



Access and Utilization of Government Health Facilities by Rural Farm Households: Evidence from Kogi State, Nigeria

Shaibu, U. M* and Ibrahim M. K

Department of Agricultural Economics and Extension, Kogi State University, Anyigba, Nigeria

*Corresponding Author Email: brave.monday@yahoo.com

Abstract

Keywords:

Healthcare, infrastructure, access, utilization, and government-owned

The study analyzed farm households' access and utilization of government health facilities in Kogi State, Nigeria. Specifically, it described the socioeconomic characteristics of farm households, determined the level of accessibility to health facilities by farm households, and determined the factors that drive farm households' utilization of government health facilities. A two staged random sampling technique was used to select one hundred (100) farm households and twenty (20) government-owned health care facilities from four Local Government Areas in the State. Data obtained through structured questionnaire and spot assessments were analyzed using descriptive statistics, indices of accessibility and binary logit regression model. The indices of accessibility revealed that there is unequal access to government health facilities (medical personnel and infrastructure) in the area. The binary logit model indicated that farming experience ($p < 0.01$), distance to health centre ($p < 0.05$), and cost of treatment ($p < 0.001$) negatively influenced the utilization of government health facilities, while gender ($p < 0.05$), education ($p < 0.05$), and numbers of dependants ($p < 0.05$) directly influenced government health care facilities utilization among farm households. It was suggested based on findings from the study that government needs to urgently engage and deploy more medical personnel and facilities to rural areas. Also, intervention programmes such as construction of good access will reduce travelling distance to health facilities.

1. Introduction

There is a common maxim that health is wealth. Perhaps, good health is a prerequisite for a productive and economically viable life. Poor health condition could portend great hardships on farming households, including monetary expenditures, loss of labour, loss days and sometimes death. The health status of family labour affects their ability to work, and thus underpins the welfare of the household, including the children's development (Asenso-Okyere et al., 2011). According to Titus et al (2015) poor health affects agricultural production. Most health challenges often go unattended to because of lack or inadequate access to healthcare.

Access to healthcare services is critical for agricultural development. Ideally, farm households should be able to conveniently and confidently use services such as primary care, dental, behavioral

health, emergency, and public health services. Farm households' access to health care facilities involves adequate availability of medical professionals and related services and the ability to afford those services, through health insurance plans and/or to cover out-of-pocket expenses. Furthermore, the adequacy of care available and the ability of the farm population to pay for care is saddled with variety of factors that point to the uniqueness and differences among farm families, such as health status of farm household, riskiness of the farming environment, and the physical distances to health professional services and facilities (Ahearn and Mishra, 2012). Indicatively, health care reform in recent times promises to directly address the issue of access to affordable health care services. In as much as such reforms have not been widely available to farm households, it is much less clear how health care

reform will affect the location of health professionals and facilities in rural areas where farm households reside. Accessibility to healthcare facilities is multi-dimensional as it involves the quality of care, geographical accessibility, financial accessibility and acceptability of the services (Peters et al., 2008). Similarly, utilization of the health facilities is a function of availability, quality and cost of services, in addition to socio-economic structure, and personal characteristics of the users (Manzoor et al., 2009; Onah et al., 2009).

Health care utilization by farm households implies the use of health care services/facilities by farmers or the farm family. It involves the availability, quality and cost of service, as well as socio-economic structure, and personal characteristics of the users (Manzoor et al., 2009; Onah et al., 2009).

Following the under-utilization of the public health facilities in developing countries as noted by (Zwi, 2001), Nigerian governments have put in place series of programmes aimed at providing efficient health care facilities to its population; example of such programmes are: polio eradication, HIV/AIDS awareness campaign, Roll Back Malaria, expansion of medical education, improvement of public health care, provision of primary health care (PHC) in many rural areas. Despite these efforts by successive government, Nigerian health system is dysfunctional and grossly under-funded with a per capita expenditure on health as percentage of GDP in 2013 of 3.7 (World Bank, 2014). As a result, Nigeria still has one of the worst health indices in the world and sadly ranked 171st among 178 nations with a death rate record of 124 per 1,000 (having infant death rate of 74 per 1,000) and maternal death due to pregnancy and childbirth put at 1 in every 29 Nigerian woman (World Bank, 2014).

Despite the huge potential that adequate healthcare interventions hold for the wellbeing and productivity of farm households, health care utilization has remained limited in many parts of sub-Saharan Africa (Say and Raine, 2007). Previous studies have attributed limited health care utilization to a number of factors. For example, the distance of health facilities from settlements has long established as a significant barrier to health care utilization. In such scenario, many rural farm households have to travel long distances to receive treatment (Kadobera et al., 2012).

