



Effectiveness of Extension and Advisory Services Provided by Input Dealers during COVID-19 Pandemic

V. Mathuabirami^{a++*}, C. Karthikeyan^{a#}, M. Nirmala Devi^{a†},
Patil Santosh Ganapati^{b‡} and Paul Mansingh J.^{c^}

^a Department of Agricultural Extension and Rural Sociology, Tamil Nadu Agricultural University, Coimbatore-641 003, India.

^b Department of Physical science and Information Technology, TNAU, Coimbatore, India.

^c VIT School of Agricultural Innovations and Advanced Learning (VAIAL), Vellore Institute of Technology, Vellore, India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aim: The main aim of this research is to study the input dealers' perception towards the extension and advisory services provided during COVID-19 pandemic.

Study Design: Cross section research design.

Place and Duration of Study: Coimbatore and Tiruvallur districts of Tamil Nadu, India. Two years (2021-2022).

⁺⁺ Ph.D. Scholar;

[#] Professor and Head;

[†] Professor;

[‡] Assistant Professor;

[^] Associate Professor (Senior);

*Corresponding author: E-mail: mathuabirami09@gmail.com;

Methodology: From the selected two districts 70 extension officials were randomly selected for conducting the study. Data were collected from the input dealers who delivered extension and advisory services to farmers during COVID-19 pandemic. Paper-Pencil survey method was used to collect data from the farmers. The survey approach is useful for evaluating opinions and trends by gathering quantitative data. A separate scale was developed for assessing the input dealer's perception towards the effectiveness of extension and advisory services. CIPP model of evaluation was used for developing scale to measure the input dealer's perception towards the EAS. The developed scale were validated by the experts. A scale was measured using 5-point Likert scale with 1 denoting "strongly disagree and 5 denoting "strongly agree" were employed in this study.

Results: Majority of the input dealers (70.00%) had medium to very high level of perception towards the effectiveness of extension and advisory services. Input dealer's perceived that they possessed necessary skills and experience for delivering extension and advisory services. They also perceived that services were made available to farmers on time, door delivery of services were provided, increased agricultural production and productivity of farmers which lead to increased income of the farmers.

Conclusion: Effectiveness of extension and advisory services provided by input dealers during COVID-19 pandemic was effective in input dealer's perception. Therefore policy makers must propose a policy in a way that government service provider will work along with the input dealers for delivering extension and advisory services to the farming community. Pluralistic extension approach will be the best option for extension service provider.

Keywords: COVID-19; extension and advisory services; CIPP model of evaluation; input dealers.

1. INTRODUCTION

Extension and research are two crucial components for the development of agriculture. Right advisory services along with the right inputs will ultimately increase farm productivity. On the other hand, one of the biggest challenges for the stakeholders is providing extension and advisory services to the farming community at right time. Most farmers are not aware of the proper agrochemical types and dosages needed for various crops and modern technology [1]. Agro-input dealers play a tremendous role in reaching farmers by performing the dual role of providing agro-inputs as well as technological backup to the farmers informally (Food and Agriculture Organization, 2017). Agro-input dealers are the chief source of farm information to the farming community with utmost credibility. Besides the supply of inputs and credit, their role in the transfer of agricultural technology is notable and acclaimed by the farmers for their accessibility and adorability [2]. Agro-input dealers are small, often independent stockists or distributors of agricultural inputs, such as pesticides. The private retail sector, including agro-input dealers, is often the dominant source of pesticides for farmers in low and middle-income countries [3]. Climate change has begun to ravage agriculture and threaten food security in many parts of the world. The two biggest worldwide issues are climate change and COVID-19. Despite the fact that the COVID-19

pandemic and climate change impact all nations, South Asia is particularly vulnerable. South Asian Countries have a more challenging scenario as a result of their vast populations, insufficient health-care facilities, significant poverty, and hunger. Several studies have shown that South Asia is one of the most sensitive regions to climate change [4], but COVID-19 has inflicted even more damage in the region. Controlling the spread of the virus is proving tough for India, Pakistan, Bangladesh, and Nepal. India has approximately 18 million COVID-19 cases as of April 29, 2021 (second only to the United States), with over 200,000 deaths, and the number is expanding every day. It is expected that in South Asia more than half of the people forced into poverty as a result of COVID-19 and its economic effects [5]. Despite being the most vulnerable to the consequences of climate change, South Asian nations are poorly equipped to deal with COVID-19 and climate change. Despite rising concern, there is a lack of knowledge of how climate change, public health, and COVID-19 interact, and what are the potential routes to create a COVID-19-friendly recovery in order to ensure food and nutrition security. Food and nutrition insecurity, public health, and environmental degradation cannot be separated in the face of climate change [6]. Agriculture is critical to food and nutrition security, public health, and climate change mitigation. There is the connection between the two global crises of climate change and COVID-

