

Futo Journal Series (FUTOJNLS)
e-ISSN : 2476-8456 p-ISSN : 2467-8325
Volume-2, Issue-2, pp- 22 - 34
www.futojnls.org

Research Paper

December 2016

Effects of Household Foods on Health Status of Farmers- Implication on Farm Labour Productivity in Ahiazu Mbaise Imo State, Nigeria

*Nwaiwu, I.U.O, Obasi, P.C., Korie, O.C., Ben-Chendo, N.G.,
Uhuegbulem, I.J. and Anyanwu, F.C.
Department of Agricultural Economics, Federal University of Technology, Owerri
Correspondence e-mail: niuचे2004@yahoo.com

Abstract

This paper discussed the health relevance of household foods and the implications on farm labour productivity in Ahiazu Mbaise Local Government Area of Imo state, Nigeria. Multi-stage sampling technique was used to select 60 farming households whose responses formed the data for this study. Data were analysed using descriptive statistics and ordinary least square regression tools. Results showed that the farmers' mean age, household size, level of education, and farming experience were 55 years, 8 persons, 13 years and 17 years respectively. It was also found that the following disease conditions like Malaria, Diabetes Mellitus, Arthritis and hypertension were prevalent in the area. Furthermore, factors such as type of food consumed (X_1) and household annual income (X_3) were found to have significantly affected the farmers' health status at ($p \leq 0.05$). The coefficients were greater than zero (i.e. β_1 and $\beta_3 > 0$) implying a directly proportional relationship to health status against a priori expectation. Therefore recognising that farmers' labour will be available when he/she is healthy, and health depends greatly on type of food consumed as confirmed in this study. It was concluded that farmers should be made to know the proper dietary needs for optimum health conditions. Hence the need to incorporate healthy food tips in extension education packages. This will ensure good health for farmers and better labour availability and productivity.

Keywords: Health, Diseases, Labour, Productivity, Food and Availability

1.0 Introduction

Healthy foods and food security issues are top priorities in the development agenda of most developing nations of the world. Nutrition-related chronic diseases are placing new demands on an already overburdened health care system, and taking their toll on human productivity and quality of life. Our current large scale industrial food system favours animal products and highly-refined, preservative laden, calorie-dense foods, rather than fresh fruits and vegetables, whole grains, and other high fiber foods that are important for health (HCWH, 2005). These facts stem from the point that most contemporary health challenges are associated with unhealthy feeding styles and food insufficiency or unavailability in the right proportion. The only feasible solution to this is increased agricultural productivity which will not only make healthy foods available to all but also increase the economic power of the rural farmers that constitute over 70% of Nigerian population.

The role of agriculture in economic development of most countries can hardly be over-emphasized (Timmer, 2003). The contributions of agricultural growth to overall poverty reduction have been documented (Gustavo & Kostas, 2007). A retrospective look into the Nigerian economy and its development reveals that agriculture was both the main stay of the Nigerian economy and the Chief foreign exchange earner (Chigbu, 2005). In the 1960s, agriculture accounted for well over 80 percent of the export earnings and employment; about 65 percent of the GDP (Gross Domestic Product) and about 50 percent of the government revenue (FRN, 2000). This contribution to the Nigerian economic growth has however declined over the years. The contribution of agriculture to the GDP was about 50% in 1970 and 34% in 2003 (CBN, 2003). In view of the importance of agricultural growth to economic growth, Abayomi, (1992) observed that rising agricultural productivity has been the most important vehicle for successful industrialization. When this is achieved, there will be economic development and hence better standard of living epitomized by food security.

Achieving household food security in its totality continues to be a challenge in most developing countries like Nigeria. The foods we eat contain various nutrients which give a material its feature to be called a food. A nutrient is something the body uses in order to grow, to repair tissues and to provide energy to work (FAO, 1997).

