Economic Analysis of Mobile Food Vendors in Nnewi Metropolitan City, Anambra State, Nigeria

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ABSTRACT

The study examined the economic analysis of mobile food vendor marketing in Nnewi metropolis, Anambra State, Nigeria. The study specifically, described the socioeconomic characteristics of mobile food vendors, various mobile food vendors prevalence in the area, profitability of mobile food vending, influence of socioeconomic characteristics on net income of mobile food vending and constraints associated with mobile food vending in the study area. Multistage sampling procedures involving purposive and random sampling methods was used to select respondents (marketers) for the study. Findings from socioeconomic characteristics shows that most of these mobile food uses wheelbarrow, bike, truck and or head to carry their product to sell to their customers. Findings on various mobile food vendors prevalence in the area showed that Abacha vendors had 25.83% which stands to be the highest mobile vending in the study area. Finding on profitability shows that marketers return 76 kobo for every 1 Naira invested in the business, a profitable enterprise. Stakeholders should work together to reduce the hike in transportation to enable these small businesses to thrive and government should formulate a programs to train these vendors to attain to world class vending business in food marketing were recommended.

INTRODUCTION

Agriculture is an engine room for sustaining growth of Nigeria economy and still remains the mainstay of our economy by providing food for the teeming population, creates jobs as well as wealth, raw material for the industrial sector and foreign earnings (Isibor and Nkamigbo, 2019). Agriculture is one of the affective ways to alleviate hunger, poverty and remained one of the top and widely profitable business sector (Amungwa and Baye, 2014 and Idu, Ajah, Alabi and Nnaji, 2021). Agriculture is a major sector of the Nigerian economy, accounting for up to 35% of total employment in 2020.

Mobile food vending are points of sale of ready-to-eat foods sold on the public roads. Mobile or street vending equally referred to as street foods are foods prepared and/or sold by vendors in street and other public places for immediate consumption or consumption at a time without further processing or preparation (Onyeka *et al*. 2023). They further stated that it have been a part of the culture of many countries throughout the globe particularly in low and middle income countries. It is regarded as a major source of income for many low income earners Vendors can also include those selling from informal sidewalk arrangements such as tables, coolers, and blankets (Lucan, 2019). It has happened for hundreds of years and is considered as a basis of many cities' historical and cultural birthright (Skinner, 2016, Agada, Fems, Duke and Okoyan, 2018).

Idiong (2022) stated the sector is a major source of employment for the poor in many cities of the developing world. This is particularly true in sub-Saharan Africa, where a significant share of the population depends on

the informal economy for their livelihoods and most informal workers are concentrated in food retail. In the context of the global food system, the food vending business is considered an important economic activity in developing countries that provide diverse employment opportunities for local workforce (Adeosun, Oosterveer, Greene and Salman, 2022) ; Fusté-Forné, 2021; Newman and Burnett, 2013). It attracts foreign tourists to experience the unique culture that different food menus provide (Abrahale, Sousa and Gabrula, 2019). Food and Agriculture Organization estimated that 2.6 billion people consume vended foods on daily basis (ImathIu, 2017). The mobile food vending businesses use trucks for mobility, as they can easily move around, build customer growth, and take care of different events. This line of business helps to sustain their source of livelihood and homes as they cater to their bills while other needs are met as well . There is increasing recognition that street food vending plays an important socioeconomic role in terms of employment potential, providing special income, particularly for women and provision of food at affordable costs to mainly the lower-income groups in the cities (Ayodele, Innocent and Garba, 2019) .

In Nigeria, mobile food vending accounts for the employment of millions of people who are poor, unskilled and have limited formal education. It contributes to survival of families in financial dificulties. It has benefits for sellers and consumers as people star marketing food as a source of income that helps the home economy.

