

Performance of Farmers using Social Network in Advancing Agribusiness in Anambra State, Nigeria

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Abstract: *The study examined the performance of farmers' using social network in advancing agribusiness in Anambra State, Nigeria. Specifically, it described the socio - economic characteristics of the respondents, determined the profitability of respondents using social network, market structure of the respondents and identified the challenges of respondents using social network in advancing agribusiness by the respondents. Multi - stage, purposive and simple random methods were used to select one hundred and sixty respondents for the study. Data were collected from primary source. Primary data were collected using structured questionnaire. Collected data were analyzed by means of descriptive statistics, enterprise budgeting and gini coefficient. From the result, findings on the socioeconomic characteristics showed that farmers are relatively young, energetic, are in computer age and able to use phone and other devices to advance agribusiness in their area and beyond for optimum profit. Farmers were educated, married and there is male dominance in the use of social network in advancing agribusiness in the study area. The profitability indicators such as gross margin, net marketing income, and net return on investment values of ₦ 91.046073.00, ₦90, 337, 617.50 and 1.2 respectively showed that the use of social network in advancing agribusiness is a profitable venture. Gini - coefficient revealed a high level of income inequalities among the farmers. Lack of awareness, poor assessment of social network and costly charge of data when accessing the social network were perceived as the main constraints affecting agribusiness. Measures will be taken by appropriate authorities to reduce the tariff of data in accessing social network and service providers should of necessity improve their services to enable social network users to be effective.*

1. Introduction

Social network has become a powerful tool that connects millions of people globally from the comfort of our homes; social network is revolutionizing the way business is carried out, bringing new ways of communication and exchange of information across the globe. Social network is now a mainstream form of communication around the world, and continues to grow in popularity with the increase in the number of smart phones, and the ease of use (Kipkurgat, Onyiego and Chemwaina, 2016). Social network is different from social media. Social network is a platform for communicating with one another. The communication has a two - way nature; whereas social media is a platform for broadcasting and it is a communication channels (Millan, 2011). According to (Amade, 2017), social network is a major external platform consisting of such tools as Facebook, Twitter, LinkedIn, YouTube, Messenger, Wichteh, Google Plus, Whatsapp, However, a handful of internal social platforms exist within organizations which are specifically tailored to suit some projects.

Social network allow users to communicate directly with the customers and service providers. Farmers are using social network to increase their produce at each stage. Social network helps in sharing information, creating awareness and increase the use of mobile phones in rural areas through internet communication Technology (ICT) which provides solutions to the agricultural marketing problems (Cline, 2011). Also, social network in agricultural business helps to provide solutions to agricultural development (Charleston and Orwig, 2009). The users of social network are creating their own groups, pages, community, and blogs to share information. The tools of social network allow the consumers to be attracted to different agricultural organizations and give agricultural business new ways to engage with their customers. This new opportunity also

allow agribusiness to create stronger brands and ultimately build a better business because brands help create a relationship between businesses and its audiences (Karkkainen, Jussila, Vaisan, 2010). The relationships that agriculturalists are making with the consumer through social network have encouraged a specialized branch of agribusiness. Social network is a marketing tool available to all businesses and caters to all budgets and time commitments. (Oxbr, 2012). Since small businesses are often limited by these factors, social network can be used to develop a relationship with their customers (White, 2013).

Agricultural business includes all the activities within the agricultural food and natural resource industries that are involve in the production of food and fiber. Individual agribusiness may sell items to farmers for production, provide service to other agricultural business or be engaged in the marketing, transporting, processing and distribution of agricultural products (Saunders, 2012). In Nigeria, agribusiness provides people with food, clothing and shelter. It helps in Nigeria economy by providing jobs for millions of people in science, research, engineering, education, advertisement, government agencies, trade organizations and commodity. In Agricultural business activities, social network cannot be left behind to achieve agricultural development. The use of social network in agricultural business is increasing rapidly nowadays. Many service provider companies are giving better facilities to the farmers (Mburu, 2013).

