Profile Characteristics of Fertilizer Dealers in Kerala, India

Sathishwaran R. [a++*], Helen S. [b#] and Darsana S. [b†]

[a] *Department of Agricultural Extension, College of Agriculture, Vellanikkara, Kerala Agricultural University, Thrissur, Kerala, India.*
[b] *Central Training Institute, Mannuthy, Kerala, India.*

Authors' contributions

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

Article Information

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here:
https://www.sdiarticle5.com/review-history/122774

Original Research Article

ABSTRACT

In India, about 75 percent of the population is dependent directly or indirectly on the agricultural and allied sectors. Around 70 percent of the population depends on agriculture for their livelihood. Agriculture development not only involves crop production but also, the development of its stakeholders *viz.,* farmers, fertilizer dealers, extension workers, NGOs, *etc.* Effective transfer of technology from research to farmers through appropriate stakeholders is crucial for achieving desired results. Fertilizer dealers, as key stakeholders, play an essential role in ensuring farmers have access to essential agricultural inputs needed to enhance productivity on their farms. Several programs have been launched to enhance the capabilities of these agricultural advisors. One such initiative is the 'Certificate Course on Integrated Nutrient Management for Fertilizer Dealers'. Consequently, this study was focused to study the profile characteristics of fertilizer dealers. Ex-

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[++]*Ph. D. Scholar;*
[#]*Professor and Head;*
[†]*Assistant Professor;*
Corresponding author: E-mail: sathishwaran.r2505@gmail.com;

post facto research design was adopted for the study with a sample of 300 respondents covering 7 districts of Kerala. From the analysis, it was found that majority of respondents were under medium profile characteristics. In light of these findings, it is advisable to implement refresher training during the off-peak season. This training will enhance dealers' knowledge and skills, enabling them to provide more effective guidance and support to farmers.

1. INTRODUCTION

The agriculture sector is the lifeline of the Indian economy. Agriculture provides the essential support for food, livelihood security and support for the economic growth and social transformation of the country. Hence, agricultural development holds a prominent position in the sector among input dealers. An input dealer serves as a crucial link between manufacturers and farmers. Fertilizer dealers are individuals or business organizations and sometimes cooperative societies that engage in the purchase and sale of agricultural input. Fertilizer dealers particularly retailer play a major role in delivering agricultural information and advisory services to farmers. The fertilizer dealer either be a wholesaler or a retailer. The wholesaler buys directly from the manufacturer or sometimes an importer or supplier. They buy in large volumes of fertilizers and sell to retailers. The retailer is the one who buys from the wholesaler and is usually in direct contact with the farmers and other consumers. Fertilizer dealers are suppliers of agricultural essentials, encompassing seeds, fertilizers, farm machinery, *etc.*

Farmers are encountering of inputs difficulties in farming due to inadequate knowledge of fertilizer dealers or delays in their supply. Therefore, it's crucial to empower these dealers by enhancing their agricultural knowledge through various extension programs. In response to this need, the National Institute of Agricultural Extension Management (MANAGE) has developed a 15-day certificate course titled 'Certificate Course on Integrated Nutrient Management for Fertilizer Dealers'. This course provides relevant, location-specific agricultural training to empower dealers with the essential knowledge required to tackle the daily challenges encountered by farmers in their fields effectively. By doing so, they can better serve the farming community.