Other factors identified to hinder smooth health care utilization includes the uneven distribution of health care facilities and the dearth of health personnel across rural communities resulting from the scarcity of health funds (Akin et al., 1995). The scarcity of fund is a function of poor budgetary

allocation to the health sector coupled with the bureaucracy and corruption of administrators.

Moreover, a number of previous studies have identified other barriers that could hamper underutilization of health care facilities even where such facilities and personnel are well distributed. For example Wall (1998) and Hugo (2012) reported that the purdah system (seclusion of the wife) practiced among the Muslims could be a barrier restricting women's utilization of health facilities. Other factors such as low levels of maternal education and resource-related barriers have been documented to reduce health care facilities utilization. Okafor (1991), using the index of access opportunity (AO) mode, revealed that the areas which is mostly accessible lie to the north and largely outside of the inner part of the city. These areas included some high, middle and lower income class districts. Using multiple regression models, he found out that the pattern of distribution of government hospital was in fact, not regressive.

Ajayi et al (2005) reported reduction in life expectancy among rural dwellers in Ogun State, Nigeria as a result of inadequate access to health care facilities. Olatunji et al (2013) assessed utilization of Western and Traditional healthcare services by farm-families in Ukwa-East Local Government of Abia State. They reported that very few respondents use Western health care services, majority (80.4%) usually combine Traditional and Western health care services. They also found that farm households were not in doubts about the beneficial effects of utilizing Western over Traditional health care service; their major problems with it were the high costs, time wastage, grossly inadequate primary health care facilities.

Mugisha et al (2004) and Buor (2005) in separate studies identified household income, education, and expected competency of the provider as positive determinants of utilization of health care services in rural Burkina Faso and Ghana, respectively. Quynh et al (2012) reported absence of specialized, dental and after-hours care, high cost of services, and issues of access to transport as barriers to health care access by residents in rural Australia.

Distance to health centers, transportation and care costs could be linked to underutilization of public health care facilities, especially in rural areas. Sequel to the underutilization of these health care facilities which are occasioned by inaccessibility, there has being deaths among farm households in the study area from illness which ordinarily could be treated and prolonged state of illness, reducing labour productivity from the area. The multiplier effect of inadequate access to public health care facilities is the man hour loss of labour available for agricultural

activities (Ajala, et al. 2005). Hence, it becomes necessary to analyze farm households' access and utilization of government health care facilities in Kogi State, Nigeria. Specifically, the study described the socio-economic characteristics and health needs of the farm households, determined the level of accessibility to health care facilities by farm households; and the factors that drive health care utilization.

2. Materials and methods

The study was conducted in the eastern senatorial zone of Kogi State. The zone comprise of nine Local Government Areas (LGAs) out of a total of 21 in the State. The major ethnic inhabitants of the zone are the Igalas alongside other minority groups likes the Bassa, Nupe and Agatu. A significant proportion of the population especially in the rural areas are mainly farmers.

Cross-sectional data of rural farm households was employed in this study. Two staged random sampling technique was used to select the respondents. In the first stage, four LGAs areas (Olamaboro, Ankpa, Omala and Dekina) were randomly selected from the nine in the zone. Secondly, twenty-five households were randomly selected from each of the LGA. In all, one hundred households were interviewed for the study. Part of the data collection also involved visiting rural health facilities. Five government-owned health facilities were selected for visitation per LGA. A total of twenty rural health care facilities were visited. Data was collected with the aid of well structured questionnaire. Data obtained were analyzed using descriptive statistics, indices of accessibility and the logit regression.

Model Specification:

Indices of Accessibility

Following from previous studies four indices of accessibilities (IA) were employed in examining the level of access of rural households to healthcare facilities. These includes: number of patient per medical officer (IA^1); number of patient per nurse; number of patient per community health workers; and number of patient per bed space. The functional forms of these indices are presented below:

$$IA^1 = \frac{N^P}{N^D} \quad (1)$$

where IA^1 = index of accessibility for number of patience per doctor

N^P = number of patients

N^D = number of doctors

$$IA^2 = \frac{N^P}{N^N} \quad (2)$$

where IA^2 = index of accessibility for number of patience per nurse

N^P = number of patients

N^N = number of nurses

$$IA^3 = \frac{N^P}{N^C} \quad (3)$$

where IA^3 = index of accessibility for number of patience per nurse

N^P = number of patients

N^C = number of community health workers.

