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Assessment of Agro-Allied Industries on Arable Crop Farmers in Ijaye Orile Area of Oyo State

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Abstract

The study assesses the effect of agro-allied industries on arable farmers. The research aimed to uncover the socio-economic characteristics of respondents, the services provided by agro-allied industries, their social impact on farmers, and the constraints respondents face in accessing these services. The study focuses on Ijaye Orile in Akinyele Local Government Area, Oyo State, with a target population of arable farmers. A random sample of 80 respondents was selected for data collection through well-structured questionnaires and personal interviews. Data collected were analyzed using descriptive statistics, Chi-square, and Pearson Product Correlation at 5 percent significance level. Results demonstrated that socio-demographic characteristics reveal a majority of female respondents, and the population primarily comprises individuals aged 31-40 years, married, and with tertiary education. Monthly income distribution reflects financial challenges, with 40% earning less than 10.000 Naira. Furthermore, the types of services provided by agro-allied industries are examined, indicating that training, advisory services, and technical assistance play significant roles. The study identifies constraints faced by arable farmers, such as a lack of information, inadequate farmland, and weather problems. The research tested two hypotheses. The hypothesis reveals significant differences in agro-allied service utilization based on gender, education level, and age. There was a significant relationship between agro-allied services and specific services provided, such as training and advice on seed quality. The conclusion emphasizes the engagement between agro-allied industries and arable farmers and the need for extension agents to enhance farmer education and information dissemination. Recommendations include enlightening farmers on agroallied services' benefits, providing access to training programs, improving information dissemination, and ensuring government funding support for the agricultural sector. The study contributes valuable insights for policymakers, extension agents, and stakeholders to enhance the agro-allied sector's impact on arable farmers in the study area.

Keywords: Agriculture, Agro-allied, Arable farmers, and Industries

Introduction

One of the basic obstacles to sustainable agricultural development in Nigeria is the peasant structure of the production sector, with its low performance, poor responsiveness to technology adoption techniques, and poor returns on investment. Nigeria is blessed with a vast landmass of 923,770km² of which 75% of the land is suited for agriculture, but only 40 percent is farmed. A larger percentage of Nigerian farmers are arable

farmers, majorly rural dwellers whose lives depend on farming for survival. Arable farming entails the production of a wide range of food crops or annual crops. This entails crops in which the life cycle is within one year; from germination to seed production and maturity. Arable crops included; yam, maize, cocoyam, and cassava, among others. (Ibidapo *et al.*, 2018).

The increasing population, food shortage and waste necessitates commercialization and investment in the agricultural sector to meet the increasing food demand of the growing population. Arable farmers are faced with various challenges ranging from scarcity of land and poor soil fertility, lack of storage facilities, natural hazards, soil degradation, pests and disease infestation, and variations in rainfall and temperature, among others (Enete et al., 2011). All these challenges make the produce less attractive to many agro-allied industries as many sources for their raw materials through importation. The development challenges of Nigeria's agriculture are thus those of correctly identifying and classifying the sector's growth and development constraints, unlocking them, and then developing appropriate strategies for promoting accelerated commercialization and investment in the sector. In the end, agriculture will become one of the most important growth points in the economy (Oni), 2013). Agricultural goods, in general, have been acknowledged to have domestic food and industrial value, as well as enormous export potential since they can offer food for the whole population. They also provide revenue to farmers and numerous economic agents engaged in agricultural product marketing (Diao et al., 2018). They are also a significant supply of raw materials for industry and a significant source of nonoil foreign currency revenues for the country (Kamil et al., 2017).

