# ASSESSMENT OF SMALLHOLDER FARMERS’ PARTICIPATION IN DIGITAL-BASED ADVISORY SERVICE: A CASE STUDY OF MYFARMBASE AFRICA

**A Research Thesis Submitted to the**

**Graduate School in Partial Fulfillment of the Requirements for the Degree**

**MASTER OF SCIENCE**

**BY**

**OLASEHINDE, FAITHFULNESS FEHINTOLUWA**

**(14AB003122)**

**DEPARTMENT OF AGRICULTURAL ECONOMICS AND EXTENSION,**

**COLLEGE OF AGRICULTURAL SCIENCES,**

**LANDMARK UNIVERSITY, OMU-ARAN**

**KWARA STATE.**

**AUGUST 2022**

# DECLARATION

I, Faithfulness Fehintoluwa OLASEHINDE, an M.Sc. student in the Department of Agricultural Economics and Extension, Landmark University, Omu-Aran, hereby declare that this thesis entitled “Assessment of Smallholder Farmers’ Participation in Digital Based Advisory Service: A Case study Of MyFarmbase Africa”, submitted by me is based on my original work. Any material(s) obtained from other sources or work done by any other persons or institutions have been duly acknowledged.

FAITHFULNESS FEHINTOLUWA OLASEHINDE (14AB003122)

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Signature & Date

# CERTIFICATION

This is to certify that this thesis has been read and approved as meeting the requirements of the Department of Agricultural Economics and Extension, Landmark University, Omu-Aran, Nigeria, for the Award of Masters in Agricultural Extension and Rural Development.

**Dr. Kolawole .E. Ayorinde** \_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Supervisor) Date

**Prof. Jones Akangbe** \_\_\_\_\_\_\_\_\_\_\_\_\_\_

(co-supervisor) Date

**Dr. Adekiya .A.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Head of Department) Date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(External Examiner) Date

# ABSTRACT

*The conventional agricultural extension practice due to several factors is not effective in capturing the interest of the younger generation. Given the prevalence of digital and social media platforms among young people, these channels can be used to pique their interest in agriculture. The general objective of the study was to assess smallholder farmers’ participation in a digital-based extension advisory service with a focus on MyFarmbase Africa while the specific objectives include: to describe the socio-economic characteristics of the farmers under MyFarmbase Africa, identify the farmers’ source of information, identify the mode of communication to farmers, determine the farmers’ awareness of MyFarmbase Africa programmes, determine the farmers’ perception towards MyFarmbase Africa, determine the benefits farmers derive, assess the farmers’ participation and determine farmers’ perceived constraints to participation. A total sampling procedure was proposed for the study however, only 121 responded from which data was collected using a questionnaire via Google form survey. Descriptive statistical tools, Chi-square, and Pearson correlation were used to analyze the data.**The majority of the respondents were young, married, had tertiary education, and have been in farming for 5-10 years. The mean for household size was 5 and farm size was 2.7 hectares. The Majority of the respondents were aware of only four programmes. The farmers’ age, household size, and perception had a significant correlation with their participation. Also, Farmers’ awareness of MFB Global Agricultural Development Programme, Master Class, Value chain specialization and Yearly hangout as well as their perception was significant to their participation. Quick access to agricultural information, support from other participants in the group, information about the latest, up-to-date agricultural innovations, great networking opportunities with key stakeholders, and a ready market were the top five benefits enjoyed by the respondents. The major constraints to participation were Epileptic or no power supply which ranked 1st, Poor telecommunication service (Bad network) 2nd, and the cost of data to access online information from MyFarmbase which ranked 3rd. To improve participation, an alternative source of electricity, better network coverage in every part of the country, reduction in the cost of data, and inclusion of physical extension visits is recommended.*

# DEDICATION

I am dedicating this thesis to God for his mercies, faithfulness, favour, grace and help upon my life, to Jesus Christ my lord and saviour and to the Holy Spirit my best friend and helper.

I am also dedicating this thesis to my loving parents Pst. Engr. and Mrs. Benson Olasehinde, Chief and Mrs. G.A Oyinloye. I celebrate you.

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# CHAPTER ONE

## **INTRODUCTION**

## **1.1 BACKGROUND OF THE STUDY**

Agricultural Extension is an informal out of school education provided to farmers to boost their agricultural production. It is tagged Out-of-school education because it is an education provided for farmers outside the four (4) walls of a school. In conventional agricultural extension, extension agents make planned visits to farmers on their farms or in their homes to equip them with up-to-date knowledge, innovations and access to farm inputs (Ahmed & Adisa, 2017).

Agricultural Extension, also referred to as agricultural advisory services, is critical for farmers especially smallholders to obtain information and technology. It helps to progressively bridge the gap between key actors such as organizations, research services, and agribusinesses and farmers (World Bank & OECD, 2013).

Over the years, Nigeria’s extension services were primarily provided by the government as part of its drive to achieve food security through the Agricultural Development Programmes (ADPs) (Naswem & Ejembi, 2017). Although pregnant with prospects, the conventional agricultural advisory service has been faced with challenges over the years. Some of these include, poorly trained personnel, inadequacy and instability of funding, insufficient Extension Agent to Farm Family ratio, poor logistic support and incentives for field staff, ineffective agricultural research and poor youth engraftment into extension programmes (Nwalieji & Nnabueze, 2018; Ogunniyi, Babu, Balana, & Andam, 2020).

In recent times, there have been the emergence of private agricultural extension advisory organizations that have greatly complemented the conventional extension services. They have been able to provide services at better conditions in terms of mode of information dissemination, international partnerships and mentorships, easier funding and ICT usage among others (Barber, Mangnus, & Bitzer, 2018).

Smallholder farmers dominate the agricultural industry in Africa, contributing around 75% of agricultural production and 50% of animal (Nyambo, Luhanga, &Yonah, 2019). Hence, improving smallholder farmers’ participation in sustainable agricultural value chains particularly the young ones who are very agile and innovative represents a significant opportunity that could lead to substantial benefits, such as poverty and unemployment reduction, increase in food production, reduction of crime and a healthier environment.

## **1.2 STATEMENT OF PROBLEM**

Despite agriculture's ability to contribute more significantly to Nigeria's GDP and to radically reduce unemployment, it has not been completely harnessed, hence the country continues to suffer from food insecurity and unemployment (World Bank, 2021). Given its extensive agricultural land, pleasant climate, fertile soils, and youthful population Nigeria has the ability not only to be food secure, but also to be Africa's food basket. However, Nigeria has not been able to achieve this feat due to several factors some of which include the fact that the conventional agricultural extension system in Nigeria with all its challenges has not been able to effectively capture and sustain the interest of the younger energetic generation. Hence, agriculture has been left to the hands of the weak and elderly people in the rural areas while the youths flee to big cities in search of scarce white-collar jobs. For many, taking up agriculture as a profession is not a dream job as it is seen as a dirty profession dominated by old, poor, rural people (Chinsinga & Chasukwa, 2018). This is largely due to the unattractiveness of agriculture to young people. Hence, many of our unemployed youths in frustration lie idle glued to their phones and social media platforms to derive joy. However, with access to right and quick information at one’s fingertips, innovations, mentorship, networking, ready market and credit facilities through the same digital devices that they derive their pleasure from, the younger generation can be motivated into agriculture.