In Kerala, Central Training Institute, Mannuthy under the Directorate of Extension, Kerala Agricultural University (KAU) along with the Krishi Vigyan Kendras (KVKs) conducted the certification course on INM. Because of the Covid-19 pandemic the certificate course was started in 2020 with 2 hours of online theory classes for 15 days and practical classes for 3 days were conducted in the KVKs of the respective districts in the state. When the restrictions related to the Covid-19 pandemic were relaxed, offline certificate course on INM were started in three centers of KAU. A total of 1,719 fertilizer dealers have secured their certificates under the supervision of the Central Training Institute. The certificate program is available to all practicing and prospective fertilizer dealers, who must have at least completed 10th grade education. Kerala has 3,244 input dealers, out of which 2,302 are in fertilizer dealership, 716 has pesticide dealership, and 226 are selling seeds. The vast network of fertilizer suppliers now covers all villages in the state, acting as a crucial connection to the agricultural community. It is crucial to receive education in scientific agriculture in order to optimize the effectiveness of this system. With this background, a comprehensive research was carried out to study the attributes of fertilizer dealers trained under the certificate course on Integrated Nutrient Management (INM) with the following specific objective;

1.1 Objective

To study the socio-personal profile of fertilizer dealers who have undergone certificate course on Integrated Nutrient Management conducted by Kerala Agricultural University.

2. METHODOLOGY

2.1 Selection of Districts

The research was conducted in seven districts of Kerala viz; Kannur, Kozhikode, Malappuram, Thrissur, Palakkad, Alappuzha and Kollam. These districts were purposively selected due to

the highest numbers of fertilizer dealers participated in the certificate course on INM.

2.2 Selection of Fertilizer Dealers

For the selection of input dealers, a comprehensive list of registered input dealers who have been trained under the certificate course on Integrated Nutrient Management for fertilizer dealers' program from the year 2020 to 2023 up to 24 batches was prepared with the help of the Central Training Institute (CTI), Mannuthy under the Directorate of Extension, Kerala Agricultural University (KAU). The list of the number of trainees who participated in the 24 batches was prepared separately as online and offline trainees. Based on the list, a representative sample of 150 respondents each from online and offline certificate courses was selected by applying a proportionate random sampling technique, thus making the total sample size of 300 respondents. Expert advice was sought while creating an interview schedule, keeping the study's goals in mind. Pretesting this schedule in a non-study location allowed for any necessary alterations to be made in light of the results. Personal interviews were conducted to collect data using the finalised schedule. The data collected from the respondents was scored, tabulated and analysed using the Statistical Package for Social Sciences (SPSS 27).

3. RESULTS AND DISCUSSION

3.1 Age

The data presented in the Table 1 showed that the majority of online trained fertilizer dealers belonged to middle age (46.00%) category followed by old (33.33%) and young age (20.67%). While, 36.00 percent of offline trained fertilizer dealers belonged to young age category followed by middle (34.00%) and old age (30.00%).

The findings indicated that the majority of respondents belonged to middle age group followed by old. The middle age group of fertilizer dealers were much involved in agri-input dealership. The reason might be work efficiency was more in the case of middle age group compared to old and young age group. This could be the fundamental reason why the majority of fertilizer dealers were under middle age group. Similar findings were also reported by [1-3].

3.2 Gender

The data presented related to gender in the Table 2 depicted that more than half of the online trained fertilizer dealers (74.00%) enrolled in the INM certificate course were males and 26.00 percent of the respondents were females. In the case of offline trained fertilizer dealer's majority (72.67%) enrolled in the INM certificate courses were males and 27.33 percent of the respondents were females.

It was clear that the majority of respondents in the INM certificate course were male. There was a significant discrepancy in the enrolment ratio between male and female participants, with twice as many male respondents. Earlier the fertilizer dealership was a male dominated business and now females have started entering in this business too. Also, a number of barriers that women encounter, including domestic duties, family obligations, ignorance, the distance to training facilities might be the reasons for less number of female participants in the certificate course. The findings are in line with the findings reported by [4-6].

3.3 Education

The data presented in Table 3 indicated that nearly half of the online trained fertilizer dealers (54.00%) were having graduation and above followed by higher secondary education (23.33%), secondary education (22.67%). Whereas, in case of offline trained fertilizer dealers 58.00 percent of them had graduation and above followed by higher secondary education (28.66%) and secondary education (13.34%).