According to Schiff & Valdes, (1990) malnutrition is a multi-factorial issue that indicates a general deficiency in minerals like iron, iodine and vitamin A and energy and protein foods. There can be malnutrition without hunger. This is true and it is predominant within most farming household who feel full after eating large amounts of maize meal, rice, cassava and yam. They eat these foods day after day with very little of other food supplements and will begin to show signs of malnutrition. This is due to the fact that the food they eat is not nutritionally balanced enough and they tend to fall ill when exposed to prolonged farm activities (Eva, 1981).

The cause of some illness has been found to be a severe shortage of one or more nutrient over a long time. Such illnesses include; Night blindness, due to lack of Vitamin A, Beriberi, due to excessive intake of carbohydrate food such as rice, diabetes, due to high sugar level in the blood and high blood pressure due to high salt intake. Also some illnesses are caused by low immune system due to poor feeding and poor environmental condition of the farmer. These diseases include malaria, diarrhea and typhoid fever (Brudley, 2002).

This issue of food insecurity and malnutrition among developing countries which has resulted to the diseases and ill health conditions earlier mentioned has consequently been a threat to labour availability and productivity among farmers in the developing countries such as Nigeria (Moha, 1993). Due to these, there is loss of productive persons and time, as farming household take time off from agricultural production to take care of themselves or to carter for their sick ones. Furthermore, according to Nwaiwu, *et.al.*, (2013), when there is prolonged dry season, the accompanied high temperatures and heat waves affect the health of farm labour adversely thereby leading to higher frequency of staying out of work and taking cover under sheds of trees and 'make-shift' farm houses. This action they said invariably reduces labour time allocation and subsequently, lower labour productivity and agricultural productivity.

In a similar vein, Schultz (1999) and Strauss & Thomas (1998) observed that there is a relationship between health and productivity of skilled and unskilled labour, as poor health of farmers will result in loss of work day/man-day, loss of labourers, decrease in innovative ability and ability to explore diverse farming practices. This

problem leads to low income to farmers and a reduction in the contribution of the agricultural sector to the GDP.

Economic growth is often assumed to naturally have a positive impact on nutritional and consequently health status through incomes and food expenditures. However, economic growth has not translated into improved nutrition nor health in a number of developing countries (Fan & Brzeska, 2011). Though higher income could allow households to consume a greater own production or from the market, few studies quantify these effects satisfactorily, and the limited studies available offer either inconclusive or conflicting results on the link between economic growth, food consumption, nutrition and health status (Fan & Brzeska, 2011). The idea of linking food security and nutrition components to agriculture is not new. Although economists began in the 1980s to actively search for empirical evidence on the existence and shape of a function relating nutritional status to labour productivity (Strauss, 1984), nevertheless, effective approaches for incorporating nutrition goals into agriculture and rural development projects remained limited (Pinstrup–Andeson, 1981).

Good health and productive agriculture are important in the economy of any nation especially in the fight against poverty. Health enhances work effectiveness and the productivity of an individual through increase in physical and mental capacities (Ajani & Ugwu, 2008). According to Schultz (1999) and Strauss & Thomas (1998), there is a positive relationship between health and productivity of skilled and unskilled labour. Good health is related to labour output or better production organization (since people of good health generally have better intellectual capacities) which can enhance farmer's household income and economic growth. The process of agricultural production and the output it generates can contribute to both good and poor health among the producers as well as entire society. Being an agricultural producer is a determinant of health relative to income and labour (Corinna & Ruel, 2006). Health also affects agricultural output, particularly its demand. Malnutrition and disease patterns influence market demand for food quantity, quality, diversity and the price people are able or willing to pay. Nutrition affects people's health and is an important factor in farm labour productivity. Poor nutritional status predicts the probability of developing chronic diseases and consequently, influences labour force participation (Sur & Sewaner, 1994). The nutrition

and health status of adults affects the duration of labour force participation and the intensity of work effort. Poor health will result in a loss of days worked or in reduced worker's capacity and is likely to reduce output (Amtle & Pingali, 1994).

