**Original Research Article**

**A Critical Analysis on Role Performance of Agri-Input Dealers in Central Zone of Uttar Pradesh,India**

 **ABSTRACT**

**Aims:**
The study aims to critically analyse the role performance of agri-input dealers in the Central Zone of Uttar Pradesh, focusing on their effectiveness in delivering agricultural inputs and advisory services to farmers. It seeks to identify strengths and gaps in their performance, understand the challenges they face, and assess the need for capacity building and institutional support to enhance their contribution to agricultural development.

**Study Design:**
An ex-post facto research design was used to critically analyse the role performance of agricultural input dealers in agro-advisory services.

**Place and Duration of Study:**
The study was conducted in the Central Plain Zone of Uttar Pradesh, specifically in Kannauj and Farrukhabad districts, selected purposively. Data collection spanned from 2022 to 2023, covering 5 randomly chosen blocks from each district.

**Methodology:**
A multistage random sampling method was used to select participants. From each of the selected blocks, 25 input dealers with a minimum of five years of experience were chosen, resulting in a final sample size of 250 dealers. These individuals were engaged in delivering both agricultural inputs and extension services to farmers.

**Results:**

The study revealed that 64.80% of agricultural input dealers exhibited medium-level role performance in agro-advisory services, while 18.00% showed high performance and 17.20% low. Input dealers were most effective in delivering timely and relevant advice to farmers but less involved in training activities, field visits, and supplementary responsibilities. Item-wise analysis highlighted significant variation, suggesting the need for targeted capacity-building efforts.

**Conclusion:**
The paper underscores the importance of building institutional mechanisms, region-specific training programs, and stronger communication frameworks to empower input dealers as credible agro-advisors. Such measures are vital for improving the quality and reach of extension services in the agricultural sector.

*Key words:* **Agricultural input dealers, Agro-advisory services, Role performance, Extension services, Capacity building***.*

**1. INTRODUCTION**

Agriculture has long served as the foundation of India’s economy, providing food security, employment, and economic resilience to a significant portion of the population. It employs nearly 45.76% of the workforce and contributes around 15–16% to the country’s Gross Domestic Product (GDP) in 2022–23, underscoring its enduring importance in national development [1]. With its diverse agro-climatic zones and a wide range of farming systems, India supports a robust agricultural tradition.

Among the key stakeholders in the agricultural value chain, agro-input dealers play a crucial role. These dealers supply vital inputs such as seeds, fertilizers, pesticides, agricultural machinery, veterinary medicines, and animal feed. More importantly, they have evolved beyond the role of mere suppliers, serving as informal yet influential sources of agricultural knowledge and advisory support to farmers. While purchasing different inputs required for farming operations, the farmer naturally seeks guidance from the input dealer regarding the quality and quantity of those inputs [2]. As a result, dealers often become key decision-making influencers at the farm level.

India’s agri-inputs market alone boasts a substantial $44 billion valuation, highlighting the scale and strategic importance of this sector. Dealers also serve as a vital link between manufacturers and farmers, placing them in a unique position to disseminate the latest farm technologies directly to the grassroots—particularly significant in the era of economic liberalization and global trade [3].

The role performance of agri-input dealers in delivering agro-advisory services has become increasingly critical. Their performance is reflected not only in the delivery of timely and relevant input advice but also in field visits, pest and disease monitoring, technology demonstrations, and follow-up with farmers on the adoption of new practices. However, performance levels vary—while some dealers actively engage in advisory roles, others are constrained by limited technical skills, time, and institutional support. Evaluating and strengthening this performance is vital to enhance the credibility, reach, and effectiveness of grassroots agricultural extension [10].

Agri-input dealers often function as the primary interface between farmers and the broader agricultural system. Despite their significance, input dealers face several challenges that hinder their ability to deliver effective agro-advisory services. These challenges span technical, communicative, and structural aspects, limiting their potential as grassroots-level change agents in agriculture.