The probable reason was that the minimum eligibility of educational qualification 10th standard to get admission in the INM certificate course. This finding is in consistent with [7,2,8].

3.4 Business Experience

It is evident from the data Table 4 that more than half (63.33%) of online trained fertilizer dealers had very short experience (<5 years) followed by 12.67 percent dealers had 6 to 10 years of short experience, 09.33 percent dealers had 11 to 15 years of medium experience, 08.67 percent dealers had more than 20 years of very long experience and 06.00 percent dealers had 16 to 20 years of long experience. Whereas, in case of offline trained fertilizer dealers 71.33 percent had very short experience (<5 years) followed by

12.67 percent dealers had 6 to 10 years of short experience, 07.33 percent dealers had 11 to 15 years of medium experience, 05.34 percent dealers had more than 20 years of very long experience and 03.33 percent dealers had 16 to 20 years of long experience.

The below findings lead to the conclusion that the majority of the fertilizer dealers had very short experience, which might be due to the fact that a big segment of fertilizer dealers was young in age, they might have started their business before decade. Regarding experience, the data showed that irrespective of their experiences they opted for new programmes to enhance their competencies and widen their business. The findings are in line with the findings reported by [9,5].

3.5 Annual Income

The Table 5 showed that the annual income of majority (35.33%) online trained fertilizer dealers ranged from Rs.50,001 to Rs.1,00,000 followed by 24.67 percent of dealers had an annual income up to Rs.50,000, 22.00 percent of dealers had an annual income ranged from Rs.1,00,001 to Rs.1,50,000, 10.00 percent of dealers had an annual income ranged from Rs.1,50,001 to Rs.2,00,000 and 08.00 percent of dealers had an annual income above Rs.2,00,000 respectively. Whereas in the case of offline trained fertilizer dealers, the majority 28.66 percent of dealers had an annual income above Rs.2,00,000 followed by 20.67 percent of dealers had Rs.1,50,001 to Rs.2,00,000, 20.00 percent of dealers had Rs.50,001 to Rs.1,00,000, 18.00 percent of dealers had an annual income up to Rs.50,000 and 12.67 percent of dealers had Rs.1,00,001 to Rs.1,50,000 respectively.

The below findings indicate that the majority of the respondents were found dependent on input dealership business activity as a primary source of income and few respondents had their income sources both from agriculture, agri input dealership and other business activities. A notable section of participants were found to be young and just entering into the agri input dealership. This result is in agreement with the findings of [10,11].

3.6 Extension Contact

The Table 6 revealed that, 59.33 percent of online trained fertilizer dealers had a medium level of extension contact followed by low (38.67%) and high (02.00%) extension contact. Whereas, nearly half of the offline trained fertilizer dealers (52.67%) belonged to medium level of extension contact followed by low (44.00%) and high (03.33%) categories.

The probable reason might be due to their association with the certificate programme, where they might have realised the importance of extension contact to boost up extension services as well as their own business. This might be also due to the higher educational qualification of dealers and good relations with extension personnel. The findings are in line with the findings reported by [12,2,13].

3.7 Mass Media Participation

It is evident from the data Table 7 that nearly one-half (42.00%) of the online trained fertilizer dealers had a medium level of mass media participation followed by 33.33 percent of the dealers had a high level and 24.67 percent of them had a low level of mass media participation. In the case of offline trained fertilizer dealers, 46.67 percent had a medium level of mass media participation followed by 31.33 percent of the dealers, who had a high level, 22.00 percent of them had a low level of mass media participation.

It is clear from the Table 7 that most of the fertilizer dealers were roofed under medium level to high level of mass media participation, the probable reason might be because all the fertilizer dealers had a high level of education and interest in updating the latest agricultural technologies from different mass media sources. A good knowledge status in the usage of Information and Communication Technology (ICT) devices could also be another reason for medium to high levels of mass media exposure. The findings are in line with the findings reported by [1-3].