MATERIALS AND METHODS

The Study was conducted in Nnewi North Local Government Area, Anambra state. Nnewi is a metropolitan city that is made up of four autonomous communities, namely Otolo, Uruagu, Umudim and Nnewichi. It has a population of about 2 million people and land square of 2,789 Km2 with latitude 6.0167N and longitude 6.9167E (Nkamigbo, Chikezie and Ozor, 2019 and wikipedia 2022). Nnewi is the second largest city in Anambra state and is referred to as the Japan of Africa due to the presence of several large and small scaled industries, automobile and production company and automobile market (Nkamigbo, *et al*, 2019) It is widely circulated that Nnewi metropolis houses over 2 million people. The rainy season occurs from the month of March to October, the dry season occurs from the month of November to February. The annual rainfall ranges from 1400mm in the North to 2500mm in the South with temperatures of 25°c to 35°c. Geographically. The main occupation of the people of Nnewi North Local Government Area (L.G.A) is trading and farming, therefore they depend mainly on Agriculture and commerce for their daily livelihood. Industrial activities in Nnewi have indeed brought massive development into the city. This is mostly because the breakthrough in the motorcycle spare parts business has attracted a huge population to Nnewi making the city a hub for many other business activities since there is a large population to patronize the businesses.

Sampling procedure and sample size

Simple random sampling was used to select 30 respondents from each of the 4 markets (Nkwo Nnewi, Eke-Amaobi, Orie-Agbo and Afia-Okpono egbu) from the list of mobile food vendors collected from their union which formed the sample frame. This includes those selling using /wheelbarrows/trucks to sell their food and those staying under temporary structures. Descriptive statistics such as tables, means, percentages and frequency . Enterprise Budgeting, multiple regression and relative importance index were used to analyzed the objectives.

Model specification

The Budgetary Technique is expressed as:

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

Where $\sum$ =sum

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

$P_{xij}X_{ij}$ = Prices X 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).

Marketing Efficiency

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

where

ME = coefficient of marketing efficiency, TC = Total marketing cost incurred (Expressed in Naira), TR= Total value of product sold (Expressed in Naira)

Socioeconomic characteristics were as follows:

NMI=Net Marketing Income, AGE= Age (in years), Sex = Gender (dummy: male =0; female = 1), MRS = Marital status (married =0; single = 1, widowed = 1), EDU = Educational level (Number of years spent in School), SOF = Source of finance (dummy,: personal =0, friends =1, isusu=2, Banks=3), HOS = Household size (number of persons living together), TOU = Membership of trade union (dummy: member =0, non-member = 1), EXP = Marketing experience (in years), MKS = Marketing cost (Naira), e = Stochastic error term.

It is implicitly represented below as

$NMI = \beta\ (AGE_1, SEN_2, MRS_3, EDU_4, , SOF_5, HOS_6, TOU_7, EXP_8, MKS_9, \ldots\ldots e_1)$

Acronyms:

NMI**=** Net marketing income

The explicit versions of the functional forms are stated as:

Linear form:

$$NMI = \beta_0 + \beta_1 AGE_1 + \beta_2 SEN_2 + \beta_3 MRS_3 + \beta_4 EDU_4 + \beta_5 SOF_5 + \beta_6 HOS_6 + \beta_7 TOU_7 + + \beta 8 EXP8_{+} + \beta_9\ MKC_9 + e_1$$

Semi Log form

$$NMISN = \beta_0 + \beta_1 \log AGE_1 + \beta_2 \log SEN_2 + \beta_3 \log MRS_3 + \beta_4 EDU_4 + \beta_5 SOF_5 + \beta_6 HOS_6 + \beta_7 TOU_7 + \beta_8 EXP_8 + \beta_9 MKC_9 + e_1$$

Double Log form:

$$\text{Log NMISN} = \beta_0 + \beta_1 \log\ AGE_1 + \beta_2 \log SEN_2 + \beta_3 \log MRS_3 + \beta_4 \log EDU_4 + \beta_5 \log SOF_5 + \beta_6 \log HOS_6 + \beta_7 \log TOU_7 + + \beta\ 8 \log EXP8 + \beta \log MKC_9 + e_1$$

Exponential form:

$$\text{Log NMISN} = \beta_0 + \beta_1 AGE_1 + \beta_2 SEN_2 + \beta_3 MRS_3 + \beta_4 EDU_4 + \beta_5 SOF_5 + \beta_6 HOS_6 + \beta_7 TOU_7 + \beta_8 EXP_8 + \beta_9 MKC_9 + + e_{1.}$$

Constraints to mobile food vendor marketing

Where: RII = $\frac{\Sigma W}{A*N}$

Where:

RII = Relative importance index
W = Weighting given to each factor by the marketers (ranging from 1-4), A = Is the highest weight,
N = Is the total number of marketers.
To make inferential statement, the mean score will be compared with the critical mean, 2

RESULTS AND DISCUSSION

Socioeconomic Characteristics of mobile food vending

Socioeconomic characteristics of mobile food vending is presented in Table 1. The Table indicates that majority of the marketers are within the age limit of 48.33%. This implies that the marketers are middle aged and relatively young people. This is in tandem with Isibor and Nkamigbo (2023) who reported that fresh pepper marketers were relatively young and energetic marketers.The finding on gender reveals that female 81.66% are more in mobile food vending. This implies that the enterprise is gender based in the study area. This is in agreement with Nkamigbo, Isibor, Obiekwe and Udemba (2023) who reported gender sensitive in garden egg fruits marketing in their study area. This varies with the report of Ekeke, Isibor and Nkamigbo

(2021) who reported male dominance in socioeconomic determinants of farmers using social network in advancing agribusiness in Anambra State. Findings from educational status revealed that majority of the marketers had one level of education or other thus making the study area a very vibrant economic hub center for business activity. Majority of the marketers (89%) had spent 7-12 years in school , thus they can easily read and write and can also adapt to changes in marketing processes. The result of marital status revealed that majority of the marketers 65% were married. This gives the married an edge as their children are mostly used in advancing the course of their enterprise. This is in agreement with Isibor, Nkamigbo and Ekeke (2021). From the result majority of the marketers kick started their enterprise with personal savings 56.65% because a little amount of money can bring one into hawking or selling on a spot or combined, only few kick start their enterprise with help from friends and relative 32.50%. The result revealed a household size of 5-8 persons living and eating from same source had a percentage of 45.00%. Majority of the marketers 90.08% belongs to their trade union (Isusu union) where they practice Isusu for their personal welfare and interest. This according to them serves as an umbrella, protection for their members and also as a welfare to carter for their own in case of any eventuality. Marketing experience revealed that 62.4% of the vendors have spent between 6-10 years in the enterprise. This proves that many who entered the enterprise finds it difficult to stay away from it. The monthly income as reveals that those who make between ₦20,000.00-80,000.00 had a percentage of 87.5%.

Table 1: Socioeconomic characteristics of mobile food vendors marketers

VARIABLES		FREQUE+NCY	PERCENTAGES
Age	20-29	07	5.80
	30-39	13	10.83
	40-49	58	48.33
	50-59	27	22.50
	60 and above	15	12.5
	Total	120	100
Gender	Male	22	18.33
	Female	98	81.66
	Total	120	100
Marital Status	Single	31	25.83
	Married	78	65.00
	Widow/Divorced	11	9.166
	Total	120	100
Educational Status	0-6	22	18.33
	7-12	89	74.16
	13-18	09	7.50
	Total	120	100
Source of Finance	Personal savings	68	56.66
	Friends and relatives	39	32.50
	Cooperatives/Isusu	13	10.83
	Banks		-
	Total	120	100
Household Size	1-4	47	39.16
	5-8	54	45.00
	9 and above	19	15.83
	Total	100	100
Trade Union	Member	109	90.8
	Non Member	11	9.16
	Total	120	100
Market Experience	1-5	45	37.5
	6-10	75	62.4
	10 and Above		
	Total	120	100
Monthly income	20,000- 80,0000	105	87.5
	80,000 and above	15	12.4
	Total	120	100

Source, field survey, 2023.

Various mobile food vending prevalence in the study area

Various mobile food vending prevalence in the study area is shown in Table 2. From the result, Abacha vendors had 25.83% which stands to be the highest mobile vending in the study area. This is a result of the nature of the food as many of the sellers hawk the produce every where. This is is followed by those who sell swallow of all type 24.17% . Most of these swallow vendors sells in the afternoon and the study prefers it and are readily available to patronize them. The rice and beans vendors as it is popularly called with ofe akwu and or stew is 24%. They are ever ready both in the morning, afternoon and evening. Others were bread fruits which people believe is big man's food 15.83% and agadi with pepper soup (5.83%).

Table 2: Various mobile food vending prevalence in the study area.