**2. METHODOLOGY**

To assess the role performance of agricultural input dealers in delivering agro-advisory services, an *ex-post facto* research design was employed. The study was conducted during 2022–2023 in the Central Plain Zone of Uttar Pradesh, focusing on two purposively selected districts—Kannauj and Farrukhabad—owing to their significant concentration of input dealers engaged in both supply and advisory roles.

A multi-stage random sampling technique was adopted to ensure a representative sample. In the first stage, five blocks were purposively selected from each district, resulting in a total of ten blocks. The selected blocks from Kannauj district included Kannauj, Jalalabad, Chhibramau, Umarda, and Saurikh, while those from Farrukhabad district were Kamalganj, Shamsabad, Muhammadabad, Rajepur, and Kaimganj. From each block, 25 input dealers were randomly selected, leading to a final sample size of 250 respondents. A key inclusion criterion was a minimum of five years of experience in both agricultural input supply and advisory services.

Data were collected through a structured interview schedule administered via personal interviews. The schedule was designed to explore the extent of role performance and identify gaps and needs in the provision of agro-advisory services. To define and evaluate role performance, a comprehensive job description was developed, informed by previous studies and expert consultations with stakeholders, including input dealers, company representatives, extension experts, and officers from the Department of Agriculture.

The role performance of agricultural input dealers was evaluated using a structured five-point scale, which included the options: ‘most often’ (5), ‘often’ (4), ‘sometimes’ (3), ‘seldom’ (2), and ‘never’ (1). This scale was applied across 28 role performance related statements, each reflecting a specific aspect of agro-advisory service delivery.

Each respondent could score a minimum of 28 and a maximum of 140 based on their responses. In the present study, the actual scores ranged from 66 to 102. To interpret the data meaningfully, descriptive statistics such as frequencies, percentages, mean, and standard deviation were calculated. Based on the mean and standard deviation, respondents were grouped into three distinct categories: low, medium, and high role performance.

In addition, an item-wise analysis was conducted to rank each of the 28 statements according to the percentage of the score obtained. This helped identify specific areas where input dealers were performing well and areas where further capacity-building and institutional support are needed.

3. results and discussion

The findings of the present study, along with pertinent discussions, are organized and presented under the following sub-headings:

### **3.1 Role Performance of Agricultural Input Dealers in Terms of Agro-Advisory Services and Its Item-Wise Analysis**

#### **3.1.1 Role Performance of the Input Dealers in Terms of Agro-Advisory Services**

***Table 1* Distribution of respondents according to their role performance in terms of agro-advisory services.**

 **(n= 250)**

|  |  |  |
| --- | --- | --- |
|  **Sr. No.** |  **Category** |  **Respondents** |
| **Frequency** | **Per cent** |
| 1. | Low role performance (below 75) | 43 | 17.20 |
| 2. | Medium role performance (75-89) | 162 | 64.80 |
| 3. | High role performance (above 89) | 45 | 18.00 |
|  | **Total** | **250** | **100.00** |

**Mean- 81.70, S.D-6.79**

The data presented in Table 1 shows the overall role performance of input dealers with respect to agro-advisory services. The results indicate that a majority of the respondents (64.80%) were found to be in the medium role performance category. This suggests that most of the input dealers are moderately effective in delivering agro-advisory services to the farmers.The findings of the study are in conformity with the study of Ganiger [4].

Further, 18.00 per cent of the respondents demonstrated high role performance, indicating their active and proficient engagement in their advisory responsibilities. On the contrary, 17.20 per cent were observed in the low-performance category, signifying a lack of engagement or potential challenges in performing agro-advisory roles effectively; similar findings were also reported byReddy *et al.* [5] in his findings.

These findings highlight a critical need for skill enhancement and capacity building among low-performing dealers. At the same time, medium performers should be further strengthened to transition them into the high-performance category. Studies such as those by Reddy [6] support the view that targeted training and support systems significantly contribute to the improvement in advisory roles, ultimately benefiting the farming community through improved agricultural productivity and knowledge dissemination.

