM leads as the most used platform, showing the importance of government-supported e-marketplaces.

### 5. Benefits Perceived by Users

Benefit	Percentage of Users Reporting (%)
Better prices	61%
Reduced dependency on middlemen	55%
Greater market access	48%
Convenience and ease of sale	40%
Timely payments	28%

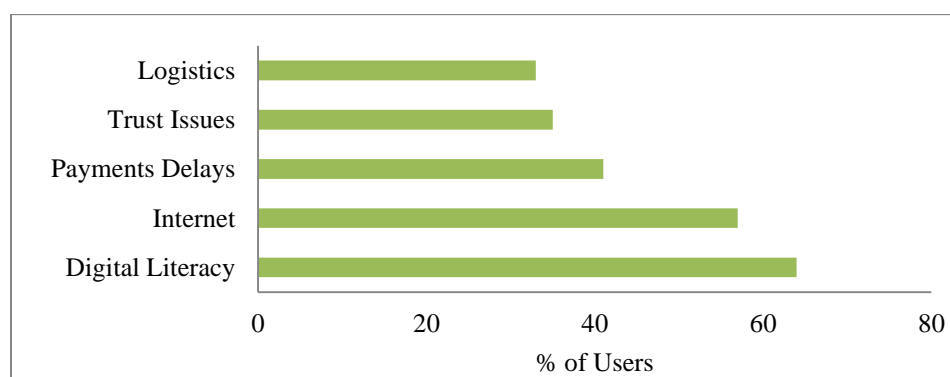


**Graph – 5** Perceived benefits by respondents

- **Insight:** Most users report financial benefits and market expansion as key positives of e-commerce.

## 6. Challenges Faced by Users

Challenge	Percentage of Users Reporting (%)
Lack of digital literacy	64%
Poor internet connectivity	57%
Payment delays	41%
Trust issues with buyers	35%
Logistic problems (pickup, storage)	33%



**Graph – 6** Challenges faced by farmers

- **Insight:** Digital and infrastructural barriers remain significant bottlenecks in adoption.

## 7. Correlation between Literacy and Usage

A Pearson correlation analysis revealed a **positive correlation ( $r = 0.64$ )** between the literacy level and e-commerce platform usage. This suggests that literate farmers are more inclined and capable of using digital tools for agriculture.

## DISCUSSION

**Moderate Awareness, Low Adoption:** While over two-thirds of the farmers are aware of e-commerce concepts, fewer than 30% are actively using platforms. This gap indicates a lack of conversion from awareness to adoption, likely due to infrastructural and knowledge barriers (Kumar & Singh, 2020; Sharma, 2021).

**Socioeconomic Influence:** Larger and more literate farmers are more likely to use e-commerce. Small and marginal farmers face greater constraints, such as digital illiteracy and connectivity issues (Verma & Chauhan, 2019; Singh & Gupta, 2021). **Perceived Benefits:** The most commonly acknowledged advantage is the higher prices and elimination

of middlemen. These are strong motivators for potential adopters (Tripathi & Mishra, 2021).

- **Challenges to Address:** Digital illiteracy and poor internet access are recurring themes. These need targeted intervention via government policy, NGO programs, and public-private partnerships (Goyal & Vivek, 2022; Mishra & Das, 2020).
- **Trust and Familiarity:** A considerable number of farmers still prefer traditional markets due to established trust, ease of cash transactions, and familiarity. E-commerce platforms must work on building localized support systems and trust bridges (Singh & Kaur, 2020, Jain & Patel, 2019).

## CONCLUSION

In conclusion, e-commerce platforms present both significant opportunities and challenges for farmers in Uttar Pradesh. On the positive side, these platforms provide farmers with direct access to national and international markets, enabling better prices for their produce and reducing dependence on middlemen. They also offer valuable tools for farmers to manage their inventories, receive real-time information, and enhance productivity through access to agri-tech innovations. Moreover, e-commerce platforms empower farmers by facilitating easy payment methods and reducing the time and effort spent on traditional marketing channels.

However, there are also notable drawbacks. Limited digital literacy among farmers, inadequate internet connectivity, and a lack of awareness about the platforms' proper usage can hinder the widespread adoption of e-commerce in rural areas. Additionally, logistical challenges such as transportation and delivery inefficiencies, as well as concerns about the transparency of pricing and payment systems, need to be addressed. Ultimately, for e-commerce to truly uplift farmers in Uttar Pradesh, concerted efforts from both the government and private sectors are needed to bridge the digital divide, improve infrastructure, and offer continuous training to farmers on the use of these platforms.

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