VARIABLES	FREQUENCY (F)	PERCENTAGES (%)
Beans/rice and stew or ofe akwu	24	20.00
Swallow (Akpu/semo/garri) and soup	29	24.17
Bread fruits (Ukwa)	19	15.83
Abacha	31	25.83
Yam porridge	10	8.30
Agaidi and pepper soup	07	5.83
Total	120	100

Field survey, 2023.

Estimated monthly profitability of mobile food vendors marketing

The enterprise budgeting analysis was used to estimate the monthly profitability of mobile food vending marketing in the study area as shown in Table 3. 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) and Net Return on Investment (NROI) is presented in Table 4.3. It could be seen from that out of the total cost of ₦5,272,110.00 spent by the marketers, purchases constituted 80.60% while the least expenses was off loading 2.1%. This is in agreement with Nkamigbo, Isibor, Ositanwosu and Obiajulu (2023) who reported that purchase of stock is the most important cost in sweet potato marketing in their study area. From the above stock purchase is the most important cost in the enterprise of mobile food vending while off loading is the least cost spent by the marketers.

On profitability of mobile food vending , after spending a total variable cost ₦4,674, 855. 00 and a total cost of ₦5,272,110.00 the marketers realized the sum of ₦6,890,000.00. This transaction generated a gross margin of ₦2,215,145.00, net marketing income of ₦1,647,890.00 and net return on investment of 0.76. The implication of the net return on investment is that the marketers return 76 kobo for every 1 Naira invested in the business. Overall, the profitability indicators (gross margin, net marketing income and net return on investment) showed that mobile food vending marketing is a profitable venture in the study area.

Influence of socioeconomic characteristics on net marketing income of mobile food vending

Table 4 shows the outputs of the four functional forms of regression model for predators of mobile food vending marketing. The result indicated that output of the Linear form gave the best result in terms of number of significant predictors, signs and sizes of predictors as well as the values of F-statistic, R^2, R^2 Adjusted and was chosen as the lead equation. Out of the nine predictors included in the model, only four were significant namely gender, household, source of finance and marketing experience others were not significant. The coefficient of gender had positive coefficient but negative significant effect on the net marketing income at 10% level of probability. This implies that gender plays a role in mobile food vending marketing with a higher presence of female marketers dominating the market. It is considered by most people that mobile food vending is mainly for female folks who derives joy in the enterprise and it readily serves as a means of survival welfare for their family.

Table 3: Estimated monthly profitability of mobile food vendors marketing

VARIABLE	Frequency	Percentage %
TOTAL REVENUE (TR)	6,890,000.00	
VARIABLE COST (VC)		
Purchase of various food items	3, 768,125.00	80.60
Transportation	209,500.00	4.48
Loading	198,000.00	4.23
Off-loading	101,230.00	2.1
Miscellaneous costs (water, nylon bag, recharge card, tarpaulin)	398,000.00	8.51
TOTAL VARIABLE COST (TVC)	4,674, 855. 00	100.00
FIXED COST (FC)		
Monthly shop rent	189,750.00	33.45
Ground levy	256,985.00	45.30
Depreciation on equipment (plates, spoons, fork, tray, bowl, greater, pots, kettles, cooking utensils)	68,960.00	12.15
Interest on loan	51,560.00	9.08
TOTAL FIXED COST (TFC)	567,255	100
TOTAL COST TC=TVC+TFC	5,272,110.00	
GROSS MARGIN: TR-TVC	2,215,145.00	
Net marketing income NMI: GM-TFC	1,647,890.00	
Return on investment: TR/TC	1.30	
Net return on investment NMI/TC	0.31	
Gross ratio: TC/TR	0.76	
Marketing efficiency: TC/TR*100/1	76.51	

Source, Field survey, 2023.

The coefficient of household size was positively related to the net marketing income and had a significant effect at 10% level of probability. This suggests that as the vendors household increases, their income from mobile food vending sales also increases. The coefficient of marital status was positively related to the net marketing income and had a significant effect at 5% level of probability. This implies that the family members will serve as a tool of improvement and advancement for the enterprise. The coefficient of marketing experience was positively related to the net marketing income and had a significant effect at 1% level of probability.