## **1.3 JUSTIFICATION FOR THE STUDY**

In the past conventional agricultural extension contributed substantially to food production in Nigeria. However, with technological changes over the years, their approach has not been producing efficient results (Norton, & Alwang, 2020). This is greatly because the older population presumed to produce the bulk of the food, we consume are aging thereby reducing their efficient contributions. Therefore, it is pertinent to start involving the younger generation who are tech-driven to take over from these tired hands if we must sustain and increase food production.

## **1.4 OBJECTIVES OF THE STUDY**

The general objective of this study was to assess smallholder farmers’ participation in a digital-based extension advisory service with focus on MyFarmbase Africa

The specific objectives were to:

1. describe the socio-economic characteristics of the farmers under MyFarmbase Africa

2. identify the mode of communication used by MyFarmbase Africa

3. determine the farmers’ awareness of MyFarmbase Africa programmes

4. determine the farmers’ perception of MyFarmbase Africa

5. determine the farmers’ benefits from MyFarmbase Africa programmes

6. determine farmers’ perceived constraints to participation in MyFarmbase Africa programmes

## **1.5 RESEARCH QUESTIONS**

1. What are the socio-economic characteristics of the farmers under MyFarmbase Africa?

2. What is the mode of communication?

3. Are the farmers aware of MyFarmbase Africa programmes?

4. What are their perception?

5. What are the benefits farmers derive?

6. What are the farmers perceived constraints to participation?

## **1.6 RESEARCH HYPOTHESES**

H01: There is no significant relationship between socio-economic characteristics of smallholder farmers and their participation in MyFarmbase Africa.

H02: There is no significant relationship between smallholder farmers’ awareness of the programmes and their participation.

H03: There is no significant relationship between smallholder farmers’ perception and their participation.

## **1.7 SCOPE OF THE STUDY**

This research was centered on assessing smallholder farmers’ participation in a digital-based extension advisory service with primary focus on MyFarmbase Africa. This study comprised only farmers currently under MyFarmbase Africa to identify their socio-economic characteristics, determine their awareness of the programmes, perception, benefits and constraints to participation.

## **1.8 SIGNIFICANCE OF THE STUDY**

This study was to assess smallholder farmers’ participation in digital-based extension advisory organizations like MyFarmbase Africa. The outcome of this study revealed if our nation is ripe for digital based extension advisory service delivery and how the government can support to achieve more success rate.

# CHAPTER TWO

## **REVIEW OF RELATED LITERATURE**

## **2.1 CONCEPTUAL ISSUES**

### **2.1.1 SMALLHOLDER FARMERS**

Geographical factors and the level of agricultural system intensification largely influence how smallholder farmers are defined. A smallholder farmer is typically thought of as someone who farms on a tiny parcel of land, planting crops for food and perhaps few varieties of cash crops. (Herrero, et al., 2014; Nyambo, et al., 2019). Many smallholder farmers raise a combination of crops and cattle, keeping a few large ruminants. Because the primary goal of farming is to support the needs of the family, such farms' activities are generally managed by family members and it is discovered that they account for the majority of the world's 570 million farms (Lowder, Skoet & Raney 2016). They control the agricultural industry in Africa, generating around 75% of the continent's agricultural produce and 50% of its animal products. (Nyambo, et al., 2019). Despite the abundance of farmland in Africa, smallholder farmers' ability to own lands has been falling and is anticipated to continue reducing in the long run.

### **2.1.2 DIGITAL-BASED EXTENSION (ADVISORY) SERVICES (ICT, SOCIAL MEDIA)**

Digital extension advisory services entail the exchange of information and the transfer of practical expertise via digital and ICT platforms. (World Bank, 2017). ICT can make it easier to disseminate useful information to a big population at a low cost. These solutions are relevant in today's agricultural and rural transformation processes, particularly for smallholder farmers. While conventional media like television and radio continue to play an important role in extension development and communication, the rise of the internet and mobile technology is seen as a disruptive technology that improves its services (World Bank, 2017).

Smallholder farmers can access a variety of information services from digital extension service providers. Through ICT farmers can be assisted in understanding and implementing agricultural best practices in selecting crops, managing inputs, site/land selection, preparation as well as finance management, packaging, marketing and transportation of agricultural products.

### **2.1.3 MYFARMBASE AFRICA**

MyFarmbase Africa is an extension advisory organization established in 2017 that leverages digital technology to assist farmers and agripreneurs with easy accessibility to agricultural information, technology and skills while also connecting them to markets to sell their products. MyFarmbase Africa offer services such as connection to technical experts, training and consultancy services, research & information sharing, funding opportunities and collaboration. They focus on the following value chains:vegetable, ruminant animals, cashew, soilless farming technology, poultry, maize, cassava, snail, irrigation technology, business development. MyFarmbase Africa currently runs nine (9) programmes. They include: MFB Global Agric Development (2 weeks intensive boot camp training), MFB Value chain Specialization, Backyard Farm Challenge, Climate Smart Agriculture, MFB Master Classes, MFB Youth Annual Conference, MFB Yearly Hangout, MFB market square and MFB Social Media week programmes (MFB, 2020)

### **2.1.4 THEORETICAL FRAMEWORK**

Extension services are hinged on several theories that guide its activities to ensure effective extension delivery. As a result, agricultural extension theories aid in a thorough understanding of the context elements that influence smallholder farmers' adoption and decision-making. This study was based on Diffusion of Innovation (DOI) Theory, which is one of the many theories supporting agricultural extension.

#### **Diffusion of Innovation Theory (DOI)**

E.M. Rogers in 1962, proposed one of the earliest social science concepts well known as The Diffusion of Innovation (DOI) Theory. Although developed in the area of communication to explain how much an innovation spreads (or diffuses) within a population or social system over time it has been over the years adopted in extension.

## **2.2 REVIEW OF METHODOLOGICAL APPROACHES**

Bhattacharjee, & Raj, (2016) in their paper titled “Social media: Shaping the future of agricultural extension and advisory services” created a structured survey where they used google form questionnaire distributed to extension professionals via social media channels such as Facebook, Twitter, emails and internet portals of the Global Forum for Rural Advisory Service, e-Agriculture, and other agriculture communities. The study received 229 responses from 62 nations, with 78.5 percent of respondents coming from developing countries. Their data was analyzed using descriptive statistics in Microsoft Excel.

Khan, et al., 2020 in their paper titled “Farmers’ use of mobile phone-based farm advisory services in Punjab, Pakistan” The study employed a structured questionnaire to identify these FAS, the level to which they are used by farmers, and the factors that influence their adoption. In Pakistan's Punjab province, the district of Faisalabad, 240 farmers were surveyed. SPSS was used to evaluate the data and logistic regressions were used to test the hypothesis.

In the paper "User-centered design of a digital advisory service: Enhancing public agricultural extension for sustainable intensification in Tanzania", Ortiz-Crespo et al. (2020) developed a digital internet service that attends to farmers’ information needs for putting into action long-term intensification. They surveyed 97 Tanzanian farmers and got their reviews using a co-design technique called User-Centered Design to develop a system called “Ushauri”, a new digital information service. The data obtained were analyzed using mean, standard deviation, and t-statistics.

In another paper titled "Analyzing ICT-enabled agricultural advisory services in Pakistan: evidence from a marginalized region of Punjab province. Khan, Gao, Ali, Shahbaz, Khan, & Abid (2020) used a multi-stage random sampling technique to obtain information from smallholder farmers in Pakistan's Muzaffargarh district. Bivariate Probit regression were used to investigate the mobile-based farm advisory services (mFAS) by assessing given material, farmers' use, experiences, and associated characteristics.