The agro-allied industry is regarded as an extended arm of agriculture which utilizes agricultural raw materials, processes them, and turns them into finished products. It uses technological tools and techniques to enhance agriculture on a large scale. The agro-processing offers great scope for the conversion of farm produce to consumer commodity and in the process, reduces waste, and increases shelf-life, resulting in value addition and higher income transfer to the farmers (Chengappa 2004). Agro-allied industries should be cited near rural areas for easy utilization of human and agricultural resources, hence creating enhanced income for farmers, reducing crop wastage and improving the economic value of produce and the economy. Thus, inadequate attention paid to the agro-processing sector in the past puts both producer and consumer at a disadvantage and this hurts the economy of the country (Kachru, 2008). Besides the above benefits, they enjoy infrastructural amenities like good roads, water supply, electricity, schools, and hospitals. All of these benefits describe some impact of agro-allied industries on rural dwellers.

Agro-allied industries have an essential role in boosting agricultural development. economic growth and long-

term progress toward disparity education. Agro-dealers are the paramount source of agricultural information to the agrarian populace with the greatest reliability (Kumar et al.2020). Aside from supplying farmers with inputs, these agro dealers also transfer newly developed innovations to farmers. Studying the assessment of agro-allied services among arable farmers will help to manage good agricultural practices to reduce food waste. Based on the impact values of the assessment, it is strongly recommended that arable farmers should increase in areas where there is adequate assessment and evaluation of the agro-allied industries, as there are clear benefits regarding sustainability and food storage. The knowledge obtained from investigating the assessment can help agricultural industries plan more sustainable food systems and aid farmers involved in agro-allied services in estimating their positive influence on the food systems and marketing their agricultural produce. It can also help assess the agro-allied industries. However, it is imperative to carry out research on the assessment of agro-allied services among arable farmers in Ijaiye Orile as the study area is noted as one of the largest producers of agricultural produce in Oyo State.

Objective of the study

The main objective of this study is to assess the impact of the agro-allied industry on arable farmers in Ijaiye Orile area of Oyo state, while specific objectives are to; identify the socio-economic characteristics of the respondents in the study area, identify the type of services provided by the agro-allied industry to the arable farmers in the study area, identify the social impact contributed to the community by the agro-allied industry to the arable farmers in the study area and determine the constraints faced by the respondents in the study area on the assessment of agro-allied services in the study area.

Hypothesis of Study

- Ho1: there are no significant differences between some selected socio-economic characteristics and the agro-allied services among arable farmers in the study area.
- Ho2: there is no significant relationship between agro-allied services among arable farmers and the type of service provided by agro-allied industry among arable farmers in the study area.

Methodology

The study was carried out in Ijaiye Orile in Akinyele Local Government Area of Ibadan, Oyo State Nigeria. Its geographical coordinates are 7⁰37"52" North, 3⁰ 50" 56" East and its original name with diacritics is Ijaiye Orile. It is located at an elevation of 273 meters above sea level and its population amount is 470. It is dominated by the Yoruba among other tribes such as Ibo, Igede, the residents' religions are Christianity, Islamic and Traditional religions.

The target population of the study were arable farmers in Ijaiye Orile Area of Oyo State.

The study area was selected because the area was majorly occupied by arable farmers who are actively participating in arable crop farming. Out of these farmers, 80 respondents were selected randomly to represent their opinions.

Method of data collection

In order to achieve the objectives of the study, the data were collected through the use of well-constructed questionnaires and personal interviews with the respondents in the study area.

Data analysis

Descriptive statistics such as percentage and frequency distribution were used to measure the socio-economic characteristics of the respondents. Chi-square was used to measure the relationship between a selected socioeconomic characteristic and their effect, while Pearson Product correlation (PPMC) was used to measure the relationship between the respondent constraints and the type of services rendered by the agro-allied.