2. Material and Methods

The study was carried out in Anambra State. Anambra is a State in southeastern Nigeria. The Sate is known for production and marketing of several raw materials and agro products in different parts of the state. Some of the crops produce and marketed in the state include oil palm, maize,

rice, yam, groundnut, cassava, garri, cucumber, watermelon, melon, potato, greenbeans (akidi), pigeon pea, soyabean and livestock such as fish, goat, sheep, poultry and cattle are also raised. It is an agrarian state with high crop production and marketing activities. It is situated on a generally low elevation on the eastern side of the river Niger, sharing boundaries with Delta State to the west Imo, Abia and Rivers States to the south, Enugu state to the East and Kogi State to the North. The state occupies an area of about 4, 844km². Geographically, the state lies within longitude 5^o55¹ and 6^o42¹N.

The population of the state is 4, 182, 232 with 863 sqkm density (NPC, 2006). The state has several daily markets both in the rural and urban areas where agricultural products are sold. It consists of twenty - one (21) Local government areas (LGAs) and four agricultural zones namely Awka (Awka North, Awka South, Dunukofia, Njikoka, Aniocha), Aguata (Orumba south, Orumba North, Aguata, Nnewi North, Nnewi South), Onitsha (Onitsha North, Onitsha South, Ihiala, Ekwusigo, Idemili North, Idemili South, Ogbaru) and Anambra (Anambra North, Anambra west, Oyi, Ayamelum) zones. The state is embedded by five major rivers and their tributaries. These are River Niger, Anambra River, Ezu River, Idemili River and Ulasi River. However, there are smaller streams like Oji, Nkisi and Obizi. In - land valley, ponds and lakes occur with the Agulu Lake draining a collection of towns in the State (Nkamigbo and Isibor, 2019). The rainy season occurs from the month of November to February. The annual rainfall ranges from 1400 mm in the North to 2500 mm in the South with temperature of 25°C – 35°C.

3. Model Specification

The budgetary technique was used to determine the profitability of farmers using social network to advance agribusiness.

$$NER = \sum P_{vi} Y_i - (\sum P_{xij} X_{ij} + \sum F_{ij})$$

Where \sum = sum

$P_{vi} Y_i$ = unit price \times quantity of i^{th} respondents sales = Total revenue (TR) for i^{th} respondent.

$P_{xij} X_{ij}$ = Prices \times quantities of i^{th} respondents variable inputs = total variable cost (TVC) for j^{th} respondent.

F_{ij} = Depreciation values of equipment, annual rent for store, interest on loan, for j^{th} respondents = Total fixed cost (TFC) for j^{th} respondent.

TC = Total cost (TVC + TFC).

The marketing efficiency of farmers' using social network to advance agribusiness was determined using Shepherd - Futrell technique.

The marketing efficiency

$$ME = \frac{TC}{TR} \times 100$$

where:

ME= Coefficient of marketing efficiency,

TC= Total marketing cost incurred

TR= Total value of product sold

Gini - coefficient = $1 - \sum XY$

where:

X= the ratio of percentage of respondents

Y= the ratio of cumulative percentage

\sum = summation

Socioeconomic characteristics of the respondents

Socioeconomic characteristics of the respondents in Table 1 indicates that majority of the farmers are within 30 - 39 years (50%) with the mean age of 38.4. This implies that the farmers were relatively young, energetic, are in computer age and able to use phone and other devices to advance agribusiness in their area and beyond for optimum profit. This agrees with (Idu, Ajah, Alabi and Nnaji, 2021) who reported that age had a positive relationship with ability to use ICT utilization and social network in their area. This is at variance with (Khan, Rahman, and Oazi, 2016 and Inegbedion *et al*, 2020) who stated that there is no significance influence of age in the usage of social network in enhancing the turnover of agricultural products. The results showed that majority of the respondents were married 60%. This implies that the respondents will engage the services of the family members in advancing agribusiness in the study area as most children are in tune with the use of android phone. It could be seen from the table that majority of the respondents had higher school certificates. This implies that they can easily access network to advance their businesses with social network and make profit. This agrees with (Kipkurgat *et al*, 2016) who stated that farmers are knowledgeable enough to understand and access information. This is at variance with (Wangu, 2014) who stated that majority were of middle education levels. It could be seen from the table that the respondents have a household size of 1 - 3 members 61%. The source of fund of the respondents reveals that personal savings was 34.4%, Friends and relative was 43%, Isusu was 18.6% and microfinance was 3.75%. This implies that in the study area people borrow less to sponsor their business. The study reveals slight male dominance 56.25% in the use of social network in advancing agribusiness than female 43.12% in the study area. This is in agreement with (Balkrishna and Deshmukh, 2017) who reported a male dominance than female in social media usage. Also the study reveals that 93.75% of the members are not member of trade union in the study area. Also the study reveals that 36.25% of the respondents have 1 - 4 years of business experience in the use of social network in advancing agribusiness, 5 - 8 years 55% while 9 - 12 years of experience is 6.23%. This is an indication that the use of social network in advancing agribusiness is gradually gaining ground in the study area. The study revealed the use of commercial vehicle (55.65%) in delivery. This implies that majority of the respondents patronize commercial means of delivery. Also, from the study 65% brand their products while 35% do not brand their products. This is in agreement with (Balkrishna and Deshmukh, 2017) who noted high rate of branding of products by the farmers.

Table 1: Socioeconomic characteristics of the respondents

Variables	Frequency (n=160)	Percentage (%)	Mean
Age			
20 - 29	21	13.13	38.4
30 - 39	80	50	
40 - 49	42	26.25	
50 - 59	10	6.25	

60 and above	7	4.38	
Total	160	100	
Marital Status			
Single	40	25.00	
Married	96	60.00	
Divorced	24	15.00	
Total	160	100	
Education Status			
0 - 6	29	18.13	
7 - 12	40	25	15.4
13 - 18	91	56.88	
Total	160	100	
No of Household			
1 - 5	99	61.88	
6 - 10	48	30	7
11 - 15	11	6.88	
16 - 20	02	4.38	
Total	160	100	
Sources of Finance			
Personal savings	55	34.4	
Friends and relative	69	43.1	
Isusu	30	18.6	
Commercial Bank	-	-	
Microfinance Bank	6	3.75	
Total	160	100	
Gender			
Male	90	56.25	
Female	69	43.12	
Total	160	100	
Trade Union			
Member	10	6.25	
Non member	150	93.75	
Total	160	100	
Years in business			
1 - 4	58	36.25	16
5 - 8	88	55.00	
9 - 12	10	6.25	
13 and above	4	2.50	
Total	160	100	
Branding of Products			
Yes	104	65	
No	56	35	
Total	160	100	
Means of Delivery			
Personal Car	16	10	
Bike	55	34.38	
Commercial	89	55.63	
Total	160	100	

Source: Field Survey, 2021

Profitability of Farmers using Social Network in Advancing Agribusiness

The enterprise budgeting analysis was used to estimate the monthly profitability of farmers' using social network to advance agribusiness as shown in Table 2. Result of the analysis, indicating total cost (TC), Total revenue (TR), total variable cost (TVC), total fixed cost (TFC), gross margin (GM), net marketing income (NMI), mean net marketing income (MNMI) and net return on investment (NRI) was presented in Table 2. It could be seen from the table that out of the total cost of ₦76, 743, 261.5 spent by the farmers, purchase constituted 97% while the least expenses was on off - loading. White (2013) reported that utilizing social

network in agri - marketing enhances agricultural efforts thereby increases sales turn over.