Trevor, & Kwenye, (2018) in their work titled “Rural Youth Participation in Agriculture in Zambia”, used primary and secondary data. Questionnaire was used to obtain primary data and it was analyzed using the IBM SPSS Statistics Package (SPSS version 22) and Microsoft Excel. Secondary data sources included peer-reviewed journals, textbooks, conference papers, and intergovernmental organization reports. Due to the lack of a complete sampling frame for the research population, a probability sampling approach could not be employed, hence a convenience sampling method was used instead. In cases where a sampling frame isn't available, this method is applicable. The study had a total of eighty participants.

## **2.3 GAPS IDENTIFIED IN LITERATURE**

|  |  |  |
| --- | --- | --- |
| **AUTHOR(S)** | **PAPER** | **GAPS IDENTIFIED** |
| Klerkx, L. (2021). | Digital and virtual spaces as sites of extension and advisory services research: social media, gaming, and digitally integrated and augmented advice. | 1. More research on the integration of social media into advisory bodies is required.  2. How social media influence quality control and deal with misinformation.  3. More research on how digital extension access and use are disseminated and enabled.  4. How advisory service providers use data to develop value propositions while respecting their clients' data ownership.  5. More attention needs to be paid to how digital services can be integrated with the demands of other food workers, both on and off the farm, as it has become clear that farm employees and, more broadly, workers in the food system, must be taken into account in the digitization process. |
| Ortiz-Crespo, B., Steinke, J., Quirós, C. F., van de Gevel, J., Daudi, H., Gaspar Mgimiloko, M., & van Etten, J. (2020). | User-centered design of a digital advisory service: Enhancing public agricultural extension for sustainable intensification in Tanzania | 1. Additional study into a running service that may be utilized to improve the length, mix of voices, structure, language, and topics of audio messages.  2. Research on the platform's user experiences among farmers and extension agents, as their created device relies on farmers’ capacity and willingness to participate with an online platform.  3. How to improve the device's structure to be more user-friendly and straightforward for farmers and extension agents. |
| Trevor, S., & Kwenye, J. M. (2018). | Rural Youth Participation in Agriculture in Zambia. | 1. Their research focused on rural youth in agriculture. Further research could focus on urban youths in agriculture. |

# CHAPTER THREE

## **METHODOLOGY**

## **3.1 RESEARCH DESIGN**

Survey research design was employed for this research. The research was designed to assess smallholder farmers’ participation in a digital-based extension advisory service with specific focus on MyFarmbase Africa, to describe the socio-economic characteristics of the farmers under MyFarmbase Africa, identify the farmers’ source of information, identify the mode of communication to farmers, determine the farmers’ awareness of MyFarmbase Africa programmes, determine the farmers’ perception towards MyFarmbase Africa, determine the benefits farmers derive, assess the farmers’ participation and determine farmers’ perceived constraints to participation

## **3.2 AREA OF STUDY**

The research was carried out among smallholder farmers under MyFarmbase Africa, Nigeria.

Nigeria is a West African country. It is Africa's most populous country, with a land size of 923,769 square kilometers located at latitudes 9.0820° North and 8.6753° East. Nigeria shares boundary with Niger on the north, Chad and Cameroon on the east and Benin on the west. It is a federal republic comprised of 36 states and the Federal Capital Territory (Abuja), which is home to the nation’s capital (World Population review, 2022). Presently, it has a vast population of over 216,000,000 and as of 2020, Statista recorded that 43.49% of Nigerians were within the age bracket of 0-14 years, 53.77% were within age 15-64 years and 2.74% were 65 years and above (Statista, 2022). With a total agricultural area of 70.8 million hectares, the country is blessed with extensive agricultural farmlands that are fertile for agriculture. The principal crops grown by Nigerian agricultural households are maize, cassava, guinea corn, and yam (FAO, 2022).

## **3.3 SAMPLE AND SAMPLING TECHNIQUES**

A total sampling procedure was proposed for the study to survey farmers under MyFarmbase Africa, hence the link to the google form was sent to all the cohort groups as at the time the research was carried out. However, only 121 respondents responded to the survey.

## **3.4 DATA COLLECTION INSTRUMENT**

Primary data were gathered from the farmers through the use of Google forms to administer the questionnaire. The questionnaire was designed on MS Word for validation and then translated into Google forms for online dissemination. The link to the google form was then sent to the farmers.

## **3.5 OPERATIONALIZATION OF VARIABLES**

Socio-economic characteristics of the respondents were measured and captured using the underlisted:

**Age**: was measured by actual age of the farmers

**Years of schooling**: Primary ( ), Secondary (), Tertiary()

**Marital Status**: Single (), Married (), Divorced (), Widowed ()

**Source of Information**: Family ( ), Friend ( ), Email ( ), Television ( ), ICT/social media()

**Perception of farmers towards MyFarmbase Africa**: Likert-type scale was used to measure using Strongly Agree- SA( ), Agree-A( ), Undecided-U( ), Disagree-D( ), Strongly Disagree-SD()

**Mode of communication to farmers**: Physical contact ( ), WhatsApp ( ), Instagram ( ), Email ( ), Facebook ( ), All of the above ( ), All of the above except physical contact( )

**Farm Enterprise**: Crop Production (), Animal Production ( ), Both ( )

**Farmers Awareness of the programmes of MyFarmbase Africa:** Yes ( ), No( )

**Ownership Pattern** Rent (), Lease( ), Bought ( ), Inherited ( )

**Farm Size:** was measured using actual farm size of the farmers in hectares (ha)

**Benefits farmers derive from MyFarmbase Africa** Likert-type scale was used to measure using Strongly Agree- SA( ), Agree-A( ), Undecided-U( ), Disagree-D( ), Strongly Disagree-SD( )

**Farmers Participation** Always ( ), Sometimes ( ), Never ( )

**Farmers Perceived Constraints to participation**: Major Constraints ( ), Minor Constraints ( ), Not a constraint()

## **3.6 VALIDITY**

Face validity and content validity were used by my supervisor to validate the questionnaire before administering the questionnaire to the respondents.

## **3.7 DATA ANALYTICAL TECHNIQUES**

Objectives 1, 2, 3, 4, 5, and 6 were analyzed using descriptive statistical tools such as frequency tables, percentages, mean, standard deviation, and ranking. While the hypothesis were tested using Chi-square and Pearson correlation.

# CHAPTER FOUR

## **RESULTS AND DISCUSSION OF FINDINGS**

## **4.1 INTRODUCTION**

This chapter includes results of the data analyzed, interpretation and discussions based on the study’s objectives and hypothesis. This will be explained under the following sub-headings:

## **4.2 SOCIO-ECONOMIC CHARACTERISTICS OF THE FARMERS**

### **4.2.1 Age**

#### Table 4.2.1: Respondents' Percentage Distribution by Age

|  |  |  |
| --- | --- | --- |
| Variables | Frequency | Percentage |
| 21-40 | 79 | 65.3 |
| 41-60 | 41 | 33.9 |
| 60 Above | 1 | 0.8 |
| Total | 121 | 100 |

**source: field survey, 2022**

The table above shows that majority 65.3% of the respondents were within the age bracket 21-40. This was followed by age bracket 41-60 with 33.9% while; only 0.8 % of the respondents were above age 60. The mean = 36.9 ± 10.2. This implies that the farmers’ mean age was 36.9 which is approximately 37 years, and the standard deviation is 10.2. This revealed that most of the farmers were young adults within the millennial generation who are Information Technology inclined, hence their access to and usage of digital devices for various purposes. This is corroborated by the findings of Arsalan (2021) that the millennial generation age brackets are tech-savvy and IT-inclined age group. This is also similar to findings from Sennuga et al., 2020, who stated that 59.2 percent of their respondents were of the economic active working age, which increases their productivity and allows them to use ICT devices to get essential agricultural information, hence improving their agricultural production.