$$IA^4 = \frac{N^P}{N^B} \quad (4)$$

where IA^4 = index of accessibility for number of patience per nurse

N^P = number of Patients

N^B = number of bed spaces

Logit Regression:

Logit regression model was used to examine factors that drive utilization of health facilities. Specification of the logit model begins by generally assuming that an outcome variable Y takes on the values such as 1 or 0. More specifically for the utilization decision model:

$$\text{Prob}(Y_i=1/X) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9$$

with Y = 1 denoting respondent's non-utilization of health facility and 0, if otherwise. β is the parameter to be estimated and the regressors, X included in the model are:

X_1 = Age of household head (in years)

X_2 = Gender (1, if male, 0 otherwise)

X_3 = Educational level (years of formal education)

X_4 = Farming Experience (in years)

X_5 = Dependants (number of children and elderly)

X_6 = Kind of Ailment (1, if malaria, 0 otherwise)

X_7 = Distance (in km)

X_8 = Transport cost (in naira)

X_9 = Treatment cost (in naira)

X_{10} = Health status (1=unhealthy, Otherwise, 0)

3. Results and discussion

3.1 Socioeconomic Characteristics of the Respondents

Selected socioeconomic characteristics of farm households are presented in Table 1. The result shows that majority of the respondents (42%) were between the ages of 41-50 years. Dias et al (2008) reported a direct relationship between age and farmers' utilization of health care facilities. A high proportion of the households (72%) were male headed. This is a common practice in most African households were male assumes the headship position. The result further shows that majority of the

respondents were married with an average family size of 10 members.

In terms of literacy majority of the household heads (51%) had no formal education. Most of the farm households had been into farming for over 20 years indicating a huge level of experience.

3.2 Level of Accessibility to Health Care Facilities by Farm Households

Results of computing the indices of accessibility to health care facilities by farm households in the study area are presented in Table 2. The result shows a high average of 172 patients per doctor in Olamaboro, 27 patients per Nurse in Dekina, 122 patients per community health worker in Omala, and 7 patients per hospital bed in Olamaboro. Generally, there is an average of 108, 50, 20, and 6 patients to a doctor, community health worker, nurse and hospital bed respectively in the study area. This finding underscores the inadequacy of health care facilities and low number of personnel in rural areas. Inadequate infrastructure and medical personnel could decrease the level of utilization of public health facilities in the area.

An indirect relationship exists between the number of patients per medical personnel and accessibility. The lower the number of patients per medical personnel, the more the accessibility of health care facilities. Mekonnen and Mekonnen (2002) posited that accessibility of health services is an important determinant of utilization of health services in developing countries such as Nigeria. Previous Studies indicated that the number of Primary Health-care Centres (PHCs) in rural areas of Nigeria is grossly inadequate. Moreover, most of the available health facilities are in poor state while there is gross inadequacy of medical personnel in rural areas.

Indicatively, Gulpta et al (2004) and Etuk et al (2013) in separate studies asserted that the PHCs in Nigeria cares for less than 20% of potential rural patients.

3.3 Factors that Drive Health Care Utilization in Farming Communities

The output of binary logit regression on factors that drive health care utilization among farm households is presented in Table 3. The result shows that the coefficient of farming experience ($p < 0.01$), distance to health centre ($p < 0.05$), and cost of treatment ($p < 0.001$) were negatively signed. The inverse relationship implies that, the likelihood to utilize public health facilities by farm households in the area will decrease with an increase in any of these variables.

The probability of use of public health facilities decreases with farming experience, implying that farm household head with more years of farming are more likely to employ alternative means of caring for their health. For example, the practice of self-medication and traditional methods of treatment. More years of farming could expose the farmer to the knowledge of available herbs that will treat different ailments and hence, decreases the utilization of public health facilities.

Far distance with its associated high cost reduces the utilization of public health facilities. Farmers are more likely to opt for self medication or traditional treatment when public health facilities are not within their reach. Indicatively, high cost of seeking health care services decreases the likelihood of use of public health care facilities. This finding agrees with Omotosho (2010) and Etuk et al (2013) when they reported that difficulties associated with transportation, illiteracy, poverty, user fee and traditional beliefs tends to drive rural dwellers into embracing traditional health care services.