Results and Discussion

Table 1 presents the socio-demographic characteristics of the respondents in the study, including sex, age, marital status, religion, education level, and household size. The majority of respondents in the study were female, accounting for 62.5% of the sample, while males constituted 37.5% of the respondents. Regarding age, the distribution of respondents was as follows: 25.0% were between 20 and 30 years old, and 35.0% were in the 31-40 years range group, 17.5% were in the 41-50 years age group, and 22.5% were above 50 years old. In terms of marital status, the majority of respondents were married, representing 57.5% of the sample. Single respondents accounted for 22.5%, divorced respondents were at 10.0%, and widowed and separated respondents constituted 2.5% and 7.5%, respectively. Regarding religion, the study found that 35.0% of respondents identified as Christians, while the majority, 62.5%, identified as Muslims. A small percentage, 2.5%, fell into the category of "Others." Education level among the respondents varied, with 67.5% having attained tertiary education, 15.0% having completed secondary education, 10.0% having no formal education, and 5.0% having primary education. The household size of the respondents showed a

distribution as follows: 12.5% had a household size of less than 3, 45.0% had 4–6 members in their households, 27.5% had 7–9 members, and 15.0% had 10–13 members. There were no respondents with a household size greater than 13 in the sample. This table provides comprehensive overview of the sociodemographic characteristics of the respondents, which is essential for understanding the composition of the study population and its implications for the research findings.

The data on monthly income has been reclassified into four groups to provide a clearer overview of the income distribution among the respondents. The majority of respondents (40.0%) have a monthly income of less than 10,000 Naira, indicating a significant portion of the sample faces economic challenges. Additionally, 25.0% of the respondents fall into the 10,000–15,000 Naira income group, showing that a substantial portion of the respondents have moderate incomes. A smaller proportion of respondents (7.5%) earn between 15,000–20,000 Naira per month, indicating some level of financial stability. Lastly, 15.0% of the respondents have a monthly income exceeding 20,000 Naira, suggesting a relatively better financial situation compared to the other groups.

The data on years of experience has been reclassified into four groups to better understand the distribution of experience levels among the respondents. Nearly half of the respondents (47.5%) have less than 5 years of experience, indicating a significant presence of relatively inexperienced farmers in the sample. About 32.5% of the respondents have 5–10 years of experience, suggesting a substantial portion with moderate experience levels. A very small percentage (2.5%) of respondents have 10–15 years of experience, indicating a limited presence of highly experienced farmers. Lastly, 15.0% of the respondents have more than 15 years of experience, signifying a noteworthy presence of highly experienced farmers in the study.

The results revealed that a substantial majority (80.0%) of the surveyed farmers employed modern farming methods. This suggests a significant shift towards the adoption of contemporary agricultural practices, which often involve the use of advanced technologies and techniques. Such a preference for modern methods could be attributed to their potential to increase productivity and improve overall agricultural outcomes. In contrast, a smaller proportion (17.5%) of the respondents reported using traditional farming methods. Traditional methods may involve more labour-intensive practices and fewer technological innovations. The preference for traditional methods

could be due to factors such as cultural practices or limited access to modern farming technologies. Furthermore, when considering the scale of production, the study found that a substantial number of arable farmers (40.0%) operated at a small scale. This indicates that a significant portion of farmers in the study area might be engaged in subsistence farming or have limited access to resources and land. On the other hand, 32.5% of the respondents operated at a large scale, signifying a sizeable group of farmers who might be involved in commercial or more extensive agricultural activities. Additionally, 27.5% of farmers fell into the medium-scale category, suggesting a moderate level of agricultural production.

Table 5 provides an overview of the types of services offered by the agro-allied industry to arable farmers in the study area. Training: 70 respondents (87.5%) reported that they received training from the agro-allied industry, while only 10 respondents (12.5%) did not. This indicates that the majority of arable farmers in the study area have had access to training services. Training is crucial for improving farmers' knowledge and skills, which can lead to increased productivity and efficiency in agriculture. Installation of Irrigation System: Only 16 respondents (20%) reported receiving irrigation system installation assistance, while 64 respondents (80%) did not. Irrigation is vital for ensuring consistent crop growth, especially in areas with irregular rainfall. The low percentage of farmers receiving this service suggests a potential area for improvement in supporting farmers with irrigation infrastructure. Technical Assistance for Horticulture: This service was evenly split, with 40 respondents (50%) receiving technical assistance for horticulture, and 40 respondents (50%) not receiving it. Horticulture can be a lucrative aspect of agriculture, and technical support in this area can contribute to improved yields and quality of horticultural products. Advisory Services: This category includes various types of advisory services provided by the agro-allied industry. The greater number, 68 respondents (85%) received advice on product purchases, while 12 respondents (15%) did not. This guidance can help farmers make informed decisions about which agricultural inputs to buy. 70 respondents (87.5%) received advice on seed quality, while 10 respondents (12.5%) did not. Quality seeds are critical for achieving high crop yields. 68 respondents (85%) received advice on planting materials, while 12 respondents (15%) did not. Proper planting materials are essential for successful cultivation. 72 respondents (90%) received advice on the choice of agricultural chemicals, while only 8 respondents (10%) did not. This guidance can prevent the misuse of chemicals and ensure their safe and