### **4.2.2 Sex**

#### Table 4.2.2: Respondents' Percentage Distribution by Sex

|  |  |  |
| --- | --- | --- |
| Variable | Frequency | Percentage |
| Male | 76 | 62.8 |
| Female | 45 | 37.2 |
| Total | 121 | 100 |

**source: field survey, 2022**

According to the table, 62.8 percent of respondents are male, and 37.2 percent are female. This indicates that men made up a greater percentage of the respondents. Shortall, McKee, and Sutherland (2020) suggested that agriculture still exhibits gendered occupational closure, with young women expressing a low propensity to become farmers because of the perception that farming is a male-dominated industry.

### **4.2.3 Marital Status**

#### Table 4.2.3: Respondents' Percentage Distribution by Marital Status

|  |  |  |
| --- | --- | --- |
| Variables | Frequency | Percentage |
| Single | 50 | 42.0 |
| Married | 66 | 55.5 |
| Widowed | 1 | 0.8 |
| Divorced | 2 | 1.7 |
| No response | 2 | 0.0 |
| Total | 121 | 100 |

**source: field survey, 2022**

According to the table above, majority of respondents (55.5%) were married, 42% were single, 1.7% were divorced, and 0.8% were widowed. This reveals that the vast majority of responses were married couples. This is corroborated in Emmanuel & Oba (2019) that married individuals rely heavily on agriculture to make ends meet and feed their children.

### **4.2.4 Years of schooling**

#### Table 4.2.4: Respondents' Percentage Distribution by Years of schooling

|  |  |  |
| --- | --- | --- |
| Variables | Frequency | Percentage |
| Primary | 2 | 1.7 |
| Secondary | 0 | 0.0 |
| Tertiary | 119 | 98.3 |
| Total | 121 | 100 |

**source: field survey, 2022**

The table reveals that majority 98.3% of the farmers had Tertiary education while; only 1.7% stopped at the primary education level. Majority of the respondents are literates and have tertiary education. This could explain why they have good knowledge of the use of digital devices and online resources. This corroborates with findings from Sennuga et al., 2020 who explained that the level of education enhances understanding and usage of ICT devices. They went on to say that having a high degree of literacy improves one's capacity to understand and use agricultural information.

### **4.2.5 Household Size**

#### Table 4.2.5: Respondents' Percentage Distribution by Household Size

|  |  |  |
| --- | --- | --- |
| Variables | Frequency | Percentage |
| <5 | 42 | 38.2 |
| 5-10 | 66 | 60.0 |
| 11-15 | 2 | 1.8 |
| No response | 11 | 0.0 |
| Total | 121 | 100 |

**source: field survey, 2022**

According to the table majority, 60% of the farmers had household sizes within 5-10 while 38.2% had household sizes of less than five (5). The mean = 5.3 ± 2.3. This implies that the mean household size of the farmers was 5 and a standard deviation of 2.3. This value is not far from the findings of the National Bureau of Statistics which through its Nigeria Living Standards Survey 2020 identified the mean household size in Nigeria as 5.06 people per family (NBS, 2020).

### **4.2.6 Income**

#### Table 4.2.6: Percentage distribution of respondents by Annual income (₦million)

|  |  |  |
| --- | --- | --- |
| Variables | Frequency | Percentage |
| <1 | 38 | 44.2 |
| 1-5 | 44 | 51.2 |
| 6-10 | 3 | 3.5 |
| 11-15 | 0 | 0.0 |
| 16-20 | 1 | 1.2 |
| No response | 35 | 0.0 |
| Total | 121 | 100 |

**source: field survey, 2022**

The table reveals that majority (51.2%) of the respondents made an income of 1-5 million naira a year while 44.2% made less than 1 million a year. The mean = 1884223.7 ± 2579613.9. The mean income of the respondents for a year is ₦1,884,224 and a standard deviation of 2579614. Their mean income is high probably because they have higher literacy levels. The more literate farmers are, the more knowledgeable they are to utilize more improved technology to boost agricultural productivity which in turn results in increased income. This supports the findings of Ma, W., Grafton, R. Q., and Renwick, A. (2020), who discovered that using a smartphone significantly boosts farm revenue, off-farm income, and household income. Also, accessibility to credit facilities needed to boost farmers’ productivity, would be easier for literate farmers than non-literate farmers.

### **4.2.7 Source of Information**

#### Table 4.2.7: Respondents' Percentage Distribution by source of information

|  |  |  |
| --- | --- | --- |
| Variables | Frequency | Percentage |
| Family | 7 | 5.8 |
| Friend | 53 | 43.8 |
| Email | 3 | 2.5 |
| Television | 0 | 0 |
| ICT/social media | 58 | 47.9 |
| Total | 121 | 100 |

**source: field survey, 2022**

The table study reveals that a larger percentage (47.9%) of the respondents agreed that they heard about MyFarmbase Africa from ICT/Social Media sources. This could be attributed to the fact that almost every young person has a digital device and belongs to one social network platform or the other. This is supported by statistics from Statista 2022, which show that the number of users on social media in the country has increased over time and is expected to continue to rise.

### **4.2.8 Years of Farming Experience**

#### Table 4.2.8 Respondents' Percentage Distribution by Years of Farming experience

|  |  |  |
| --- | --- | --- |
| Variables | Frequency | Percentage |
| **< 5** | 35 | 31.8 |
| **5-10** | 55 | 50.0 |
| **11-15** | 8 | 7.3 |
| **16-20** | 5 | 4.5 |
| **21-25** | 2 | 1.8 |
| **No response** | 11 | 0.0 |
| **Total** | 121 | 100 |

**source: field Survey, 2022**

According to the table, the majority of respondents (50%) had 5-10 years of farming experience, with 31.8 percent having fewer than 5 years and a mean = 7.9 ± 7.3. This means that the mean years of farming experience was around 8 years, with a standard variation of 7. These findings support those of Key & Lyons (2019), who discovered that the most of smallholder farmers had less than 10 years of farming experience and Emmanuel & Oba (2019), who discovered that the majority of smallholder farmers had less than or equal to 10 years of farming experience.

### **4.2.9 Farm Size**

#### Table 4.2.9 Respondents' Percentage Distribution by Farm Size (in hectares, ha)

|  |  |  |
| --- | --- | --- |
| Variables | Frequency | Percentage |
| <1 | 43 | 54.4 |
| 1-10 | 33 | 41.8 |
| 11-20 | 1 | 1.3 |
| 21-30 | 1 | 1.3 |
| 30 and above | 1 | 1.3 |
| No response | 42 | 0 |
| Total | 121 | 100 |

**source: field survey, 2022**

According to the table majority of farmers (54.4%) had farms of less than 1 hectare, followed by (41.8%) with farms of 1-10 hectares. The mean was 2.7 ± 5.4 which explains that the mean size of the respondents’ farm was 2.7 hectares further confirming the respondents to be truly smallholder farmers. This figure corroborates with Hannah and Max (2021) definition of a smallholder farm which could be classified as a farm less than 1 hectare, 2 hectares or 5 hectares at most.