Table 3 further shows that the coefficient of gender ($p < 0.05$), education ($p < 0.05$), and dependants ($p < 0.05$) positively drive the utilization of public health facilities among farm households. Farm households headed by male tends to use public health facilities than their female counterparts. This result accentuates low access of women to productive resources such as health care services and agricultural inputs.

This is in tandem with the findings of Awoyemi et al (2011) and Dias et al (2008). Increase in years of schooling increases the likelihood of public health facilities utilization among farm households. Farmers with more years of formal education tend to understand the importance of seeking public health services than those who had no formal education. Education serves as a "catalyst" in innovation adoption such as seeking orthodox (western) mode of treatment.

This finding agrees with Mekonnen and Mekonnen (2002), when they reported that utilization of modern health care facilities increases with educational attainment. Furthermore, an increase in the number of dependants (children and elderly) increases the likelihood of public health utilization among farm households.

The reason for this result could partly be attributed to poverty and low income status of farm households. By implication, larger households may not be able to afford private health facilities and thus turn to the utilization of public health care services, which they consider relatively cheaper.

Table 1. Socioeconomic Characteristics of Farm Households

Variables	Frequency	Percent
Age		
20 – 30	02	2.0
31 – 40	17	17.0
41 – 50	42	42.0
51 – 60	31	31.0
61 – 70	08	8.0
Sex		
Male	72	72.0
Female	28	28.0
Marital Status		
Married	72	72.0
Widowed	08	8.0
Separated	12	12.0
Divorced	08	8.0
Household Size		
1-5	03	3.3
6-10	53	53.0
11-15	38	38.0
16 – 20	06	6.0
Educational Status		
No formal education	51	51.0
Primary education	28	28.0
Secondary education	17	17.0
Tertiary education	04	4.0
Farming Experience		
1 – 10	03	3.0
11 – 20	10	10.0
21 – 30	42	42.0
>30	45	45.0

Table 2. Indices of Accessibility to Public Health Facilities

Local Area (LGA)	Government Patient per Doctor	Patient per Nurse	Patient per Community Health Worker	Patient per Hospital Bed
Dekina	61	27	52	05
Omala	112	21	122	06
Olamaboro	172	18	16	07
Ankpa	88	15	11	05
Pooled	108	20	50	06

Table 3. Output of Logit Model on Drivers of Health Care Utilization in Farm Households

Variables	Marginal Effect	p-values
Age	0.0339	0.568
Gender	0.1152	0.035**
Education	0.205	0.011**
Farming Experience	-0.1281	0.005***
Dependants	0.255	0.021**
Kind of Ailment	0.0391	0.266
Distance to health centre	-0.0606	0.022**
Transportation cost	-0.0219	0.015
Cost of Treatment	-0.0103	0.008***
Health Status	0.0814	0.244

Note: ** and *** imply that coefficients are significant in 5% and 1% respectively.

4. Conclusion and recommendations

This study analyzed access and utilization of public health facilities by farm households in Kogi State. It can be concluded from the study that government/public health facilities in the form of medical personnel and infrastructure were grossly inadequate in the area. Furthermore, the likelihood of government health facilities utilization was negatively influenced by farming experience, distance to health centre, and cost of treatment, while gender, education, number of dependants directly influenced the utilization of health care facilities. The findings from this study calls for urgent attention to be paid to the huge inadequacy of medical personnel and facilities especially in rural farming communities. In addition, the travelling distance between farming communities and health centers could be greatly shortened by locating additional health centres in rural areas, and the construction of good access road network