3.8 Type of Dealership

The data from the Table 8 indicated that majority (90.00%) of the online trained fertilizer dealers were retailers followed by 05.33 percent were wholesalers and 04.67 percent were distributors. Whereas in the case of offline trained fertilizer dealers, 93.34 percent were retailers followed by 03.33 percent were wholesalers and distributors.

The Table 8 findings lead to the conclusion that the majority of the dealers were doing retail business. This might be due to the fact that the

majority of them were working in rural and semi-urban areas with limited areas of work. Hence, they might have started the retail business. The findings are in line with the findings reported by [8].

3.9 Nature of Inputs Marketed

The data from the Table 9 indicated that majority (30.00%) of the online trained fertilizer dealers were engaged to sell two types of inputs followed by 29.33 percent, who sold only one type of input, 20.67 percent of them sold three types of inputs, 14.00 percent of them sold four types of inputs and 06.00 percent of them sold five types of inputs. Whereas in the case of offline trained fertilizer dealers, 27.33 percent of them sold two and three types of inputs followed by 22.67 percent of them sold one type of input, 14.00 percent of them sold four types of inputs and 08.67 percent of them sold five types of inputs.

From the Table 9 result, it could be inferred that the majority of fertilizer dealers were selling a combination of two to three inputs (fertilizers, organic manures, pesticides/fungicides, seeds/seedlings, *etc.*). The probable reason for this might be to get profit with less labour cost, time and medium investment. This result was in line with the findings of [12,1,3].

3.10 Source of Motivation to Join Certificate Course

The data from the Table 10 indicated that the majority (50.67%) of online trained fertilizer dealers used the source of getting motivation from government agencies followed by private agencies (21.33%), personal contacts (16.00%) and mass media (12.00%). Whereas in case of offline trained fertilizer dealers majority (59.33%) of them used the source of getting motivation from government agencies followed by private agencies (18.00%), personal contacts (14.67%) and mass media (08.00%).

The Table 10 findings lead to the conclusion that the majority of fertilizer dealers were motivated to join the certificate course primarily through government agencies, as indicated by the data. This strong influence likely stems from the government's role in promoting agricultural development and supporting fertilizer dealers. Government agencies often provide resources, guidance and incentives that highlight the business prospects and potential benefits of becoming a fertilizer dealer. Additionally, the motivation from government agencies aligns with

the dealers' interests in enhancing their skills and capitalizing on profitable opportunities in the agricultural sector. This finding is in line with the findings of (Rastogi and Hasan, 2014); [14,13].

3.11 Computer Proficiency

Results observed from Table 11 revealed that nearly one-half (34.67%) of online trained fertilizer dealers had a good level of computer proficiency followed by 25.33 percent dealers had an average level, 21.33 percent had an excellent level and 18.67 percent had a poor level of computer proficiency. In the case of offline trained fertilizer dealers, 41.33 percent had a good level of computer proficiency followed by 23.33 percent dealers who had an excellent level, 20.00 percent had an average level and 15.34 percent had a poor level of computer proficiency.

The Table 11 findings lead to the conclusion that majority of the online and offline trained fertilizer dealers had the ability to use computer resources/software. It can be interpreted from these results that fertilizer dealers were ready to learn any course through online/distance learning. The probable reason might be, that most of the dealers were graduated. The findings are in line with the findings reported by [6].

3.12 Training Received

Results observed from Table 12 revealed that majority (36.67%) of the online trained fertilizer dealers had received training from research station/SAU, followed by 31.33 percent from department of agriculture, 24.00 percent from fertilizer/pesticide companies and 08.00 percent dealers received training from non-government organizations. In the case of offline trained fertilizer dealers, the majority 40.67 percent had received training from research station/SAU, followed by 32.67 percent from department of agriculture, 21.33 percent from fertilizer/pesticide companies and 05.33 percent dealers received training from non-government organizations.