### **4.2.10 Ownership Pattern**

#### Table 4.2.10: Respondents' Percentage Distribution by ownership pattern

|  |  |  |
| --- | --- | --- |
| Variable | Frequency | Percentage |
| Rent | 32 | 28.6 |
| Lease | 29 | 25.9 |
| Bought | 28 | 25.0 |
| Inherited | 23 | 20.5 |
| No response | 9 | 0.0 |
| Total | 121 | 100 |

**source: field survey, 2022**

The table unveils that 28.6% of the farmers acquired their farmlands through Rent, 25.9% acquired through Lease, 25% Bought and 20.5% inherited their farmlands. This further emphasizes that the farmers are indeed smallholder farmers who do not have enough resources to own their farmlands. This is in agreement with Leslie (2019) that Farmers find it difficult to buy farmland due to other competitive use of land that drives up prices above what farms can afford, particularly for smallholder farmers.

### **4.2.11 Farm Enterprise**

#### Table 4.2.11**:** Respondents' Percentage Distribution by Farm Enterprise

|  |  |  |
| --- | --- | --- |
| Variable | Frequency | Percentage |
| Crop Production | 52 | 43.0 |
| Animal Production | 25 | 20.7 |
| Both | 44 | 36.4 |
| Total | 121 | 100 |

**source: field survey, 2022**

As shown in the table above, most (43.0%) of the farmers are crop farmers, 36.4% are both crop and animal farmers while 20.7% are only animal/livestock farmers. Hence the number of crop farmers among the respondents is higher than animal/livestock farmers. This agrees with NBS PwC Analysis in 2020 further revealed that crop production is the largest segment in our agricultural sector which contributes about 87.6% of the total output of the sector.

### **4.2.12 Mode of communication**

#### Table 4.2.12Respondents' Percentage Distribution based on mode of communication

|  |  |  |
| --- | --- | --- |
| Variable | Frequency | Percentage |
| WhatsApp | 42 | 35.0 |
| Instagram | 1 | 0.8 |
| Facebook | 1 | 0.8 |
| Email | 2 | 1.7 |
| All of the above | 74 | 61.7 |
| No response | 1 | 0.0 |
| Total | 121 | 100 |

**source: field survey, 2022**

According to the table, majority (61.7%) of the farmers stated that MyFarmbase Africa utilizes all the above-mentioned digital platforms for extension teaching. This shows that MyFarmbase Africa is greatly digital in its approach to providing extension services through its’ mode of communication and operations. This supports the findings of Miguel, Benjamin and Mary (2016), who found that privately owned and sponsored extension organizations were more innovative with their extension approaches and they used digital mediums to achieve farmer-buyer and farmer-farmer networking.

### **4.2.13 Most Preferred Mode of communication**

#### Table 4.2.13 Respondents' Percentage Distribution based on most preferred mode of communication

|  |  |  |
| --- | --- | --- |
| Variable | Frequency | Percentage |
| Physical Contact | 25 | 24.8 |
| WhatsApp | 64 | 63.4 |
| Instagram | 1 | 1.0 |
| Facebook | 0 | 0 |
| Email | 4 | 4.0 |
| All of the above | 6 | 5.9 |
| All of the above except physical contact | 1 | 1.0 |
| No response | 20 | 0 |
| Total | 121 | 100 |

**source: field survey, 2022**

The table revealed that majority of the respondents (63.4%) preferred WhatsApp platform a digital medium for receiving Extension information and Advisory service. This is corroborated by findings from Sharma, Dhaliwal, Singh & Bishnoi (2020) where the majority of farmers (70%) chose social media (particularly WhatsApp) as a source of quick, up-to-date agricultural technology and information. Although, a considerably significant 24.8% from the table above indicated that they would prefer if physical contact and one-on-one extension services could be provided too. This further shows that although digital extension services have a wide variety of positive benefits physical one-on-one extension services should not be totally abandoned as the limitations of digital platforms such as poor electricity in the country, poor network coverage, no money to get data, on the spot assessment by extension agents, the sense of belongingness it cast on farmers can be cushioned by the provision of physical extension services hence making the entire extension service delivery more comprehensive.

## **4.3 Famers awareness of MyFarmbase Africa programmes**

#### Table 4.3 Respondents' Percentage Distribution based on Awareness of the various MFB Programmes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Programme** | **Yes** | | **No** | |
| **F** | **%** | **F** | **%** |
| **MFB Global Agricultural Development Programme (2 weeks Intensive online Boot Camp Training)** | 109 | (90.1) | 12 | (9.9) |
| **MFB Value Chain Specialization programme** | 88 | (72.7) | 33 | (27.3) |
| **MFB Backyard farm challenge** | 57 | (47.1) | 63 | (52.1) |
| **MFB Climate Smart Agriculture Programme** | 59 | (48.8) | 61 | (50.4) |
| **MFB Master Class** | 86 | (71.1) | 33 | (27.3) |
| **MFB Youth Annual Conference Programme** | 36 | (29.8) | 83 | (68.6) |
| **MFB Yearly Hangout** | 60 | (49.6) | 61 | (50.4) |
| **MFB Social Media Week Programme** | 37 | (30.6) | 84 | (69.4) |
| **MFB Market Square Programme** | 94 | (77.7) | 27 | (22.3) |

**source field survey, 2022**

As shown in the table, majority of the farmers were aware of MFB Agricultural Development Programme (2 weeks intensive online Boot camp training) (90.1%), MFB Market Square (77.7%), MFB Value chain specialization programme (72.7%) and MFB Master Class (71.1%) while; only 49.6% were aware of MFB Yearly Hangout, 48.8% were aware of MFB Climate change programme, 47.1% were aware of MFB Backyard Farming, 30.6% were aware of MFB Social Media week and finally, only 29.8% were aware of MFB Youth Annual Conference. Hence, more efforts need to be done to increase the farmers’ awareness of these five (5) programmes.

## **4.4 Farmers perception of MyFarmbase Africa digital programmes and services**

The respondents answered a series of perception questions under the 5-point likert scale. The total was calculated for each respondent and the overall mean obtained. Values above the mean were recorded as favourable while; values below the mean were recorded as unfavourable.

#### Table 4.4Respondents' Percentage Distribution by Perception

|  |  |  |
| --- | --- | --- |
| Variable | Frequency | Percentage |
| Unfavourable | 55 | 45.5 |
| Favourable | 66 | 54.5 |
| Total | 121 | 100 |

**source: field survey, 2022**

As unveiled in the table, majority of the farmers (54.5%) had a favourable perception of MyFarmbase Africa and its programmes. However, a considerable percentage (45.5%) still had an unfavourable perception towards it.

## **4.5 Farmers Participation in MyFarmbase Africa programmes**

The respondents indicated how often they participated in each of the 9 programmes on a 3-point likert scale. The total for each respondent was calculated and the overall mean obtained. Values above the mean were recorded as high participation while; values below the mean was recorded as low participation.

#### Table 4.5Percentage distribution of respondents’ Participation in MyFarmbase Africa programmes

|  |  |  |
| --- | --- | --- |
| Variable | Frequency | Percentage |
| Low | 71 | 58.7 |
| High | 50 | 41.3 |
| Total | 121 | 100 |

**source: field survey, 2022**

As revealed in the table above, majority (58.7%) of the smallholder farmers in MyFarmbase Africa had low participation in the programmes of MyFarmbase Africa. However, it is worthy of note that a considerable percentage (41.3%) had high participation. This could be explained by the fact although they had high positive perception about the organization, its services and its programmes, the constraints they face prevent them from fully participating in the programmes hence their low participation.