19. Therefore, it is necessary to go for collaborative action in response to the two global crisis. Government organization efforts were not sufficient to overcome challenges posed by the COVID_19 pandemic. The role of private players such as input dealers were inevitable. The novel coronavirus pandemic (COVID-19) has further disrupted agricultural activities and supply chains and has become a serious threat for public health. The COVID-19 crisis impacted the food security and livelihoods of millions of farmers worldwide. Extension and Advisory Services (EAS) have been playing a major role in supporting farmers in addressing the challenges. To a certain extent, input traders were crucial in protecting farmers from economic distress. Despite the lockdown having an impact on their operations and their ability to provide extension and advisory services, agro-input dealers have made every effort to earn the trust of farmers and meet their demands throughout the COVID-19 outbreak. It is first time for the government extension system to make use of input dealers' capabilities (who are also one of the most significant information sources for Indian farmers) both during and after the crisis. , It was not known that whether the EAS met its intended objective, whether the services were relevant, appropriate to the farmers. So far, there is no research regarding the worthiness of EAS provided by input dealers to help farmers to cope with COVID-19 pandemic. In this point it is need of the hour to study the effectiveness of EAS provided by input dealers, by evaluating EAS provided during pandemic will lead to rectify the errors and correct it in future. So far there is no study pertaining to the perception towards the effectiveness of service provider. In our study service provider is input dealers. Therefore it is necessary to evaluate the effectiveness of extension and advisory services in input dealer's perspective. So that they could deliver EAS effectively by correcting their mistakes in future. The main objective of this paper is to study the Input dealers' perception towards the effectiveness of EAS provided during COVID-19 pandemic.

2. METHODOLOGY

2.1 Locale of Research

The current study was carried out at Coimbatore and Tiruvallur district of Tamil Nadu. Study area was selected purposively based on the following criteria:

- Severity of COVID-19 pandemic i.e., incidence of maximum no. of cases
- Domination of agricultural activity

The top five districts affected by COVID 19 are Chennai, Coimbatore, Chengalpattu, Tiruvallur and Erode. To cover different zone and also to satisfy above criteria among these districts, Coimbatore and Tiruvallur districts were purposively selected for conducting the study.

2.2 Selection of Respondents

From the two districts 30 input dealers' were randomly selected for conducting the study.

2.3 Research Design

A cross-sectional research design was employed for the study. Perception of input dealers towards the effectiveness of EAS provided by them were collected from the input dealers. Paper-Pencil survey method was used to collect data from the farmers. The survey approach is useful for evaluating opinions and trends by gathering quantitative data [7].

2.4 Questionnaire

A survey questionnaire method was used to collect the data from the respondents. Questionnaire was pre tested to ensure objectivity and unambiguity. A separate scale was developed for assessing the input dealers' perception towards the effectiveness of EAS. CIPP model of evaluation is used to evaluate the effectiveness of EAS. The CIPP model was created in the 1960s by Daniel Stufflebeam. It is regarded as decision- oriented model that systematically gathers data about all type of program to identify strengths and limitations in content or delivery in order to improve program effectiveness or to plan for the new program [8]. Due to the model's integration of four evaluation stages, evaluator's prefer this model for evaluating any type of program. The CIPP Evaluation Model is a thorough framework for directing assessments of programs, projects, institutions, and systems, particularly those aimed at achieving long-term, sustainable improvements [9]. Context, input, process, and product evaluation are all represented by the acronym CIPP. These four sections of an evaluation generally ask, in that order: What needs to be done? How should it be done, is it being done, and did it Work? [10].

The developed scale was validated by the experts. A scale was measured using 5-point Likert scale with 1 denoting "strongly disagree" and 5 denoting "strongly agree" were employed in this study.

3. RESULTS AND DISCUSSION

An attempt has been made in this study to analyse the input dealers' perception towards the

effectiveness of EAS provided during COVID-19 pandemic. Input dealers' perception towards the effectiveness of EAS was studied through CIPP model of evaluation. It refers to extent to which input dealers perceive they achieve their intended objective during COVID-19 pandemic. The results relevant to input dealers' statement wise perception and overall perception were presented Table 1 and Table 2 respectively.