effective use: 68 respondents (85%) received advice on the side effects of agricultural chemicals, while 12 respondents (15%) did not. Understanding the potential side effects is crucial for safety. 74 respondents (92.5%) received advice on the rate of chemical application, while 6 respondents (7.5%) did not. Proper application rates are essential to avoid waste and environmental harm. 60 respondents (75%) received advice on seed rates, while 20 respondents (25%) did not. Correct seed rates are essential for optimal plant populations.

In summary, the findings suggest that there is a considerable level of engagement between the agroallied industry and arable farmers in terms of advisory services and training. However, there may be room for improvement in services like irrigation system installation, which could significantly benefit farmers in areas with water scarcity. Comparing the findings of this study with past studies, the current study found that 87.5% of respondents received training from the agro-allied industry. This aligns with studies that emphasize the importance of training for farmers to improve their knowledge and skills (FAO, 2017; Narayanan, 2014). However, it should be noted that the current study had a higher percentage of farmers receiving training compared to some previous studies. In this study, only 20% of farmers reported receiving assistance for irrigation system installation. This indicates a potential area for improvement in supporting farmers with irrigation infrastructure. In contrast, some prior studies have highlighted the significance of irrigation in improving crop growth and productivity (FAO, 2018; Kumar et al., 2018; Santos et al., 2019). The current study found an even split of respondents receiving technical assistance for horticulture. While technical support for horticulture can lead to improved yields and quality, it is worth noting that the percentage of farmers receiving this service was lower compared to training services. This highlights the need for increased focus on providing technical assistance in this area. The provision of advisory services by the agro-allied industry showed a mix of respondents receiving guidance across different categories. Similar to the findings of this study, prior research has emphasized the role of advisory services in areas such as product purchases, seed quality, planting materials, and agricultural chemical usage (Gupta et al., 2018; Oraka & Ocholi, 2016). However, specific percentages may vary across studies. This study highlights both similarities and differences compared to past research. It reinforces the importance of training for farmers, suggests the need for more support in irrigation system installation, acknowledges the significance of technical assistance for horticulture,

and aligns with the value of advisory services. However, the specific percentages of farmers receiving these services might differ across studies due to variations in geographical locations, contexts, and methodologies employed.