## **4.6 BENEFITS FARMERS DERIVE FROM MYFARMBASE AFRICA**

#### Table 4.6: Percentage distribution of Smallholder farmers’ benefits

|  |  |  |  |
| --- | --- | --- | --- |
| Benefits | S.D | Mean | Rank |
| I get easy access to funding opportunities | 1.12301 | 2.5868 | 6th |
| I get quick access to agricultural information | 0.79148 | 3.9174 | 1st |
| Great networking opportunities with key stakeholders to move my business forward | 0.87599 | 3.5372 | 4th |
| Ready market by selling my produce on the cohort group | 0.94585 | 3.1736 | 5th |
| I share and get support from other participants | 0.78071 | 3.8760 | 2nd |
| I get information about latest, up-to-date agricultural innovations | 0.86372 | 3.7686 | 3rd |
| MyFarmbase Africa has provided me with partnerships both locally and internationally to move my business forward | ---- | ---- | ----- |
| MyFarmbase Africa has connected me to other farmers across the nation | ---- | ----- | ----- |
| MyFarmbase Africa has equipped me with resources to start my own farm | ---- | ----- | ---- |

**source: field survey, 2022**

The result from table revealed that among others, there were five major benefits enjoyed by smallholder farmers’ in MyFarmbase Africa. Quick access to agricultural information, support from other participants on the group, information about the latest, up-to-date agricultural innovations from MyFarmbase Africa, great networking opportunities with key stakeholders necessary to move my business forward and finally they enjoy ready market by selling produce on the cohort group platforms.

## **4.7 SMALLHOLDER FARMERS CONSTRAINTS TO PARTICIPATION IN MYFARMBASE AFRICA PROGRAMMES**

#### Table 4.7:Smallholder farmers’ constraints on participation

|  |  |  |  |
| --- | --- | --- | --- |
| Constraints | S.D | Mean | Rank |
| Epileptic or no power supply to power my gadgets | 0.81267 | 2.0583 | 1st |
| Cost of data to access online information from MyFarmbase Africa is expensive | 0.71707 | 1.9504 | 3rd |
| Poor telecommunication service (Bad network) in my area | 0.73593 | 1.9917 | 2nd |
| I don’t know how to use online platforms very well | 0.36946 | 1.1157 | 5th |
| Extension services and Information given at MyFarmbase Africa do not meet my needs | 0.55608 | 1.3388 | 4th |

**source: field survey, 2022**

As seen in the table above, there are three main constraints faced by farmers under MyFarmbase Africa which affect their participation. The three main constraints highlighted include Epileptic or no power supply in my area to power my gadgets, followed by Poor telecommunication service (Bad network) in my area and then the cost of data to access online information from MyFarmbase Africa is expensive.

## **4.8. TEST OF HYPOTHESIS**

This section entails testing the hypothesis used in this research work as stated in chapter one to determine if there is any relationship between the variables.

#### Table 4.8.1**:** Chi-square analysis indicating the relationship that exists between Participation and selected socio-economic characteristics at 0.1 level of significance

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Independent Variable | Chi-square () | DF | P | Decision |
| **Age** | 1.5731 | 2 | 0.666 | NS |
| **Sex** | 0.7223 | 1 | 0.697 | NS |
| **Marital Status** | 2.4831 | 3 | 0.478 | NS |
| **Years of Schooling** | 1.5208 | 3 | 0.467 | NS |
| **Income** | 53.3569 | 4 | 0.613 | NS |
| **Years of Farming Experience** | 15.3076 | 4 | 0.703 | NS |
| **Farm Size** | 28.6307 | 4 | 0.588 | NS |
| **Source of Information** | 0.3729 | 4 | 0.946 | NS |
| **Ownership Pattern** | 5.8832 | 3 | 0.208 | NS |
| **Farm Enterprise** | 1.7715 | 2 | 0.412 | NS |
| **Mode of communication** | 4.4412 | 6 | 0.617 | NS |

**source: field survey, 2022**

**Testing the hypothesis of smallholder farmers’ socio-economic characteristics:** The resultshows that there was no significant relationship at the 0.1 level of significance,hence we will accept the null hypothesis I.

#### Table 4.8.2**:** Chi-square analysis indicating the relationship that exists between Participation, Awareness and Perception of the farmers at 0.1 level of significance.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Independent Variable | Chi-square () | DF | P | Decision |
| **Awareness of MFB Global Ag. Dev Programme** | 6.1345 | 1 | 0.013 | S |
| **Awareness of MFB Value chain Specialization Class** | 3.6236 | 1 | 0.057 | S |
| **Awareness of MFB Backyard Farm Challenge** | 3.7935 | 1 | 0.150 | NS |
| **Awareness of MFB Climate smart Agriculture** | 2.5705 | 1 | 0.277 | NS |
| **Awareness of MFB Master Class** | 5.4598 | 1 | 0.065 | S |
| **Awareness of MFB Youth Annual Conference** | 4.4568 | 1 | 0.108 | NS |
| **Awareness of MFB Yearly Hangout** | 8.9449 | 1 | 0.003 | S |
| **Perception** | 9.0851 | 1 | 0.003 | S |

**Source: field survey 2022**

**Testing the hypothesis of Smallholders farmers’ Awareness of MFB Global Agricultural Development Programme with a Chi-square value of 6.1345 and P-value of 0.013:** The resultshows that there was a significant relationship at 0.013 which is less than 0.1 level of significance,hence we will reject the null hypothesis. This implies that there exists a significant relationship between the Smallholder farmer’s awareness of MFB Global Agricultural Development Programme and their participation.

**Testing the hypothesis of Smallholders farmers’ Awareness of MFB Value Chain specialization programme with a Chi-square value of 3.6236 and P-value of 0.057:** The resultshows that there was a significant relationship at 0.057 which is less than 0.1 level of significance,hence we will reject the null hypothesis. This implies that there exists a significant relationship between the Smallholder farmer’s awareness of MFB Value Chain Specialization Class and their participation.

**Testing the Smallholders farmers’ awareness of MFB Master Class with a Chi-square value of 5.4598 and P-value of 0.065**: The result shows that there was a significant relationship at 0.065 which is less than 0.1 level of significance, hence we will reject the null hypothesis. This implies that there exists a significant relationship between smallholder farmers’ awareness of MFB Master Class and their participation.

**Testing the hypothesis for awareness of MFB yearly hangout with a Chi-square value of 8.9449 and P-value of 0.003**: The result shows that there exists a significant relationship at 0.003 which is less than 0.1 level of significance, hence we will reject the null hypothesis. This indicates that a significant relationship exists between Smallholder farmers’ awareness of MFB Master Class and their participation.

**Testing the hypothesis for Perception the result obtained using Chi-square analysis is explained below:** The result obtained showed that there is a 0.003 significant relationship which is less than 0.1 level of significance, hence we will reject the null hypothesis. This explains that a significant relationship exists between Smallholder farmers’ Perception of MyFarmbase Africa and their participation.