Table 1. Statement wise input dealer's perception towards effectiveness of EAS

| (n=30) | | | |
|-------------------|--|------------------|------|
| S.No. | Statement | Weighted average | Rank |
| a. Context | | | |
| 1. | Possessed good work experience in delivering extension and advisory service to farmers | 8.72 | II |
| 2. | Possessed necessary technical skills to deliver extension and advisory services to farmers | 8.84 | I |
| 3. | Extension and advisory services provided during COVID-19 pandemic match the requirements of farmers. | 8.22 | III |
| 4. | Input dealers paid real attention to the real priorities and needs of farmers. | 8.15 | IV |
| 5. | All the necessities were provided to farmer to continue farming in spite of pandemic | 8.12 | V |
| 6. | Information about all the aspects of farming were provided | 7.92 | VI |
| b. Input | | | |
| 1. | Advisory services were given | 7.83 | VII |
| 2. | Crop diagnosis were done through online mode in spite of pandemic | 8.14 | IV |
| 3. | Information on inputs and market available | 8.32 | I |
| 4. | Linked farmers with market | 8.30 | II |
| 5. | Linked farmers with other stakeholders. | 7.94 | VI |
| 6. | Schemes and subsidies related information were given | 8.17 | III |
| 7. | Provided advisory services through whatsapp / telegram. | 7.95 | V |
| c. Process | | | |
| 1. | Conducted skill based training | 8.13 | IV |
| 2. | Services were delivered on time | 8.42 | I |
| 3. | Adequate services were provided | 7.95 | V |
| 4. | Appropriate services were provided | 7.82 | VI |
| 5. | Authenticated information only given | 8.26 | II |
| 6. | Information were sent promptly to the farmers | 8.14 | III |
| d. Product | | | |
| 1. | Increased agricultural production of farmers | 8.54 | II |
| 2. | Increase productivity for farmers | 8.56 | I |
| 3. | Saves time of farmers and input dealers | 7.50 | VI |
| 4. | Promote interaction between farmers and input dealers in spite of pandemic | 7.51 | V |

| S.No. | Statement | Weighted average | Rank |
|-------|---|------------------|------|
| 5. | Extension and advisory services provided during pandemic increase profit of my business | 8.33 | III |
| 6. | I am satisfied in delivering extension advisory services to farmers | 8.24 | IV |

Table 2. Distribution of the input dealers based on their overall perception towards the effectiveness of EAS

| (n=30) | | | |
|--------------|------------------|-----------|------------|
| S. No. | Category | Number | Per cent |
| 1. | Very low (<92) | 5 | 16.67 |
| 2. | Low (92-98) | 4 | 13.33 |
| 3. | Medium (98-106) | 6 | 20.00 |
| 4. | High (106-113) | 7 | 23.33 |
| 5. | Very high (>113) | 8 | 26.67 |
| Total | | 70 | 100 |

3.1 Context

It could be inferred from the Table that based on rank order mostly perceived that they possessed necessary technical skills to deliver extension and advisory services to farmers got the highest weighted average (8.84) and hence was ranked as I followed by input dealer's perceived that they possessed good work experience in delivering extension and advisory service to farmers (8.72) and it was ranked II. Next to that Extension and advisory services provided during COVID-19 pandemic match the requirements of farmers and Input dealers paid real attention to the real priorities and needs of farmers was ranked as III and IV with weighted average of 8.22 and 8.15. Subsequently extension official's perceived that all the necessities were provided to farmer to continue farming in spite of pandemic and Information about all the aspects of farming were provided were ranked as V and VI with the weighted average of 8.12 and 7.92.

Input dealers have to complete diploma in agri-input course to run a agri-input shop. Therefore input dealers might possessed necessary technical skills to deliver extension and advisory services during COVID-19 pandemic and also they possessed good working experience. Next to that input dealers perceived that extension and advisory services provided during COVID-19 pandemic match the requirement of farmers. This might be due to that pandemic demanded input dealer's to contact farmers through the use of ICT tools, door delivery services, online payment of cash to avoid disease transmission, online meeting with farmers. Input dealer's made all those facilities available to farmers. Availing

inputs on time is the major need of the farmers during COVID-19 pandemic. To satisfy this need input dealers provided door delivery of services throughout the pandemic period.