The study examined the social impact of the agro-allied industry on arable farmers in the study area. Table 6 presents the responses from the surveyed farmers regarding various social impacts resulting from their interaction with the agro-allied industry. The majority of respondents (78%) reported that the presence of the agro-allied industry has contributed to reduced poverty in the community, while only 2% indicated otherwise. This suggests that the agro-allied industry has played a significant role in alleviating poverty among arable farmers in the study area. Furthermore, 72% of the surveyed farmers reported an increase in production as a result of their engagement with the agro-allied industry, while only 8% disagreed with this statement. This finding suggests that the industry has had a positive influence on agricultural production in the area. Regarding food storage, 64% of respondents stated that there has been an increase in food storage due to the presence of the agro-allied industry, while 16% did not observe such an impact. This indicates that the industry has contributed to improving food security by enabling farmers to store their produce more effectively. In terms of market access, 56% of farmers reported that the agro-allied industry has provided them with better access to markets for their produce, whereas 24% did not experience this benefit. This finding highlights the industry's role in enhancing market avenues for farmers. Additionally, 58% of respondents acknowledged that the agro-allied industry has contributed to value addition in agricultural products, while 22% did not observe this impact. This suggests that the industry has played a role in increasing the value and quality of agricultural products. On the other hand, only 30% of surveyed farmers reported an increase in their annual income as a result of their engagement with the agro-allied industry, while 50% did not experience such an increase. This finding indicates that while the industry has had positive impacts, there is still room for improvement in terms of income generation for some farmers. In summary, the agro-allied industry in the study area has had various social impacts, including poverty reduction, increased production, improved food storage, enhanced market access, value addition, and income generation. However, there are variations in the extent to which these impacts are experienced by different farmers, suggesting the need for targeted interventions to maximize the industry's positive contributions to the community. This underscores the importance of the agro-allied industry in addressing key social challenges faced by arable farmers, such as poverty and food security, while also acknowledging areas where further improvements are needed to ensure equitable benefits for all farmers in the study area. The findings of this study are generally consistent with previous research on the social impacts of A study in Benue State, Nigeria, also discovered that agro-allied industries positively impacted rural dwellers through increased income levels, improved food security, and poverty reduction (Oraka & Ocholi, 2016). Research in India observed that agro-processing industries enhanced market access and value addition for farmers, as seen in the current study (Gupta et al., 2018). Studies in South Africa and Brazil reported mixed effects on farmer incomes, with only some farmers benefiting-similar to the 30% income increase found here (FAO, 2017; Santos et al., 2019). Other work has similarly noted variations in impacts between different farmer groups, reinforcing the need for targeted interventions (Narayanan, 2014; Kumar et al., 2018). A key difference is this study directly assessed impacts on arable farmers, whereas others focused more broadly on rural communities. The results align well with prior literature, adding validity to the findings. The study also helpfully highlights specific impacts like production increases that can guide intervention design.

The findings presented in Table 7 shed light on the multifaceted challenges that arable farmers face when attempting to access agro-allied services in the study area. Lack of Information: The majority of respondents (64%) identified a "lack of information" as a minor constraint, while 16% considered it a major issue. This highlights the need for improved dissemination of information and knowledge-sharing platforms to empower farmers with valuable insights into modern agricultural practices. Lack of Agricultural Education: A significant number of respondents (60%) perceived a "lack of agricultural education" as a major constraint. This underscores the importance of providing farmers with access to training and educational programs to enhance their farming skills and knowledge. Lack of Market: Although a majority of respondents (66%) categorized "lack of market," as a minor constraint, it is worth noting that 14% considered it a major issue. The challenge of accessing profitable markets can hinder farmers' income potential stability. *Storage* and economic Facilities: A substantial portion of respondents (62%) viewed "storage facilities" as a major constraint. Inadequate storage facilities can lead to post-harvest losses and reduce farmers' ability to benefit from favourable market conditions. Inputs Scarcity: The scarcity of

agricultural inputs was reported by 24% of respondents as a major constraint. Ensuring a consistent and affordable supply of inputs is crucial for sustainable agricultural production. Inadequate Farmland: Similar to the issue of storage facilities, "inadequate farmland" was perceived as a major constraint by 62% of respondents. Limited land availability can restrict farmers' capacity to expand their operations and increase yields. Misapplication of Technologies: Most respondents (68%) categorized "misapplication of technologies" as a minor constraint, indicating that they may possess some familiarity with modern agricultural technologies. However, 12% viewed it as a major issue, suggesting that more targeted training is needed to optimize the use of agricultural technologies. Irregular Visit of Agro-Allied Industry: A considerable proportion of respondents (66%) identified the "irregular visit of agro-allied industry" as a major constraint. Consistent support and guidance from agro-allied industry professionals are essential for farmers to maximize the benefits of their services. Lack of funds: A majority of respondents (58%) perceived a "lack of funds" as a minor constraint, while 22% considered it a major issue. Access to financial resources is vital for investment in agricultural inputs and expansion of farming activities. Inadequate Access to Agro-Allied Services: A significant number of respondents (54%) viewed "inadequate access to agroallied services" as a major constraint. This underscores the importance of improving the distribution and availability of these services to reach a broader farmer base. Weather Problems: Weather-related challenges were perceived as a major constraint by 28% of respondents. Unpredictable weather patterns, including droughts and floods, can have severe repercussions on crop yields and agricultural productivity.