#### **3.1.2 Item-wise analysis of role performance of the input dealers in terms of agro-advisory services**

#### **Table 2 Item-Wise Analysis of Role Performance of the Input Dealers in Terms of Agro-Advisory Services**

**(n= 250)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Items of role performance of input dealers towards agro-advisory services** | **Role performance** | **Total****Score** | **Per cent of score obtained** | **Rank** |
| **Most often** | **Often** | **Sometime** | **Seldom** | **Never** |
|  | Assisting farmers in the study region by providing them with agro-advisory services that are timely, relevant, and appropriate to their needs. | 157 | 78 | 14 | 1 | 0 | 1141 | 91.28 | I |
|  | Inform the company agents or agriculture officer about any significant pest and disease issues, natural disasters, or any unsatisfactory agricultural advice in your area. | 125 | 90 | 31 | 4 | 0 | 1086 | 86.88 | II |
|  | visiting the farmer’s field on a scheduled day | 34 | 40 | 42 | 41 | 93 | 631 | 50.48 | XX |
|  | 3.1. To monitor field operations and assess the status of crops. | 33 | 38 | 40 | 47 | 92 | 623 | 49.84 | XXI |
| 3.2. To investigate the issues and provide suitable measures. | 37 | 74 | 72 | 41 | 26 | 805 | 64.40 | VI |
| 3.3. To determine the extent to which agro-advisory services recommendations have been implemented and the reasons for their non-adoption. | 32 | 44 | 63 | 65 | 46 | 701 | 56.08 | XIV |
| 3.4. Determine the prevalence of diseases, pests, and natural disorders. | 36 | 42 | 53 | 57 | 62 | 683 | 54.64 | XVI |
|  | Offer credit-based agricultural advisory services to farmers. | 21 | 85 | 53 | 60 | 31 | 755 | 60.40 | IX |
|  | Present the outstanding achievements of farmers to the company/Department of Agriculture by utilising agro-advisory services. | 29 | 38 | 42 | 52 | 89 | 616 | 49.28 | XXIII |
|  | Assess the practicality of agro-advisory services in field conditions. | 97 | 89 | 34 | 29 | 1 | 1002 | 80.16 | III |
|  | Offering affordable, high-quality agro-advisory services to the farmers | 18 | 88 | 76 | 50 | 18 | 788 | 63.04 | VII |
|  | Explores effective strategies to encourage farmers to adopt the recommendations provided during the training sessions on agro-advisory services. | 8 | 10 | 59 | 121 | 52 | 551 | 44.08 | XXVII |
|  | Motivating farmers to embrace new and additional recommended agro-advisory services. | 37 | 50 | 47 | 66 | 50 | 708 | 56.64 | XIII |
|  | Organise demonstrations, campaigns, shows, and seminars on innovative technologies for various crops to farmers. | 90 | 63 | 40 | 53 | 4 | 932 | 74.56 | IV |
|  | participate actively in training sessions which are provided by the firm or the AO in order to acquire expertise about agro-advisory services. | 1 | 28 | 78 | 94 | 49 | 588 | 47.04 | XXV |
|  | Organizing visits from company agents to address any issues that cannot be resolved during field visits or training programs. | 17 | 32 | 54 | 84 | 63 | 606 | 48.48 | XXIV |
|  | Keep a daily record of the agro-advisory services discussed with farmers during their visits to the shop. | 35 | 38 | 54 | 61 | 62 | 673 | 53.84 | XVII |
|  | Familiar with the agricultural market conditions and the availability and demand for agro-advisory services. | 23 | 93 | 41 | 63 | 30 | 766 | 61.28 | VIII |
|  | Arrange a meeting with the Farmers Interest Groups and rural institutions to address the specific challenges faced by farmers in different locations. | 3 | 25 | 65 | 112 | 45 | 579 | 46.32 | XXVI |
|  | Using the mass media to disseminate agro-advisory services. | 35 | 72 | 38 | 63 | 42 | 745 | 59.60 | X |
|  | Developing training schedules tailored to the specific needs of farmers. | 35 | 37 | 34 | 89 | 55 | 658 | 52.64 | XVIII |
|  | Assessing the specific needs for agro-advisory services in my region. | 40 | 48 | 61 | 61 | 40 | 737 | 58.96 | XI |
|  | Implementation of agro-advisory programs sponsored by the government or companies | 38 | 44 | 53 | 54 | 61 | 694 | 55.52 | XV |
|  | Monitor the progress of adding agro-advisory services and make sure farmers know about them. | 45 | 77 | 74 | 28 | 26 | 837 | 66.96 | V |
|  | Get feedback from farmers on the implementation and effectiveness of agro-advisory services. | 40 | 42 | 66 | 57 | 45 | 725 | 58.00 | XII |
|  | Complete any additional tasks given by the company or government authorities that do not interfere with your primary duties. | 2 | 5 | 80 | 100 | 63 | 533 | 42.64 | XXVIII |
|  | Constantly monitoring and taking proactive measures to prevent the spread of pests and diseases that can harm various crops in my area. | 29 | 36 | 38 | 70 | 77 | 620 | 49.60 | XXII |
|  | Determine the credit requirements and annual expenditure on agro-advisory services provided to farmers. | 29 | 45 | 43 | 57 | 76 | 644 | 51.52 | XIX |