The increase in agricultural productivity is a pertinent step towards economic progress through multiple pathways such as reduction in poverty, increase in real income changes, employment generation, rural development and reduction in food prices. However, productivity growth can catalyze a wide range of direct and indirect effects that mediate the pathways to poverty alleviation and economic growth (Thirle *et al.*, 2003). Agricultural productivity growth can drive rural growth and catalyze a pro-poor development process (Thirle *et al.*, 2001). In theory, increasing agricultural production (output) increases incomes for poor farmers who then increases demand for the goods and services produced by the non-farming rural poor (Mellor, 1999). There are also several additional linkages and multiplier effects that may arise between increased agricultural output and other measures of welfare, however, little research has been done to verify these hypotheses or measure their impact (Irz *et al.*, 2001). Among these, Timmer (1995) opined that increased food production and farm incomes allow for better nutrition and increased investment in health and education.

Noting that government at various times has initiated programmes and policies to ensure food sufficiency to the citizenry, yet there is need to emphasise the importance of good nutrition and healthy feeding among farming households as it is imperative to their health and productivity. In consideration of the above correlations, this study titled effects of household foods on health status of farmers-implication on farm labour productivity in Imo state, Nigeria as a pertinent step towards economic progress, needs not be over emphasized.

2.0 Material and Methods

Nigeria, which spans an area of 924,000 square kilometers, is bordered by the gulf of guinea, Cameroon, Benin, Niger and Chad. The topography ranges from mangrove swamp land along the coast to tropical rain forest and savannah to the north (NPC, 2004). Nigeria is made up of 36 states with Imo State as one of the states in the south-eastern Nigeria. The state lies between latitude 5° 10' and 5° 57' north and longitudes

6°35' and 7° 28' east, with an area of about 5113.35 km², ISMLSUP, (1997). Multi stage sampling techniques was used to select a sample of 60 households. Data used were collected from both primary and secondary sources. Data were analysed using descriptive statistical tools and ordinary least squares regression technique. The regression model used to ascertain the effects of household foods on health status is implicitly stated as follows;

$$Y = f(X_i, \beta_i, e)$$

Where Y= frequency of visit to hospitals (as a proxy for Health status of farmers)

X_i = predictor variables

X₁ = Type of food (% protein based food)

X₂ = Tastes and preference (1 = like, 0 = dislike)

X₃ = Annual income (₦)

X₄ = Age (years)

β_i = parameter estimates/coefficients

e_i = Stochastic error term

A priori, it was expected that β₁ and β₃ < 0 while β₂ and β₄ > 0. It was hypothesized that there is no significant relationship between farmers' health status and the type of food consumed and household annual income.

3.0 Results and Discussions

3.1 Socio-economic characteristics of the farming household

The result showed that 68.33% were females and 31.67% were males which imply that females participated more in farming than males. About 91.67% of the respondents were married, 8.33% of the respondents were singles. In terms of education, 41.67% had tertiary education, 40.00% had secondary education and 16.67% had primary education and only 1.66% had no formal education putting the mean level of education to 13 years. This mean level of education entails that they have attained reasonable educational level that should encourage better labour productivity.

Table 3.1: Socio-economic characteristics of the farming households

Variable	Frequency	Percentage	Mean
Gender			
Male	19	31.67	
Female	41	68.33	
Marital status			
Singles	5	8.33	
Married	55	91.67	
Level of Education			
0 (No formal education)	1	1.66	
1 – 6	10	16.67	
7 – 12	24	40.60	13years
13 – 18	25	41.67	
Household Size			
Below 5 (ie ≤ 5)	20	33.33	
6 – 10	38	63.34	8persons
11 and above	2	3.33	
Age			
20 – 39	14	23.33	
40 – 59	44	73.34	
60 -79	2	3.33	55years
Farming Experience			
1 – 10	21	35.00	
11 – 20	34	56.67	17years
21 – 30	5	8.33	

Source: Field survey data, 2015

Education and training enhances the human capacity development and should promote both on-farm and off-farm workers' productivity. About 63.34% of the respondents had household size of range 6-10 people with mean of 8 persons per home. About 73.34% were between the age ranges of 40-59 years with mean of 55 years. This implies that the respondents were adults in their middle ages who have gained wealth of experience in all facets of life. Hence should be at their peak in chosen careers of life. The table also showed that 56.67% of the respondents had farming experience ranging from 11-20 years with a mean of 17 years which put them in the class of farmers of reasonable length of experience which should know all labour saving techniques in production hence better labour productivity.