On enterprise profitability, the farmers realized ₦166, 970, 874 after spending a total variable cost of ₦ 75, 924, 801 and total cost of ₦ 76, 743, 261.5. The transaction generated a gross margin of ₦ 91.046073.00, net marketing income of ₦90, 337, 617.50, net return on investment of 1.2. The implication of the net return on investment is that the farmer gained 1.2 kobo for every 1 Naira invested in using social network in advancing agribusiness. Overall, the profitability indicators (gross margin, net marketing income, and net return on investment values) showed that the use of social network in advancing agribusiness is a profitable.

Table 2: Estimated Monthly Profitability of Farmers using Social Network in Advancing Agribusiness.

Variables		Percentage %
Total Revenue	166, 970, 874	
Variable Cost (VC)		
Purchases	74, 361, 756	97.90
Transportation	627, 216	0.83
Loading	588120	0.51
Off - loading	256640	0.33
Miscellaneous (Recharge card and Data)	291070	0.38
Total Variable Cost (TVC)	75, 924, 801	
Fixed Cost (FC)		
Storage/Warehouse	680000	83, 08
Depreciation on equipment (wheelbarrow, chairs, tables)	22960.5	2.80
Interest on Loan	115500	14.11
Total Fixed Cost (TFC)	818460.5	100
TOTAL COST TC=TVC+TFC	76, 743, 261.5	
GROSS MARGIN = TR - TVC	91.046073	
Net Marketing Income NMI= GM - TFC	90, 337, 617.5	
Return on Investment TR/TC Net Return on Investment NMI/TC	2.175 1.175	
Gross Ratio = TC/TR	0.459	
Marketing Efficiency = TC/TR x100/1	46%	

Source, Field Survey, 2021.

Marketing efficiency of farmers using social network

The Shepherd - Futrel method was used to determine the coefficient of marketing efficiency. The method expresses marketing efficiency as the ratio of total cost to total revenue expressed as percentage. The lower percentage, the better the marketing efficiency, since less proportion of the revenue will be expended on total cost of marketing.

The model is slated as:

$$ME = TC \times 100 = 166, 970, 874 \times 100 = 46\%$$

$$TR = 76, 743, 261.5$$

Where:

ME= Marketing efficiency

TC= Total cost

TR=Total revenue.

The result of the analyses revealed that farmers using social network in advancing agribusiness did not attained

efficiency of 100% in their business implying the existence of good level of inefficiencies.

Market structure of farmers using social network in advancing agribusiness

To measure the degree of seller concentration of farmers using social network in advancing agribusiness, gini coefficient was used through the value of monthly sales. The result of the analysis of market structure using gini coefficient is shown in Table 3. The result revealed gini coefficient of 0.726. This implies a high level of income

inequality (sales margin) in the distribution of income among the farmers using social network and high concentration of sales in the hand of few farmers, hence existence of imperfect competition in the market. The result is an indication that some farmers could influence prices. This agrees with (Nkamigbo, Ugwumba and Okeke, 2019) who noted a gini coefficient of 0.6556 in their study area. This disagrees with (Ocholi, Nyiatagher and Udeh, 2017) who reported a gini coefficient of 0.41 (low concentration) in their study area.

Table 3: Market Structure of farmers using social network

Monthly sales	F	Proportion X ₁	Cum	TMS	Cum. Pro of TMS	X ₁ Y ₁
70, 000 - 120, 000	72	0.450	0.450	72, 485, 437	0.434	0.1953
121, 000 - 171, 000	31	0.193	0.643	39, 652, 000	0.237	0.0457
172, 000 - 222, 000	20	0.125	0.768	25, 895, 721	0.155	0.0193
223, 000 - 273, 000	17	0.106	0.874	11, 000, 000	0.065	0.0068
274, 000 - 324, 000	13	0.081	0.955	10, 688, 421	0.063	0.0051
274, 000 - 324, 000	7	0.043	0.998	72, 792, 85	0.043	0.0018
Total	160			166, 970, 874		0.274

GC = 1.0.274 = 0.726. Source: Field survey, 2021.