The detailed item-wise role performance of input dealers is given in Table 2. Based on the responses received:

The highest-rated activity was “Assisting farmers in the study region by providing them with agro-advisory services that are timely, relevant, and appropriate to their needs,” which secured Rank I with 91.28 per cent of the score. This suggests that most input dealers prioritize offering direct and immediate advisory support to farmers, reflecting their frontline engagement in rural agricultural ecosystems.

This was followed by “Inform the company agents or agriculture officer about any significant pest and disease issues, natural disasters, or any unsatisfactory agricultural advice in your area,” with 86.88 per cent (Rank II), and “Assess the practicality of agro-advisory services in field conditions,” with 80.16 per cent (Rank III). The high scores in these domains imply a strong awareness among input dealers regarding situational field issues and the importance of timely communication and field-applicable recommendations. The findings of the study are in line with the study of Panja et al. (2022) [7], confirming the continued relevance of these advisory practices in dynamic farming conditions.

Other high-performing areas include “organizing demonstrations and awareness programs (74.56%), monitoring the addition of agro-advisory services” (66.96%), “investigating field issues (64.40%), and offering affordable and quality services” (63.04%). These activities are indicative of input dealers’ willingness to actively engage in knowledge transfer mechanisms and promote technological innovations at the grassroots level. Their involvement in mobilizing community events such as field demonstrations reflects not only their advisory competence but also their credibility and trust among farmers. These findings are also supported by Kumar et al. (2020) [8], who observed that agri-input dealers in Bihar frequently conducted field visits in response to farmers’ problems, shared timely pest and disease management information, and organized community meetings on input usage. Moreover, the same study highlighted that input dealers served as a crucial bridge between farmers and agricultural institutions, but emphasized that their effectiveness could be significantly enhanced through structured institutional support and regular training.

Conversely, the least performed items were “Complete any additional tasks given by the company or government authorities that do not interfere with your primary duties” (42.64%, Rank XXVIII), “Explores effective strategies to encourage farmers to adopt the recommendations provided during the training sessions” (44.08%, Rank XXVII), and “Participate actively in training sessions provided by the firm or the AO in order to acquire expertise” (47.04%, Rank XXV). These findings align with previous studies that highlight the complex role performance of input dealers in the study of Ogunlade et al. [9], where limited institutional linkages and inadequate follow-up mechanisms restrict broader engagement.

It is worth noting that while input dealers are proactive in disseminating technical advice, their relatively low involvement in strategic activities such as farmer mobilization, capacity-building, and programmatic follow-ups may stem from a lack of structured support or incentives. The absence of institutionalized frameworks that formally integrate them into extension networks could be another limiting factor.

This variation clearly points to an imbalance in the activities carried out by the dealers where high engagement is evident in direct service delivery and advisory roles, but comparatively lower in areas like follow-up, training participation, and institutional coordination. Such gaps suggest that dealers tend to operate independently rather than as part of a larger agricultural knowledge system.