3.2 Health Problems Observed Among farming Households.

Table 3.2 shows the distribution of farming household according to the various disease conditions suffered in the area.

Table 3.2 Distribution of Respondents According to their various Disease Conditions

Health Problems	Frequency*	Percentage *
Malaria	46	76.67
Typhoid Fever	35	58.33
Diabetes	20	33.33
Arthritis	40	66.67
High Blood Pressure	11	18.33

Source: Field survey data, 2015

Note: * Multiple responses recorded, hence frequency and percentages not additive

The result in Table 3.2 shows that Malaria, Typhoid fever, Arthritis and Hypertension were the major health problems suffered by the farmers in the study area and account for the following percentages 76.67%, 58.33%, and 66.67% respectively. This implied that Malaria which accounts for 76.67% is the most predominant health problem faced by the farmers in the study area. In most rural communities, mosquito breeding niches and favourable conditions abound. Besides, the observed increasing temperatures in southeast Nigeria according to Nwaiwu, *et.al*, (2013), supports the proliferation of insects including the female anopheles mosquitoes that transmit the plasmodium which causes malaria in man. This assertion is consistent with the position of Pimentel, (1993) who observed that if global warming raises the temperature to 2 degrees Centigrade in the United States and slightly less in Africa, insects will multiply and prosper. The prevalence of diseases and vulnerability of farmers to such conditions debilitates them and leads to labour man day loss and low productivity.

Other disease conditions like Diabetes and Arthritis are sometimes associated with diets dominant in carbohydrates and poor exercise regimes. These are common among rural farmers in the study area who depend more on the root and tuber crops that are rich in starch and carbohydrates. These also make them vulnerable to diseases that affect their health status, hence poor labour availability and productivity.

3.3 Factors that Affect the Health Status of Farmers in the Study Area

Table 3.3 presents the ordinary least square regression result showing the factors that affect the health status of farmers in the study area.

Table 3.3 Factors that Affect the Health Status of Farmers in the Study Area.

Explanatory Variables	Linear	Exponential	Double Log	Semi Log
Intercept	-2.1378 (-2.6169)**	-0.5012 (-1.8390)***	-7.4326 (-4.8595)*	-25'1331 (-5.3101)*
Type of Food Consumed (X_1)	0.0910 (6.4525)*	0.0258 (5.4845)*	1.12316 (5.2171)*	3.9279 (5.8958)*
Taste& Preferences (X_2)	0.2159 (0.5211)	0.0437 (0.3159)	0.0025 (0.0186)	0.0482 (0.1160)
Annual Income (X_3)	0.00000017 (2.7006)**	0.00000047 (2.2256)**	0.2715 (2.4697)**	0.8848 (2.6137)**
Age (X_4)	0.000022 (0.7824)	0.000083 (0.8983)	0.1634 (1.6587)	0.4751 (1.5591)
R^2	0.53	0.45	0.49	0.54
F-ratio	15.42*	11.22*	13.27*	15.86*

Source: Field survey data, 2015

*Significant @ 1%; ** significant @ 5%; *** significant @ 10%

According to Table 3.3, from the four functional forms estimated, the semi-log functional form provided the best goodness of fit because it has the highest value of coefficient of multiple determination (R^2) 54%, which measures the extent to which the variations in the endogenous variables is explained by the variations in the predictors. It also has the highest F-value of 15.86 which is statistically significant at 1% level. Following this result, it can be deduced that among the four explanatory variables whose effects on health status of farmers were checked, only the type of food consumed (X_1) and the farmer' annual household income (X_3) proved to have significantly effect at 5% level with (t-cal of 3.93 > t-tab of 1.96) and (t-cal of 2.62 > t-tab of 1.96) respectively. Following these findings, the null hypotheses were rejected.