Table 4.8.3**:** Table showing Pearson Correlation between selected socio-economic characteristics, perception and the dependent variable Participation using 0.05 level of significance

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | **perception** | **participation** | **age** | **number of children** | **Correlation** |
| **Perception** | Pearson Correlation | 1 | .213\* | -.003 | .066 | **Weak Positive Correlation** |
| Sig. (2-tailed) |  | .019 | .975 | .491 | **S** |
| N | 121 | 121 | 121 | 110 |  |
| **Participation** | Pearson Correlation | .213\* | 1 | -.219\* | .243\* | **Perfect positive Liner correlation** |
| Sig. (2-tailed) | .019 |  | .016 | .010 |  |
| N | 121 | 121 | 121 | 110 |  |
| **Age** | Pearson Correlation | -.003 | -.219\* | 1 | -.042 | **Weak Negative Correlation** |
| Sig. (2-tailed) | .975 | .016 |  | .665 | **S** |
| N | 121 | 121 | 121 | 110 |  |
| **Household Size** | Pearson Correlation | .066 | .243\* | -.042 | 1 | **Weak Positive Correlation** |
| Sig. (2-tailed) | .491 | .010 | .665 |  | **S** |
| N | 110 | 110 | 110 | 110 |  |
| **Income** | Pearson Correlation | -.056 | -.047 | .351\*\* | -.084 | **No Linear correlation** |
| Sig. (2-tailed) | .601 | .661 | .001 | .439 | **NS** |
| N | 89 | 89 | 89 | 87 |  |
| **Years of farming experience** | Pearson Correlation | .054 | -.003 | .417\*\* | .143 | **No Linear correlation** |
| Sig. (2-tailed) | .577 | .972 | .000 | .151 | **NS** |
| N | 110 | 110 | 110 | 102 |  |
| **Farm size** | Pearson Correlation | -.053 | -.073 | .063 | -.054 | **No Linear correlation** |
| Sig. (2-tailed) | .641 | .525 | .579 | .641 | **NS** |
| N | 79 | 79 | 79 | 76 |  |

**Source: Field Survey, 2022**

**Testing the hypothesis for Perception the result obtained using Pearson Correlation Coefficient analysis is explained below:**

The result from the study shows that the correlation between farmers’ participation and perception is 0.213 at 0.019 significance which is less than 0.05 level of significance. This signifies that there is a significant weak positive correlation between them. Hence, the higher the farmers’ perception of MyFarmbase Africa, the higher their participation in the programmes.

**Testing the hypothesis for Age the result obtained using Pearson Correlation Coefficient analysis is explained below:**

The result from the study shows that the correlation between farmers’ participation and age is -0.219 at 0.016 significance which is less than the 0.05 level of significance. This explains that there is a significant weak negative correlation between them. Hence the younger the age of the farmers, the higher their participation in the programmes. This is made possible reason that younger people are more internet and digital savvy than older adults.

**Testing the hypothesis for Household size the result obtained using Pearson Correlation Coefficient analysis is explained below:**

The result from the study shows that the correlation between farmers’ participation and Household Size is 0.243 at 0.010 significance which is less than 0.05 level of significance. This indicates a significant weak positive correlation between them. Hence, the higher the household size, the higher their participation. This could be because households with larger sizes would have more adolescent children who are internet savvy and thus could influence their parents to adopt digital devices connected to the internet.

# CHAPTER FIVE

## **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

## **5.1 SUMMARY**

The general objective of this study was toassess smallholder farmers’ participation in a digital-based extension advisory service with focus on MyFarmbase Africa.

Specifically, the objectives were to: describe the socio-economic characteristics of the farmers respondents, identify their source of information about MyFarmbase Africa, identify the mode of communication to farmers at MyFarmbase Africa, determine the farmers’ awareness of MyFarmbase Africa programmes, determine the farmers’ perception to MyFarmbase Africa, determine the farmers’ benefits from MyFarmbase Africa programmes, assess the farmers’ participation in MyFarmbase Africa programmes and determine farmers’ perceived constraints to participation in MyFarmbase Africa programmes.

A well-structured questionnaire was prepared and disseminated using Google forms to obtain relevant information. Only 121 farmers responded to the survey. Descriptive statistical tools such as frequency tables, percentages were used to achieve objectives 1, 2, 3, 4, 5 and 6. Chi-square and correlation were used to test the hypotheses I, II and III.

## **5.2 CONCLUSION**

The outcome of this study explained that majority of the respondents (65.3%) were young farmers between the ages of 21-40 and the mean age = 36.9 ± 10.2. Majority of the farmers (62.8%) were male and were about twice the number of the female farmers. Majority of the farmers (55.5%) were married and almost all (98.3%) of the farmers had gotten tertiary education. The mean household size for the respondents was 5.3 ± 2.3, the mean income of the farmers was 1884223.7 ± 2579613.9 and 47.9% of the farmers got to know about MyFarmbase Africa through ICT/social media means. The study further revealed that 50% of the farmers had 5-10 years farming experience and the farmers had a mean farm size of 2.7 ± 5.4 hectares which buttresses that they were smallholder farmers. Majority (43%) of the farmers were purely crop farmers. Whereas 28.6% of the farmers rented and 25.9% leased their farmlands, 25% bought and 20.5% inherited their farmlands making them owners of their farmlands. Furthermore, the study revealed that 63.4% of the farmers preferred WhatsApp, which is a digital mode of communication. However, a significant (25%) which is one-fourth of the respondents indicated that physical contact should be included too. Majority of the farmers were aware of only four programmes out of the nine programmes of MyFarmbase Africa. Majority (54.5%) of the farmers had a favourable perception of MyFarmbase Africa and its programmes however, 58.7% of the farmers had a low Participation in MyFarmbase Africa programmes. The study also revealed that smallholder farmers under MyFarmbase Africa enjoyed 5 major benefits: Quick access to agricultural information, support from other participants in the group, information about latest, up-to-date agricultural innovations from MyFarmbase Africa, great networking opportunities with key stakeholders necessary to move business forward with a and finally I enjoy ready market by selling produce on the cohort group platforms. Also, there were top three constraints the farmers identified that affected their participation. These include Epileptic or no power supply to power my gadgets which ranked 1st, followed by Poor telecommunication service (poor network) which ranked 2nd and then the high cost of data to access online information from MyFarmbase Africa which ranked 3rd.

In conclusion, the study revealed that the farmers’ awareness of MFB Global Agricultural Development Programme, Master Class, Value chain specialization and Yearly hangout as well as their Perception was significant to their participation in the various programmes. Finally, the study revealed that the farmers’ perception and household size both had a weak but positive correlation with their participation. However, the farmers’ age had a weak but negative correlation with their Participation.

## **5.3 RECOMMENDATIONS**

1. The farmers should look into alternative sources of power generation such as solar power to complement the current means of generating electricity to power their digital devices/gadgets.
2. Also, government and local community leaders should make demands on private telecommunications companies to improve their network coverage and network services to ensure fast and easy access to network.
3. Furthermore, MyFarmbase Africa should organize their farmers into groups to take advantage of bulk data purchase to reduce the cost of data and give more internet access to their farmers
4. Private Agricultural extension advisory organizations should increase the awareness of their new and existing programmes among farmers so they can be fully aware to enable them to participate effectively in programmes that can improve their agricultural productivity. This can be achieved via jingles on WhatsApp, radio, adverts on television and posters on bill bards.
5. Finally, Private agricultural extension advisory organizations should include physical meetings and one-on-one contact with the digital extension services they provide to make the service more robust and effective.

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## APPENDIX I

**DEPARTMENT OF AGRICULTURE**

**AGRICULTURAL EXTENSION AND RURAL DEVELOPMENT PROGRAMME**

**LANDMARK UNIVERSITY, OMU-ARAN, KWARA STATE**

**NIGERIA.**

Questionnaire/interview schedule for data collection on **“ASSESSMENT OF SMALLHOLDER FARMERS’ PARTICIPATION IN DIGITAL-BASED ADVISORY SERVICES: A CASESTUDY OF MYFARMBASE AFRICA”.**

I am a Masters’ student of the above-named Institution currently working on my research dissertation titled: ASSESSMENT OF SMALLHOLDER FARMERS’ PARTICIPATION IN DIGITAL-BASED ADVISORY SERVICES: A CASESTUDY OF MYFARMBASE AFRICA.