The below Table 12 narration indicated that the majority of the fertilizer dealers got training from research station/SAU and fertilizer/pesticide companies. This might be due to the fact that the university organized one or two days of training programme on crop protection and input producers also organized such training programmes for the promotion of their business. The findings are in line with the findings reported by [8].

Table 1. Distribution of the fertilizer dealers according to their age (N=300)

Sl. No	Age	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Young age (< 35 years)	31	20.67	54	36.00	85	28.33
2	Middle age (36 to 50 years)	69	46.00	51	34.00	120	40.00
3	Old age (>50 years)	50	33.33	45	30.00	95	31.67
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 2. Distribution of the fertilizer dealers according to their gender (N=300)

Sl. No	Gender	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Male	111	74.00	109	72.67	220	73.33
2	Female	39	26.00	41	27.33	80	26.67
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 3. Distribution of the fertilizer dealers according to their education (N=300)

Sl. No	Education	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Primary education (Up to 8th Standard)	00	00.00	00	00.00	00	00.00
2	Secondary education (9th to 10th Standard)	34	22.67	20	13.34	54	18.00
3	Higher secondary education (11th to 12th Standard)	35	23.33	43	28.66	78	26.00
4	Graduate and above	81	54.00	87	58.00	168	56.00
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 4. Distribution of the fertilizer dealers according to their business experience (N=300)

Sl. No	Experience	Online trained fertilizer dealers (n₁=150)		Offline trained fertilizer dealers (n₂=150)		Total (n=300)	
		f	%	f	%	f	%
1	Very short experience (<5 years)	95	63.33	107	71.33	202	67.33
2	Short experience (6-10 years)	19	12.67	19	12.67	38	12.67
3	Medium experience (11-15 years)	14	09.33	11	07.33	25	08.33
4	Long experience (16-20 years)	9	06.00	05	03.33	14	04.67
5	Very long experience (>20 years)	13	08.67	08	05.34	21	07.00
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 5. Distribution of the fertilizer dealers according to their annual income (N=300)

Sl. No	Annual income	Online trained fertilizer dealers (n₁=150)		Offline trained fertilizer dealers (n₂=150)		Total (n=300)	
		f	%	f	%	f	%
1	Up to Rs.50,000	37	24.67	27	18.00	64	21.33
2	Rs.50,001 to Rs.1,00,000	53	35.33	30	20.00	83	27.67
3	Rs.1,00,001 to Rs.1,50,000	33	22.00	19	12.67	52	17.34
4	Rs.1,50,001 to Rs.2,00,000	15	10.00	31	20.67	46	15.33
5	Above Rs.2,00,000	12	08.00	43	28.66	55	18.33
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 6. Distribution of the fertilizer dealers according to their extension contact (N=300)

Sl. No	Extension contact	Online trained fertilizer dealers (n₁=150)		Offline trained fertilizer dealers (n₂=150)		Total (n=300)	
		f	%	f	%	f	%
1	Low (upto 6 score)	58	38.67	66	44.00	124	41.33
2	Medium (in between 7 and 11 score)	89	59.33	79	52.67	168	56.00
3	High (above 11 score)	03	02.00	05	03.33	08	02.67
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 7. Distribution of the fertilizer dealers according to their mass media participation (N=300)

Sl. No	Mass media participation	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Low (0 to 6 score)	37	24.67	33	22.00	70	23.33
2	Medium (7 to 9 score)	63	42.00	70	46.67	133	44.33
3	High (10 to 12 score)	50	33.33	47	31.33	97	32.34
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 8. Distribution of the fertilizer dealers according to their type of dealership (N=300)

Sl. No	Type of dealership	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Retailer	135	90.00	140	93.34	275	91.67
2	Wholesaler	8	05.33	05	03.33	13	4.33
3	Distributor	7	04.67	05	03.33	12	04.00
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 9. Distribution of the fertilizer dealers according to their nature of inputs marketed (N=300)