References

- Ahearn, M. and Mishra, A. (2009). Access of Farm Households to Health Care. *Choices-The Magazine of Food, Farm and Resource Issues*. A publication of Agricultural and Applied Economics Association, 24(4):1-7.
- Ajala, O. A., Lekan, S. and Adeyinka, S. A. (2005). Accessibility to Healthcare Facilities: A Panacea for sustainable rural development in Osun State Southwestern, Nigeria: *J. Hum. Ecol*, 18(2): 121-128.
- Akin, J. S., Guilkey, D. K., and Denton, E. H (1995). Quality of services and demand for health care in Nigeria. A multinomial probit estimation. *Social Science & Med* 40: 1527-1537.
- Asenso-Okyere, K., Chiang, C., Thangata, P., Andam, K. S. (2011). Interactions between health and farm-labour productivity. International Food Policy Research Institute, Washington, DC.
- Awoyemi, T. T., Obayelu, O. A. and Opaluwa, H. I. (2011). Effect of Distance on Utilization of Health Care Services in Rural Kogi State, Nigeria. *Journal of Hum Ecology*, 35(1): 1-9.
- Buor, D. (2005). Determinants of utilization of health services by women in rural and urban areas in Ghana. *Geo Journal*, 61(1): 89-102.
- Collette, D. (1991). *Modelling Binary Data*, London: Chapman
- Dias, S. F., Severo, M. and Barros, H. (2008). Determinants of health care utilization by immigrants in Portugal. *BMC Health Services Research*, 8: 207.
- Etuk, U. R., Olatunji, S. O. and Ekong, I. (2013). Analysis of health extension needs on self medication among rural farmers in Akwa-Ibom State, Nigeria. *Nigerian Journal of Agriculture, Food and Environment*, 9 (1):63-66.
- Gulpta, M. D, Gauri, V. and Khemani, S. (2004). *Decentralized Delivery of Primary Health Services in Nigeria: Survey Evidence from the States of Lagos and Kogi*. Washington: The World Bank.
- Hugo, N. (2013). Purdah: separation of the sexes in northern Nigeria. (Accessed from; <http://www.consultanyafrica.com/index>).
- Kadobera, D., Satorius, B., Masanja, H., Mathew, A., and Waiswa, P. (2012). The effect of distance to formal health facility on childhood mortality in rural Tanzania. *Global Health Action*, 5: 143 – 163.
- Manzoor, I., Hashmi, N. R., Mukhtar, F. (2009). Determinants and pattern of health care services utilization in post graduate students. *J Ayub Med Coll Abbottabad*, 21(3): 100-105.
- Mekonnen, Y and Mekonnen, A. (2002). *Utilization of Maternal Health Care Services in Ethiopia*. Calverton, Maryland, USA: ORC Macro.
- Mugisha, F., Bocar, K., Dong, H., Chepng'eno, G and Sauerborn, R. (2004). The two faces of enhancing utilization of health-care services: Determinants of patient initiation and retention in rural Burkina Faso. *Bulletin of the World Health Organization*, 82:572-579.
- National Population Commission (NPC). (2006). *Population and housing census enumerators manual*. Federal Republic of Nigeria, National Population Commission, Nigeria, pp: 1-16.
- Okafor, S. I. (1991). Distributive effect of location of Government Hospital Ibadon. *Journal of Applied Geography*, 9: 123-133.
- Olatunji, S. O., Ehebha, E. O. and Ifeanyi-Obi, C. C. (2013). Utilization of Western and Traditional Healthcare Services by Farm Families in Ukwa-East Local Government Area of Abia State, Nigeria. *Journal of Agriculture and Social Research*, 13(2): 111-120
- Olayide, S. O. and Heady, E. O. (1982). *Introduction to Agricultural Production Economics*. Ibadan. University Press Ltd.
- Omosho, O. (2010). Health seeking behaviour among the rural dwellers in Ekiti State, Nigeria. *International Journal of Multi-Disciplinary*, 4(3):125-138.
- Onah, H., Ikeako, L., Iloabachie, G. (2009). Factors associated with the use of maternity services in Enugu, southeastern Nigeria. *Social Science and Medicine*, 63(7): 1870-1878.
- Peters, D. H., Garg, A., Bloom, G., Walker, D. G., Brieger, W. R and Rahman, M. H. (2008). Poverty and access to healthcare in developing countries. *Ann. N Y Acad. Sci.* 1136:161-171.
- Quynh, L., Hoang, B., Nguyen, S. A and Ha

Hoang, D. T. (2012). Access to Health Care Services in An Australian Rural Area – A Qualitative Case Study. *International Journal of Annotative Interdisciplinary Research Issue*, 3: 29-36.

24. Say, L., and Raine, R. A (2007). A Systematic Review of Inequalities in the Use of Maternal Health Care in Developing Countries: Examining the Scale of the Problem and the importance of context. *Bull World Health Organ*, 85: 812-819.

25. Titus, O. B., Adebisola, O. A. and Adeniji, A. O. (2015). Health-care access and utilization among rural households in Nigeria. *Journal of Development and Agricultural Economics*, 7(5):195 – 203

26. Wall, L. L. (1998). Dead mothers and injured wives. The social context of maternal morbidity and mortality among the hausa of Northan Nigeria. *Studies in Family Planning*, 29: 341-359.

27. World Bank. (2014). *World Development Report: Agriculture for Development*. Washington DC: World Bank.

28. Zwi, A. B. (2001). Private Healthcare in Developing Countries. *British Medical Journal*, 323: 464-466.