I am a fellow of MyFarmbase Africa (Cohort 8) and I humbly solicit your cooperation in supplying answers to questions asked in this questionnaire. Please note, this questionnaire is to be filled by both Crop and Animal farmers. Your responses will be treated with utmost confidentiality and used for research purpose only. Thank you for your anticipated cooperation.

Yours faithfully,

Olasehinde Faithfulness.

**SECTION A**

Socioeconomic Characteristics

1. Age: \_\_\_\_\_\_\_\_\_\_\_\_years
2. Sex: Male ( ), Female ( ).
3. Marital status: Single ( ), Married ( ), Widowed ( ), Divorced ( )
4. Years of Schooling: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Primary school (1-6 years), Secondary school (7-12 years), Tertiary institution (13-20 years)
5. Household size: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Annual Income\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Religion: Christianity ( ) Islam ( ) Traditionalist ( ) free thinker ( )
8. How did you hear about MyFarmbase Africa (source of information): Family ( ), Friend ( ), Email ( ), Television ( ), ICT/social media ( )

9. Which Cohort group do you belong to\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SECTION B**

10. Are you aware of the following programmes organized by MyFarmbase Africa

|  |  |  |
| --- | --- | --- |
| **PROGRAMMES** | **YES** | **NO** |
| MFB Global Ag.Dev Programme (2 weeks intensive boot camp training) |  |  |
| MFB Value chain Specialization programme |  |  |
| Backyard Farm Challenge |  |  |
| Climate Smart Agriculture Programme |  |  |
| MFB Master Classes |  |  |
| MFB Youth Annual Conference |  |  |
| MFB Yearly Hangout |  |  |
| Social Media week 2020 |  |  |
| MFB Market Square |  |  |

11. What is the extension teaching method at MyFarmbase Africa (i.e how do you get information regularly from MyFarmbase Africa)? A. Physical contact ( ), B. WhatsApp ( ), C. Instagram ( ), D. Facebook ( ) E. Email( ) F. B,C,D and E only ( ), G. All the above(

12. Which of the methods above do you prefer most\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. FARMER’S PERCEPTION OF MYFARMBASE AFRICA (MFB)

Tick only one box in each number as appropriate to you under the following

(SA) STRONGLY AGREE (A) AGREE (U)UNDECIDED (D)DISAGREE (SD)STRONGLY DISAGREE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S/N | Statement | SA | A | U | D | SD |
| 1. | MyFarmbase Africa favours the elite |  |  |  |  |  |
| 2 | MyFarmbase Africa is only easily accessible by ICT inclined farmers |  |  |  |  |  |
| 3 | The use of ICT and other digital-based gadgets at MyFarmbase Africa makes learning about Agriculture fun and interactive |  |  |  |  |  |
| 4 | Personalized expert advisory services are provided by MyFarmbase Africa |  |  |  |  |  |
| 5 | The process of enlisting as a participant of MyFarmbase Africa is expensive |  |  |  |  |  |
| 6 | There is poor information flow about the organization’s programmes to its participants |  |  |  |  |  |
| 7 | MyFarmbase Africa staff are very friendly |  |  |  |  |  |
| 8. | MyFarmbase Africa staff treats participants with respect and dignity |  |  |  |  |  |
| 9. | MyFarmbase Africa delivers quality extension services to farmers and agripreneurs |  |  |  |  |  |
| 10. | MyFarmbase Africa makes agriculture appealing to young people. |  |  |  |  |  |
| 11. | MyFarmbase Africa is only interested in making money from participants |  |  |  |  |  |
| 12. | MyFarmbase Africa is highly interested in the progress and increased agricultural production of its members and Africa at large. |  |  |  |  |  |
| 13. | MyFarmbase Africa has highly seasoned professionals and Subject-matter-specialists |  |  |  |  |  |

14. FARMERS’ PARTICIPATION IN MYFARMBASE AFRICA PROGRAMMES

How often do you participate in the following MFB programmes?

|  |  |  |  |
| --- | --- | --- | --- |
| **PROGRAMMES** | **ALWAYS** | **SOMETIMES** | **NEVER** |
| MFB Global Ag.Dev Programme (2 weeks intensive boot camp training) |  |  |  |
| MFB Value chain Specialization programme |  |  |  |
| Backyard Farm Challenge |  |  |  |
| Climate Smart Agriculture Programme |  |  |  |
| MFB Master Classes |  |  |  |
| MFB Youth Annual Conference |  |  |  |
| MFB Yearly Hangout |  |  |  |
| Social Media week 2020 |  |  |  |
| MFB Market Square |  |  |  |

15. BENEFITS OF PARTICIPATING IN MYFARMBASE AFRICA

Tick only one box in each number as appropriate to you under the following: (SA) STRONGLY AGREE (A) AGREE (U)UNDECIDED (D)DISAGREE (SD)STRONGLY DISAGREE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S/N | Statement | SA | A | U | D | SD |
| 1. | I get easy access to funds and funding opportunities |  |  |  |  |  |
| 2 | I get quick access to agricultural information |  |  |  |  |  |
| 3 | I get great networking opportunities with key stakeholders necessary to move my business forward |  |  |  |  |  |
| 4 | I get ready market by selling my produce on the cohort group platforms |  |  |  |  |  |
| 5 | I share and get support from other participants on the group |  |  |  |  |  |
| 6 | I get information about latest, up-to-date agricultural innovations from MyFarmbase Africa. |  |  |  |  |  |
| 7 | MyFarmbase Africa has provided me with partnerships both locally and internationally to move my business forward |  |  |  |  |  |
| 8. | MyFarmbase Africa has connected me to other farmers across the nation |  |  |  |  |  |
| 9. | MyFarmbase Africa has equipped me with resources to start my own farm |  |  |  |  |  |

16. CONSTRAINTS TO FARMER’S PARTICIPATION IN MYFARMBASE AFRICA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **Constraints** | **Major constraint** | **Minor constraint** | **Not a constraint** |
| 1 | Epileptic or no power supply in my area to power my gadgets |  |  |  |
| 2 | Cost of data to access online information from MyFarmbase Africa is expensive. |  |  |  |
| 3. | Poor telecommunication service (Bad network) in my area |  |  |  |
| 4. | I don’t know how to use online platforms very well (Illiteracy) |  |  |  |
| 5. | Extension services and Information given at MyFarmbase Africa do not meet my need |  |  |  |

## START TO FINISH TIMELINE CHART OF THE RESEARCH

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ACTIVITY** | **AUG**  **2021** | **OCT** | **NOV** | **DEC** | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN**  **2022** |
| Gathering of information and Proposal presentation | **---** |  |  |  |  |  |  |  |  |  |
| Questionnaire Design |  | ----- | ----- | ------ |  |  |  |  |  |  |
| Administration of Questionnaire |  |  |  |  | ---- | ---- |  |  |  |  |
| Coding of questionnaire |  |  |  |  |  | ---- |  |  |  |  |
| Analysis |  |  |  |  |  |  | ---- |  |  |  |
| Report writing |  |  |  |  |  |  |  | ---- | ----- |  |
| Post-field Presentation |  |  |  |  |  |  |  |  |  | ---- |
| Wrapping up of research work |  |  |  |  |  |  |  |  |  | ---- |