Sl. No	Type of input supply	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	**One type of input** (fertilizer/ organic manure/ pesticide or fungicide/ seed or seedling/ machinery)	44	29.33	34	22.67	78	26.00
2	**Two types of input** (fertilizer+ organic manure/ fertilizer+ pesticide or fungicide/ fertilizer+ seeds or seedlings/ fertilizer+ machinery/ organic manure+ pesticide or fungicide/ organic manure+ seeds or seedlings/ organic manure+ machinery/ pesticide or fungicide+ seed or seedling/ pesticide or fungicide+ machinery/ seed or seedling+ machinery)	45	30.00	41	27.33	86	28.67
3	**Three types of input** (fertilizer+ organic manure+ pesticide or fungicide/ fertilizer+ seed or seedling+ machinery/ organic manure+ seed or seedling+ machinery/ pesticide or fungicide+ seed or seedling+ machinery)	31	20.67	41	27.33	72	24.00
4	**Four types of input** (fertilizer+ organic manure+ pesticide or fungicide+ seed or seedling/ fertilizer+ organic manure+ pesticide or fungicide+ machinery/ organic manure+ pesticide or fungicide+ seed or seedling+ machinery)	21	14.00	21	14.00	42	14.00
5	**Five types of input** (fertilizer+ organic manure+ pesticide or fungicide+ seed or seedling+ machinery/ fertilizer+ organic manure+ pesticide or fungicide+ seed or seedling+ machinery+ others)	09	06.00	13	08.67	22	07.33
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 10. Distribution of the fertilizer dealers according to their source of motivation to join certificate course (N=300)

Sl. No	Type of dealership	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Government agencies	76	50.67	89	59.33	165	55.00
2	Private agencies	32	21.33	27	18.00	59	19.67
3	Personal contacts	24	16.00	22	14.67	46	15.33
4	Mass media	18	12.00	12	08.00	30	10.00
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 11. Distribution of the fertilizer dealers according to their computer proficiency (N=300)

Sl. No	Computer proficiency	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Poor (<15 score)	28	18.67	23	15.34	51	17.00
2	Average (16 to 18 score)	38	25.33	30	20.00	68	22.67
3	Good (19 to 21 score)	52	34.67	62	41.33	114	38.00
4	Excellent (> 21 score)	32	21.33	35	23.33	67	22.33
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 12. Distribution of the fertilizer dealers according to their training received (N=300)

Sl. No	Training received	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Fertilizer/ Pesticide company	36	24.00	32	21.33	68	22.67
2	Research station/ SAU	55	36.67	61	40.67	116	38.67
3	Non-government organization	12	08.00	08	05.33	20	06.66
4	Department of agriculture	47	31.33	49	32.67	96	32.00
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

3.13 Management Orientation

Results observed from Table 13 represented that majority (46.00%) of the online trained fertilizer dealers had medium level of management orientation followed by 30.67 percent of them had high level and 23.33 percent had low level of management orientation. While, 44.66 percent of offline trained fertilizer dealers had medium level of management orientation followed by 28.67 percent had high level and 26.67 percent had low level of management orientation.

The probable reason might be due to the implementation of updated business rules and the latest marketing techniques to gain profits and they were aware of the importance of proper management of their enterprises as majority of them were highly educated. The findings are in line with the findings reported by [15,5,3].

3.14 Decision Making Ability

Results observed from Table 14 indicated that the majority (46.00%) of online trained fertilizer dealers had medium level of decision making ability followed by high level (34.00%) and low level (20.00%) of decision making ability. Whereas in the case of offline trained fertilizer dealer's majority of them (35.33%) had medium level of decision making ability followed by low level (34.67%) and high level (30.00%) of decision making ability.

It is clear from Table 14 that most of the fertilizer dealers were roofed under medium level to high level of decision making ability. The possible reason might be that the fertilizer dealers had gone through a better educational background, a clear-cut vision and were very much sure about their decisions. These findings were consistent with [7,15,12].