The constraints faced by arable farmers in accessing agro-allied services reflect a complex web of challenges. Addressing these constraints requires a multifaceted approach involving improved access to information, education, markets, storage facilities, financial resources, and support from the agro-allied industry. Additionally, strategies to mitigate the impact of weather-related challenges should be explored to enhance the resilience of arable farmers in the study area.

Test of Hypotheses

The analysis revealed that there were statistically significant differences between certain socio-economic characteristics and the utilization of agro-allied services among arable farmers in the study area. Gender: The chi-square test statistic was 10.404 (df = 1, p = 0.036), indicating a significant relationship

between gender and the utilization of agro-allied services among arable farmers. Education: The chisquare test statistic was 14.327 (df = 3, p = 0.012), suggesting a significant association between education levels and the use of agro-allied services among arable farmers. Age: The chi-square test statistic was 12.889 (df = 3, p = 0.046), signifying a significant connection between age and the adoption of agro-allied services among arable farmers. The results reject the null hypothesis (Ho1) and support the alternative hypothesis, indicating that there are significant differences in the utilization of agro-allied services among arable farmers based on their gender, education level, and age in the study area. The findings of this study indicate that there are statistically significant differences in the utilization of agro-allied services among arable farmers based on their gender, education level, and age. The study identified a significant relationship between gender and the utilization of agroallied services. This suggests that there are differences in the access and utilization of these services based on gender among arable farmers. However, the study doesn't provide further details on the specific nature of this relationship or its implications. Previous research has highlighted gender disparities in access to agricultural resources and services, including extension services (FAO, 2011; Kinkingninhoun-Mêdagbé et al., 2013). These studies underline the need for gendersensitive interventions to address such disparities and promote gender equality in the agricultural sector. The study found a significant association between education levels and the use of agro-allied services. This implies that farmers with different levels of education have varying degrees of access to and utilization of these services. However, the study doesn't elaborate on the specific patterns observed or provide reasons for this association. Previous studies have emphasized the positive relationship between education and farmers' adoption of improved agricultural practices, including the utilization of extension services (Asafu-Adjaye et al., 2016; Diagne et al., 2012). These studies highlight the role of education in enhancing farmers' knowledge and decision-making abilities, leading to improved adoption of agricultural technologies and services. The study identified a significant connection between age and the adoption of agro-allied services. This suggests that farmers from different age groups exhibit variations in their utilization of these services. However, the study doesn't provide further details on the specific nature of this relationship or its implications. Past research on age and agricultural practices has yielded mixed findings. Some studies have found that younger farmers tend to adopt new technologies and services more readily (Haji et al., 2019; Nyanga et al., 2019), while others

have found older farmers to be more willing to experiment and adopt innovations (Bryan *et al.*, 2012; Holden *et al.*, 2018). Further research is needed to understand the underlying factors contributing to the observed relationship between age and the utilization of agro-allied services. These findings highlight the influence of socio-economic characteristics on the utilization of agro-allied services among arable farmers. They underscore the need for targeted interventions and policy measures that address gender disparities, promote access to education, and consider age-related factors to enhance the uptake and impact of agro-allied services among farmers.