These factors were also proportionally related to health status which implies that the higher the type of food consumed (percentage of protein based diet eaten) and the household annual income, the higher the farmers' health status (Frequency of visit to hospitals). These are indeed against the a priori expectations and could be attributed to the fact that most times wealthy people known for relatively higher income statuses

have better access to hospitals. They therefore visit the hospitals more often than the poor people who rarely go to hospitals but patronize quack patent medicine dealers and Doctors in their neighborhood. Furthermore, their higher income statuses also make them have better access to protein foods that are relatively more expensive than the carbohydrate foods. Therefore the fact that they visit the hospitals more does not make them poorer, health wise.

Finally, other factors such as age and taste and preferences were proportionally related to health status and are in tandem with the a priori expectation that the higher the age of farmers and taste and preferences, the higher their frequency of visit to hospitals. Obviously, the older one becomes, the weaker the body organs and immune systems, hence the greater tendency to visit the hospitals for care and solutions. Also the more a farmer adheres to his/her tastes and preferences rather than the health implications of consumption of certain foods, the more frequent the farmer falls ill and then visits the hospitals. This is very common among farming household in rural areas who will prefer to eat *foo foo* / garri in the morning before going to farm, when he/she comes back from farm and even at the night before going to bed. They believe that it is only when they eat such meals that they can get enough strength to carry out their daily farming operations. Unfortunately, these foods are carbohydrate based and predisposes one to the dreaded diabetes mellitus which when occurs reduces labour availability and productivity. This supports the finding of Ajani & Ugwu, (2008) who opined that the greater part of the inefficiency of the farmer is as a result of adverse health. According to them, for every one percent improvement on the health condition of the farmer, there will be 31% increase in the efficiency of the farmer. This implies that improvement of the health condition of the farmer will improve efficiency greatly.

4.0 Conclusion

Healthy foods remain a panacea for sound health status. Poor health status negatively affects labour productivity. Going by medical advice, adults from the age of 40 years and above may begin to show signs of some chronic health conditions like Diabetes mellitus, Arthritis and Hypertension as was found to be predominant in the studied area.

Consequently, dieting otherwise known as better preference for food based on relevant health implications rather than taste, should be the order. This will not only ensure better life expectancy to the farmers but will also sustain labour availability and higher labour productivity. Furthermore, extension agents who disseminate agricultural innovations to farmers should be armed with proper dietary needs of an adult so that they will extend such to their rural clientele. Besides, government poverty alleviation programs should incorporate the supply of nutritious foods to the rural farmers while letting them know the need for eating such foods for longevity and sound health. When these are achieved, farmers would remain healthy and ensure sustained labour supply and labour productivity

References

- Abayomi, Y.O. (1992). *The Agricultural Sector in Nigerian the way Forward* Central Bank of Nigeria bullion, Lagos.
- Ajani, O.I.Y. & Ugwu, P.C. (2008). Impact of adverse health on agricultural productivity of farmers in Kainji Basin North-Central Nigeria: Using a stochastic production frontier approach. *Trends in Agricultural Economics*, 1(1), 1 - 7
- Brudley, K.R., (2002). *Health Hazards in Agriculture: An Emerging issue*. A Publication of NASD, Department of Agriculture, United States.
- Central Bank of Nigeria (CBN) (2003). *Statistical Bulletin*, Central Bank of Nigeria.
- Chigbu, U.E., (2005). Agriculture as the only savior to Nigeria dyeing economy retrieved from <http://www.nigerian.villagesquare.com>.
- Corinna, H. & Ruel, M. T. (2006) Understanding the links Between Agriculture and Health. Published by *International Food Policy Research Institute.of Economics* vol. 3, 4 and 12, Tokyo Macmillian.
- Eva, R. (1981). *Food, health and you*. London: Macmillan Education Limited.
- Fan, S. & Brazeska, (2011). The nexus between agriculture and nutrition: Do growth patterns and conditional factors matter? Paper Presented at 2020 Conference: Leveraging Agriculture for Improving Nutrition and Health, New Delhi, India.
- Federal Republic of Nigeria (2000). *Obasanjo's Economic Direction 1995 – 2003*. Office of the Honourable Minister for Economic Matters, Abuja, Nigeria.