3.15 Information Seeking Behavior

Results obtained from Table 15 represented that the majority (53.33%) of online trained fertilizer dealers had medium level of information seeking behavior followed by 24.00 percent had low level and 22.67 percent had high level of information seeking behavior. While, 61.33 percent of offline trained fertilizer dealers had medium level of information seeking behavior followed by 20.00 percent of them had high level and 18.67 percent had low level of information seeking behavior.

It is clear from Table 15 that the majority of farm fertilizer dealers had medium level of information seeking behavior. This could be due to the fact

that a good educational background and to provide appropriate input and agro-advisory services to the farmers they might have used various formal and non-formal sources for collecting the required information. This result was in agreement with the findings of [15,6].

3.16 Economic Motivation

Results obtained from Table 16 revealed that the majority (51.33%) of online trained fertilizer dealers had medium level followed by 34.67 percent and 14.00 percent of dealers had high and low level of economic motivation respectively. Similarly majority (44.00%) of the offline trained fertilizer dealers had medium level of economic motivation, followed by 36.00 percent and 20.00 percent of dealers had high and low level of economic motivation respectively.

It is clear from Table 16 that the majority of fertilizer dealers had medium and high level of economic motivation, this might be due to the high profit orientation of the fertilizer dealers and their desire to stabilize and improve profit further with a clear-cut understanding of agricultural information and marketing. The findings are in line with the findings reported by [16,5].

3.17 Risk Taking Ability

Results obtained from Table 17 revealed that the majority (50.67%) of the online trained fertilizer dealers had medium level of risk taking ability followed by 32.66 percent and 16.67 percent had high level and low level of risk taking ability respectively. Similarly, majority (46.00%) of offline trained fertilizer dealers had medium level of risk taking ability followed by 30.00 percent and 24.00 percent had high and low level of risk taking ability respectively.

The findings of the study clearly indicated that the majority of fertilizer dealers belonged to medium to high categories of risk taking ability. The probable reason might be, that the business itself is a challenging job, the dealers have to be always vigilant about market fluctuation and they have to face the risk only then they will be able to sustain themselves in the market. This finding was in line with the findings of [10,12,2].

3.18 Level of Aspiration

Results obtained from Table 18 indicated that 42.00 percent of the online trained fertilizer dealers were having a medium level of aspiration

Table 13. Distribution of the fertilizer dealers according to the level of management orientation (N=300)

Sl. No	Management orientation	Online trained fertilizer dealers (n₁=150)		Offline trained fertilizer dealers (n₂=150)		Total (n=300)	
		f	%	f	%	f	%
1	Low level (<24 score)	35	23.33	40	26.67	75	25.00
2	Medium level (24 to 25 score)	69	46.00	67	44.66	136	45.33
3	High level (>25 score)	46	30.67	43	28.67	89	29.67
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 14. Distribution of the fertilizer dealers according to their decision making ability (N=300)

Sl. No	Decision making ability	Online trained fertilizer dealers (n₁=150)		Offline trained fertilizer dealers (n₂=150)		Total (n=300)	
		f	%	f	%	f	%
1	Low level (<8 score)	30	20.00	52	34.67	82	27.33
2	Medium level (9 to 11 score)	69	46.00	53	35.33	122	40.67
3	High level (>11 score)	51	34.00	45	30.00	96	32.00
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 15. Distribution of the fertilizer dealers according to their information seeking behavior (N=300)

Sl. No	Information seeking behavior	Online trained fertilizer dealers (n₁=150)		Offline trained fertilizer dealers (n₂=150)		Total (n=300)	
		f	%	f	%	f	%
1	Low level (<28 score)	36	24.00	28	18.67	64	21.33
2	Medium level (29 to 31 score)	80	53.33	92	61.33	172	57.34
3	High level (>31 score)	34	22.67	30	20.00	64	21.33
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 16. Distribution of the fertilizer dealers according to their economic motivation (N=300)