Table 4: Influence of socioeconomic characteristics on net marketing income of mobile food vending

Predictor	**Double log**	**Semi log**	**Exponential**	**Linear**
CONSTANT	-11.562 (0.000)	-2170(0.000)	2.01(0.000)	7.62(0.63)
AGE	0.10 (0.01)*	0.17(0.76)	-0.047(0.11)	1.64(0.06)
GEN	-0.01 (0.08)	-2.65(0.50)	0.03(1.61)*	-0.61(0.67)*
MRS	0.001(0.54)	11.23(0.04)*	0.02(1.45)	5.52(0.02)
EDU	0.06(0.08)*	12.32(0.08)	0.04(0.23)	7.65(0.12)
SOF	0.06(0.05)	1.11(0.67)	1.01(0.22)	5.49(0.38)***
HOS	-0.01(0.32)	0.000567(0.09)	0.04(0.17)	-164(0.06)*
TOU	0.011(0.32)	5.02(0.02)***	0.003(0.37)**	0.007965(1.43)
EXP	0.03(0.28)	0.023(0.42)	0.15(1.97)	1011(1.11)**
MKS	9.36 (0.000)	4.123(0.43)*	-4.23(0.45)	0.00064(0.75)
R^2	76.0	59.0	69.0	71.0
ADJ. R^2	0.7823	0.71	0.67	0.69
ROOT	43.69	41.90	30.09	33.98

Key Note: * = significant at p<0.10, **= significant at p<0.05, *** = significant at p<0.01. Figures in ( ) are T ratios. Source, field survey, 2023.

Constraints to mobile food vendor Marketing

The constraints associated with mobile food vending in the study area were shown in Table 5. The findings show that patronage by low and average people was perceived as the most serious challenge in mobile food vending in the study area. This is an indication that most well to do people feels that stopping to buy food from from these vendors reduces their personality and the way people view them. Another major constraints associated with the enterprise is price fluctuation. This has adversely affected their bossiness as the prices of products always varies and the prices of the mobile food vending keep changing. The change in price affects the common man who has budgeted the amount to spend on feeding knowing fully well that the vendors are always cheaper than others. Sit at home palaver is becoming another challenge these vendors are experiencing. Most of the vendors depends on the daily income generated from the enterprise to take care of their home but when emergency sit at home occurs their home of survival that day is affected. Other constraints in the enterprise were high cost of transportation which is as a result of hike in pump price of petrol.. poor storage facility and bulkiness of food materials were not considered as a major constraints to the enterprise.

Table 5: Constraints to mobile food vendor Marketing

Constraint	Mean	Rank
High cost of transportation	2.50	5th
Sit at home palaver	2.90	3rd
Poor storage facility	2.20	6th
Price fluctuations	3.10	2nd
Inadequate capital	2.75	4th
Patronage by low and average people	3.45	1st
Bulkiness	2.00	7th

Source: Field Survey; 2023.

SUMMARY

Findings from socioeconomic characteristics shows that most of these mobile food uses wheelbarrow, bike, truck and or head to carry their product to sell to their customers. Some have a joint or sale out let where they occasional stay to sell. Findings on various mobile food vendors prevalence in the area showed that Abacha vendors had 31 (25.83%) which stands to be the highest mobile vending in the study area. Finding on profitability of mobile food vending shows that after spending a total variable cost ₦4,674, 855. 00 and a total cost of ₦5,272,110.00 the marketers realized the sum of ₦6,890,000.00. Overall, the profitability indicators (gross margin, net marketing income and net return on investment) showed that mobile food vending marketing is a profitable venture in the study area. Out of the nine predictors included in the model, only four were significant namely gender, household, source of finance and marketing experience others were not significant. Findings on constraints shows that patronage by low and average people was perceived as the most serious challenge in mobile food vending in the study area. This is an indication that most well to do people feels that stopping to buy food from from these vendors reduces their personality and the way people view them.

CONCLUSION

Mobile food vending given the positive values of gross margin, marketing efficiency and prevalence various route is a profitable enterprise. The level of profitability will increase if measures are taking to address the constraints identified in the study area.

RECOMMENDATION

i. Government and stake holders should encourage the vendors to register with ministry of environment who should monitor their activities to avoid food poisoning.

ii. Stakeholders should work together to reduce the hike in transportation enable these small businesses to thrive.

iii. Government should formulate a programs to train these vendor to come to world class vending business in food marketing

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