- Gustavo, A. & Kostas S. (2007) Rural development and poverty reduction: is agriculture still the key? *Electronic Journal of Agricultural and Development Economics* 4 (1), 5-46. Agricultural Development Economics Division (ESA) FAO available online at www.fao.org/es/esa/eJADE
- Health Care Without Harm (HCWH) (2005) Healthy Food in Health Care -A Pledge for Fresh, Local, Sustainable Food. 12355 Sunrise Valley Drive, Suite 680 Reston, VA 20191 U.S.A. Phone: 703-860-9790 • Fax: 703-860-9795 www.noharm.org www.healthyfoodinhealthcare.org info@hcwh.org
- Imo State Ministry of Lands Survey and Urban Planning (1997). Imo State Survey Headquarters. Owerri; survey headquarters
- Irz X., Lin T., Colin S., & Steve P., (2001). *Agricultural Productivity Growth and Poverty Alleviation. Development policy Review*
- Mellor, J. (1999). Faster, more equitable growth:– The Valuation growth in Agriculture and poverty reduction Agricultural policy development
- Moha, A. (1993). Better Nutrition for African Families *African Farmers*, 8.
- Nigerian National Planning Commission (2004). Meeting everyone's needs. National Economic Empowerment and Development Strategy Nigerian national Planning Commission, Abuja.
- Nwaiwu I.U.O., Ohajianya, D.O., Orebiyi, J.S., Ibekwe, U.C. & Eze, C.C. (2013) Effects of climate change on labour time allocation to food crop production: A case study of Southeast Nigeria. *Global Journal of Current Research.*(GJCR) (CRDEEP) India 1 (4), 108 – 115. www.crdeep.com
- Nwaiwu I.U.O., Ohajianya, D.O., Orebiyi, J.S. & Ibekwe, U.C. (2013). Effects of climate change on labour use efficiency in Southeast, Nigeria. *Research Journal of Agricultural and Environmental Management.* 2 (9), 233-242. <http://www.apexjournal.org>
- Pimentel, D. (1993). Climate changes and food supply. *Forum for Applied Research and Public Policy* 8 (4), 54-60.
- Pinstrup-Andersen, P. (1981) Nutritional consequences of agricultural projects: conceptual relationships and assessment approaches, World Bank Staff Working Paper No. 456. Washington D.C., World Bank.
- Shiff M. & Valdes, A. (1990) *The link between poverty and malnutrition: A household theoretical approach.*
- Schultz, P. (1999). Productive benefit of improving health: Evidence from low income countries Mimco, Yale University.

- Strauss, J. (1984). Does better nutrition raise farm productivity? Discussion paper 457. New Haven, CT, US: Yale University Economic Growth Center.
- Strauss, J. & Thomas, D. (1998). "Health, nutrition and economic development". *Journal of Economic Literature*, 36, (2). 766-817.
- Sur, M. & Senawer, B. (1994). Nutrition, health and rural labour productivity: Preliminary wage evidence from Bangladesh selected paper, AAEA Annual Meeting, May 13.
- Thirtle, C., Lin L., & Piesse, J. (2003). The impact of research led agricultural productivity growth on poverty reduction in African, Asia and Latin America (Conference paper). 25th conference of the international Association of Agricultural Economists.
- Thirtle, C., Irz, X., Lin, Lin, Mckenzie -hill, V., & Wiggins, S. (2001). *Relationship between changes in agricultural productivity agricultural productivity and poverty reduction: Linkages and pathways and the incidence of poverty in developing countries* (Report No. 7946). London: Department for International Development.
- Timmer, C.P. (2003). Agriculture and pro-poor growth: Pro-poor economic growth research studies. Retrieved on 21st July 2005 from <http://www.nric.net/poverty/pub/timmer.pdf>.
- Timmer, P. (1995). Getting agriculture moving: Do markets provide the right signals? *Food Policy* 20 (5), 455 – 432.