Sl. No	Economic motivation	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Low level (<20 score)	21	14.00	30	20.00	51	17.00
2	Medium level (21 to 24 score)	77	51.33	66	44.00	143	47.67
3	High level (>24 score)	52	34.67	54	36.00	106	35.33
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 17. Distribution of the fertilizer dealers according to their risk taking ability (N=300)

Sl. No	Risk taking ability	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Low level (<19 score)	25	16.67	36	24.00	61	20.33
2	Medium level (20 to 23 score)	76	50.67	69	46.00	145	48.33
3	High level (>23 score)	49	32.66	45	30.00	94	31.34
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

Table 18. Distribution of the fertilizer dealers according to their level of aspiration (N=300)

Sl. No	Level of aspiration	Online trained fertilizer dealers (n_1=150)		Offline trained fertilizer dealers (n_2=150)		Total (n=300)	
		f	%	f	%	f	%
1	Low level (<9 score)	37	24.67	43	28.66	80	26.67
2	Medium level (10 to 12 score)	63	42.00	58	38.67	121	40.33
3	High level (>12 score)	50	33.33	49	32.67	99	33.00
Overall		**150**	**100**	**150**	**100**	**300**	**100**

f= frequency and %= percentage

followed by high (33.33%) and low (24.67%) level of aspiration. While, 38.67 percent of offline trained fertilizer dealers had medium level of aspiration followed by 32.67 percent had high level and 28.66 percent had low level of aspiration.

The findings of the study clearly indicated that the majority of fertilizer dealers had medium to high categories of aspiration. The probable reason might be that most of the dealers' graduates and were of middle aged. They had more zeal to expand their business to get more profit and improve their status. This finding was in line with the findings of [17].

4. CONCLUSION

As far as socio-personal variables, the findings of the study revealed that majority of the online trained and offline trained fertilizer dealers were medium in their profile characteristics. Most of the fertilizer dealers 40.00 percent were from middle age group, majority 73.33 percent of the dealers were males, educated up to graduation level (56.00%) and more than half of the fertilizer dealers (67.33%) had experience up to 5 years. Regarding annual income, the data revealed that the majority of online trained dealers' annual income was Rs.50,001 to Rs.1,00,000, whereas most of offline trained dealers earned above Rs.2,00,000 of annual income. Also, data depicted that the majority (56.00%) had medium level of extension contact. It was revealed that fertilizer dealers (44.33%) had medium level of mass media participation. Regarding the type of dealership, it was concluded that the majority (91.67%) of the fertilizer dealers are retailers. Regarding the nature of inputs marketed, the data revealed that the majority of online trained dealers' (30.00%) of input dealers were dealing with 2 types of inputs, whereas most of offline trained dealers (27.33%) were dealing with 2 and 3 types of inputs. Regarding the source of motivation to join certificate course it was concluded that the majority (55.00%) of fertilizer dealers used the source of getting motivation from government agencies. Regarding computer proficiency, it was revealed for both dealers were good level (38.00%) of computer knowledge. Also, data depicted that the majority (38.67%) of dealers received training from research station and SAU. Regarding management orientation it was concluded that majority (45.33%) of the fertilizer dealers had medium level. It is evident from the finding that the majority (40.67%) of total fertilizer dealers had medium level of decision making ability. It was revealed that more than half of the respondents (57.34%) had medium level of information seeking behavior. It was revealed that the majority (47.67%) of fertilizer dealers were medium level of economic motivation. It was indicated that the majority (48.33%) of fertilizer dealers had medium level of risk taking ability. Also, the study presented that the majority (40.33%) of the fertilizer dealers had medium level of aspiration. Hence, the planners and development agencies need to give attention to medium level profile characteristics of fertilizer dealers while planning training programmes and effective integration of fertilizer dealers with the public system.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/122774