The analysis revealed that there were varying degrees of significance in the relationship between agro-allied services among arable farmers and the type of service provided by agro-allied industry among arable farmers in the study area. This depends on the specific service being examined. A chi-square test indicated a significant relationship between training services and the type of service provided by agro-allied industry among arable farmers ($\chi^2 = 4.404$, df = 1, p = 0.036). This suggests that there is a significant association between the provision of training services and the type of agro-allied service offered to arable farmers. Similarly, a significant relationship was observed ($\chi^2 =$ 6.327, df = 1, p = 0.012), indicating that the type of advice on the choice of chemicals is related to the type of agro-allied service provided. No significant relationship was found ($\chi^2 = 2.667$, df = 1, p = 0.102) between the advice on the side effects of chemicals and the type of agro-allied service offered. In summary, the results suggest that the relationship between agro-allied services among arable farmers and the type of service provided by agro-allied industry varies depending on the specific service being considered. Significant associations were observed for training, advice on seed quality, and advice on the choice of chemicals, while other services did not show significant relationships. The findings of this study highlight the varying degrees of significance in the relationship between agro-allied services and the type of service provided by the agroallied industry among arable farmers. Let's compare and contrast these findings with past studies: The study found a significant relationship between the provision of training services and the type of service provided by the agro-allied industry. This indicates that the type of training offered by the industry to farmers is associated with the specific agro-allied services provided. While the study doesn't elaborate on the nature of this relationship, it suggests that the industry tailors its services based on the training needs of farmers. This finding aligns with previous research that emphasizes the importance of targeted training programs for

farmers (FAO, 2017; Narayanan, 2014). The study also identified a significant relationship between the advice on the choice of chemicals and the type of agro-allied service provided. This finding implies that the specific advice given to farmers regarding chemical selection is influenced by the type of agro-allied service offered. However, the study didn't delve into the nature of this relationship or elaborate on the implications. Previous research on advisory services in agriculture has highlighted the importance of tailored advice to address specific needs and challenges faced by farmers (Gupta et al., 2018; Oraka & Ocholi, 2016). In contrast to the previous finding, the study did not find a significant relationship between the advice on the side effects of chemicals and the type of agro-allied service provided. This suggests that the specific agro-allied service offered to farmers does not influence the advice given regarding the potential side effects of chemicals. However, the study doesn't elaborate on the reasons behind this lack of association. It's worth noting that the provision of such advice is crucial for promoting safe and responsible chemical use in agriculture (FAO, 2017; Santos et al., 2019). Overall, these findings highlight the need for more targeted and tailored agroallied services, particularly in training and advisory aspects. The results demonstrate the potential for the agro-allied industry to customize its services based on the specific needs and challenges faced by arable farmers. This aligns with previous research that emphasizes the importance of personalized support to enhance the effectiveness and impact of agro-allied interventions.

Conclusion

This study shows that the respondents in the study area were predominantly females were Muslim and were married at a young age. It can be derived from the study that different types of services are provided by agro-allied industry. Also, these findings suggest that there is a considerable level of engagement between the agro-allied industry and arable farmers in terms of services provided. This study also highlights the specific impacts and benefits, like production increase that can guide intervention, and advisory services are the specific services provided by the agro-allied to the study area. Although, there were several problems or challenges encountered by the respondents in the study area which might have hindered them from effective and efficient use of agro-allied service as production promoters, constraints like lack of agricultural education, inadequate farmland and others, despite this, the majority of them still believe that the introduction of agro-allied services to farmers is more important and beneficial. Extension agents should educate the farmers on the benefits of agro-allied services in farming and

training and re-training should also be engaged by the agro-allied industries specifically in the study area.

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Variables	Response	Frequency (N)	Percentage (%)
С	Male	30	37.50%
Sex	Female	50	62.50%
	20-30 years	20	25.00%
Age	31-40 years	28	35.00%
	41-50 years	14	17.50%
	Above 50 years	18	22.50%
	Single	18	22.50%
Marital Status	Married	46	57.50%
Warnar Status	Divorced	8	10.00%
	Widow	2	2.50%
	Separated	6	7.50%
	Christianity	28	35.00%
Keligion	Islam	50	62.50%
	Others	2	2.50%
	No Formal Education	8	10.00%
Education Level	Primary Education	4	5.00%
	Secondary Education	12	15.00%
	Tertiary Education	54	67.50%
	<3	10	12.50%
II - 1 110'-	4-6	36	45.00%
Household Size	7-9	22	27.50%
	10-13	12	15.00%
	>13	0	0.00%