These observations emphasize the need for structured and continuous capacity development programs for input dealers. Encouraging active participation in training and developing mechanisms for institutional linkage could bridge the current gaps and enhance the overall effectiveness of input dealers as agricultural service providers. Furthermore, integrating their roles within district-level extension strategies, recognizing their contributions formally, and incentivizing participation in farmer education programs can further elevate their performance and reach.

**4. Conclusion**

The present study critically examined the role performance of agricultural input dealers in delivering agro-advisory services. The findings reveal that a significant proportion of input dealers (64.80%) fall under the medium role performance category, indicating a moderate level of effectiveness in delivering timely and relevant advisory support to farmers. While a commendable 18.00% of the dealers were categorized under high performance, a concerning 17.20% demonstrated low role performance, highlighting disparities in capacity, awareness, or motivation.

The item-wise analysis further illustrated that input dealers are actively involved in certain core functions, such as assisting farmers with relevant advice, reporting pest and disease issues, and assessing the practicality of agro-advisory recommendations. However, areas such as participation in training, developing farmer-specific strategies, and fulfilling additional responsibilities showed relatively poor performance.

These findings underscore the importance of strengthening the extension ecosystem through targeted capacity-building programs, continuous training, and performance incentives. Enhancing collaboration between input dealers, agricultural officers, and other stakeholders can improve advisory service quality and coverage. Furthermore, policy interventions should aim to integrate input dealers more effectively into the formal agricultural extension system, recognizing their role as grassroots-level service providers.

Ultimately, empowering input dealers with updated knowledge, resources, and institutional support can significantly contribute to improving the livelihoods of farmers and achieving sustainable agricultural development.

**COMPETING INTERESTS DISCLAIMER:**

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

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**References:**

1. **Government of India,** Ministry of Agriculture & Farmers Welfare, Department of Agriculture & Farmers Welfare. (2023, December 19). Workforce engaged in agriculture (Lok Sabha Starred Question No. 228).
2. **Agro Spectrum. (n.d.).***India’s agri-inputs market*. Retrieved September 27, 2024, from <https://agrospectrumindia.com/tag/indias-agri-inputs-market>.
3. **Khose, K. B. (2004).** Role of Input Dealers in Transfer of Agricultural Technology*. Journal of Agricultural Extension*, 15(2), 45-50.
4. **Ganiger, S. (2012).** Knowledge, perception and role performance of input dealers in agro advisory services in northern dry zone of Karnataka. *(Master’s thesis, Acharya N.G. Ranga Agricultural University). Department of Agricultural Extension*.
5. **Reddy, U. K. K., Satya Gopal, P. V., Sailaja, V., & Prasad, S. V. (2019**). Role of agri- input dealers in transfer of technology. *International Journal of Current Microbiology and Applied Sciences*, *8*(2), 2383-2388.
6. **Reddy, U. K. K. (2018).** Role assessment of agri-input dealers in transfer of technology in Telangana (Master’s thesis). *Sri Venkateswara Agricultural College, Tirupati, Acharya N.G. Ranga Agricultural University, Guntur, Andhra Pradesh*.
7. **Panja, A., Shivalinge Gowda, N. S., Kusumalatha, D. V., & Jayasingh, D. K. (2022).** Role performance of agricultural input dealers in agro-advisory services in West Bengal. *Indian Journal of Extension Education, 58*(3), 8-13.
8. **Kumar, S., Atal, R., Roy, S., Panda, C. K., & Sohane, R. K. (2020).** Role of Agri-input Dealers in Providing Extension Services to the Farmers of Bihar (India) and Their Role Expectation from Government Institutions. *Current Journal of Applied Science and Technology,* 39(5), 1–7. https://doi.org/10.9734/cjast/2020/v39i530539.
9. **Ogunlade, I., Atibioke, O.A., Ladele, A.A and Adumadehin, G. S. (2012).** Capacity of agro-input dealers in advisory service delivery to maize farmers in Kwara State, Nigeria. *International Research Journal of Agricultural Science and Soil Science*. 2 (10) : 426-435.
10. Elakkiya, S., & Asokhan, M. (2021). Role and performance of Agri-input dealers in extension services in Coimbatore district of Tamil Nadu, India. Journal of Applied and Natural Science, 13(SI), 156.