Constraints to farmers using social network in advancing agribusiness

The constraints associated with farmers using social network in advancing agribusiness in the study area were shown in Table 4. The findings showed that lack of awareness (M=3.35) were perceived as the most prevalent constraints in the use of social media to advance agribusiness in the study area. Many are not aware of this modern device like phones to create awareness and market agricultural produce. Another constraint of importance in the study area is poor assessment of social media (M=3.20) by intending customers. This is in agreement with (Guana, Obi, Egbara, Omedeomero and Akuabor, 2017) who reported that many youths still lack skills and competence in using social network for agricultural development. Costly charge of data when accessing the social media (M=3.05) ranks 3rd among the constraints in the use of social media in advancing agribusiness in the study area which is in agreement with (Kipkurgat, Onyiego and Chenwaina, 2016) who reported costly charges when accessing the internet. Many can't afford to be on line constantly to know the trend in agribusiness due to insufficiency of data. This is adversely affecting agribusiness. Poor network services (M=3.0) is another constraints that do affect the use of social media in advancing agribusiness in the study area which is in tandem with (Kipkurgat *et al*, 2016) who reported poor network access as the main constraints in their area. It is almost the order of the day to see variation in network supply in this country at large. Other constrains of less importance were poor power supply and use as a deceptive means.

Table 4: Constraints to farmers using social network in advancing agribusiness

Constraints	Mean score	Rank
Poor network services	3.0	4 th
Costly charge on data when accessing the social network	3.05	3 rd
Poor usage of phones	2.48	5 th
Poor assessment by intending customers	3.20	2 nd
Use as a deceptive means	2.30	7 th

Poor power supply	2.40	6 th
Lack of awareness	3.35	1 st

Source: field survey, 2021.

4. Summary

The study examined the assessment of performance of farmers using social network in advancing agribusiness in Anambra State, Nigeria. The study specifically described the socio - economic characteristics of the respondent in the study area, determined the profitability of respondents, market structure and challenges of social network in advancing agribusiness by the respondents in the study area.

Multi - stage, purposive and simple random methods were used to select one hundred and sixty respondents for the study. Two Agricultural zones were purposively selected, two blocks were randomly selected from each zone making it a total of 4 blocks. Four circles were randomly selected from each of the blocks earlier selected making it a total of sixteen circles and finally ten respondents were randomly selected from each of the sixteen communities selected, making it a total of one hundred and sixty respondents which is the sample frame.

Primary data were collected by means of structured questionnaire administered to respondents by personal interview. Data were analyzed using descriptive statistics (mean, frequency distribution, percentages, mean ranking and ratio), Gini coefficient and Budgetary method were used.

Findings on the socioeconomic characteristics showed that farmers are relatively young, energetic, are in computer age and able to use phone and other devices to advance agribusiness in their area and beyond for optimum profit. It also revealed that the farmers are educated, married and there is male dominance in the use of social media in advancing agribusiness in the study area.

Overall, the profitability indicators (gross margin, net marketing income, and net return on investment values) showed that use of social network in advancing agribusiness is a profitable venture. The result of gini coefficient 0.726 implies a high level of inequalities (sales margin) in the distribution of income among the farmers using social network and high concentration of sales in the hand of few farmers, hence existence of imperfect completion in the market.

The constraints associated with farmers using social network in advancing agribusiness showed that lack of awareness, poor assessment of social media and costly charge of data when accessing the social media were perceived as the main constraints affecting agribusiness.

5. Conclusion

The assessment of performance of farmers using social network in advancing agribusiness in Anambra State, Nigeria is a profitable venture. Also giving the positive values of gross margin, net marketing income, mean net marketing income and return on investment, the farmers were efficient in the business of using social network in advancing agribusiness. If measures will be taken to address the constraints, their level of income would improve. Network providers should of necessity improve their services to enable social media users to be effective.

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