3.2 Input

Table revealed that most of the input dealers perceived that provided information on inputs and market availability which was ranked I with the weighted average of 8.32 followed by linked with market (8.30), schemes and subsidies related information were given (8.17), crop diagnosis were done through online mode in spite of pandemic (8.14), provided advisory services through whatsapp / telegram (7.95), linked farmers with other stakeholders (7.94), advisory services were given (7.83) in that order.

Input dealers reported that they provided information on which inputs to use, when to use, where to sell the produce, when to sell the produce to farmers during COVID-19 pandemic. Therefore input dealers mostly perceived information on inputs and market availability. Next to that input dealers perceive that schemes and subsidies related information were given. This might be due to that the input dealers assist farmers to avail the benefits of PM-KISSAN scheme, PMFBY scheme, crop loan moratorium.

3.3 Process

It could be inferred from the Table that based on rank order mostly perceived that services were delivered on time got the highest weighted average (8.32) and hence was ranked as I followed by Authenticated information only given

(8.26) and it was ranked II. Next to that information were sent promptly to the farmers and conducted skill based training was ranked as III and IV with weighted average of 8.14 and 8.13. Subsequently extension official's perceived that all the adequate services were provided and appropriate services were provided were ranked as V and VI with the weighted average of 7.95 and 7.82.

Majority of the input dealers perceived that they deliver service on time. Because throughout the pandemic input dealer's provided door delivery service on time and also they provided timely agro advisory service. They also instantly diagnosed the symptoms sent by farmers through whatsapp during pandemic. After diagnosing symptoms the input dealers provided corrective measures for farmers. They have provided only authenticated information.

3.4 Product

Table revealed that most of the input dealers perceived that they increase productivity for farmers (8.56) followed by increased agricultural production of farmers (8.54), extension and advisory services provided during pandemic increase profit of my business (8.33), I am satisfied in delivering extension advisory services to farmers (8.24), Promote interaction between farmers and input dealers in spite of pandemic (7.51), Saves time of farmers and input dealers (7.50) in that order.

The probable reason for the results might be that the input dealers admitted that they have extended all sort of support for farmers during COVID-19 pandemic in order to increase production, productivity, income and profit for the farmers. Input dealers admitted that EAS provided by them during COVID-19 lead to increased production and productivity of cultivated crops which ultimately lead to increased income of farmers.

It could be inferred from the Table that nearly one-fourth of the input dealers had very high level of perception towards the effectiveness of extension and advisory services provided during COVID-19 pandemic followed by little less than one-fourth of the input dealers (23.33%) had high level of perception towards the effectiveness and exactly one-fifth of the input dealers (20.00%) had medium level of perception towards the effectiveness of extension and advisory services. It could also be seen that little amount of input dealers had very low as

well as low level of perception towards the effectiveness of extension and advisory services provided during COVID-19 pandemic. The findings were in line with the findings of Malihe et al., [11].

The probable reason for majority of the input dealers (70.00%) had medium to very high level of perception towards the effectiveness of extension and advisory services might be that input dealers extend their fullest support to farmers throughout the pandemic. In spite of lockdown they made agricultural inputs available to farmers, they diagnosed symptoms sent through whatsapp and gave advisory services. Input dealers also successfully adopted door delivery services of inputs during COVID-19 pandemic. They also facilitate farmers for marketing their harvested produce. They also linked farmers with custom hiring centre for availing machineries and implement for rent during COVID-19 pandemic. They have also provided facilities for cold storage of perishables, storage of grains.

4. CONCLUSION

The result of evaluation of the effectiveness of extension and advisory services provided by input dealers during COVID-19 pandemic was effective. Input dealers had medium to very high level of perception towards the effectiveness of extension and advisory services. In spite of lockdown they made agricultural inputs available to farmers, they diagnosed symptoms sent through whatsapp and gave advisory services. Input dealers also successfully adopted door delivery services of inputs during COVID-19 pandemic. They also facilitate farmers for marketing their harvested produce. They also linked farmers with custom hiring centre for availing machineries and implement for rent during COVID-19 pandemic. They have also provided facilities for cold storage of perishables, storage of grains. Therefore policy makers must propose a policy in a way that government service provider will work along with the input dealers for delivering extension and advisory services to the farming community. Pluralistic extension approach will be the best option for extension service provider.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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