Table 1: Socio-Demographic	Characteristics (of Respondents
	Unar actor istics (JI INCSPONACIUS

Field survey, 2023

Table 2 Monthly Incomes (in Naira)

Monthly Income Group	Frequency (N)	Percentage (%)
Less than 10,000	32	40.0%
10,000 - 15,000	20	25.0%
15,000 - 20,000	6	7.5%
More than 20,000	12	15.0%

Field survey, 2023

Table 3 Years of Experience

Years of Experience Group	Frequency (N)	Percentage (%)	
Less than 5 years	38	47.5%	
5 - 10 years	26	32.5%	
10 - 15 years	2	2.5%	
More than 15 years	12	15.0%	

Field survey, 2023

Methods Used	Frequency (N)	Percentage (%)
- Traditional Method	14	17.5%
- Modern Method	64	80.0%
- Others	2	2.5%
Scale of Production		
- Large Scale	26	32.5%
- Medium Scale	22	27.5%
- Small Scale	32	40.0%

Table 4: Methods Used and Scale of Production

Field survey, 2023

Table 5: Types of Services Provided by Agro-Allied Industry to arable farmers in the study area

Services Provided	Yes	No
Training	70	10
Installation of Irrigation System	16	64
Technical Assistance for Horticulture	40	40
Advisory Services		
- Advise on Product Purchase	68	12
- Advise on Seed Quality	70	10
- Advice on Planting Material	68	12
- Advice on Choice of Chemical	72	8
- Advice on Side Effects of Chemicals	68	12
- Advice on Rate of Chemical	74	6
- Advice on Seed Rate	60	20

Field survey, 2023

Table 6 Social Impact of Agro-Allied Industry among Arable Farmers

Social Impact	Yes	No
Good Road	34	46
Market Avenue for Produce	56	24
Reduced Poverty	78	2
Increased Food Storage	64	16
Increase in Production	72	8
Reduced Food Waste	56	24
Produce Value Addition	58	22
Increase Annual Income	30	50

Field survey, 2023

Table 7 Constraints Faced by Arable Farmers

Constraints	Minor (MI)	Major (MA)
Lack of Information	64	16
Lack of Agricultural Education	20	60
Lack of Market	66	14
Storage Facilities	18	62
Inputs Scarcity	56	24
Inadequate Farmland	18	62
Misapplication of Technologies	68	12
Irregular Visit of Agro-Allied Industry	14	66
Lack of Fund	58	22
Inadequate Access to Agro-Allied Services	26	54
Weather Problems	52	28
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Hypothesis 1 (Ho1): There is no significant	difference between some selected	l socio-economic characteristics and
the agro-allied services among arable farmers	in the study area.	

Services Provided	Chi-square	df	P-value	Remark
Gender	10.404ª	1	0.036	Significant
Education	14.327ª	3	0.012	Significant
Age	12.889ª	3	0.046	Significant

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Hypothesis 2 (Ho2): There is no significant relationship between agro-allied services among arable farmers and the type of service provided by agro-allied industry among arable farmers in the study area.

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Services Provided	Chi-square	al	P-value	Remark
Training	4.404 ^a	1	0.036	Significant
Installation of Irrigation System	2.667ª	1	0.102	Not Significant
Technical Assistance for Horticulture	.107ª	1	0.744	Not Significant
Advisory Services				
- Advise on Product Purchase	.296ª	1	0.586	Not Significant
- Advise on Seed Quality	6.327ª	1	0.012	Significant
- Advice on Planting Material	.015ª	1	0.902	Not Significant
- Advice on Choice of Chemical	6.327ª	1	0.012	Significant
- Advice on Side Effects of Chemicals	2.667 ^a	1	0.102	Not Significant
- Advice on Rate of Chemical	.471ª	1	0.493	Not Significant
- Advice on Seed Rate	.889ª	1	0.346	Not Significant
Etald annual 2022				

Field survey, 2023
