

Factors Influencing Households' Willingness to Pay for National Health Insurance Scheme (NHIS) in Osun State, Nigeria

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ABSTRACT Out-of-pocket finance of health care has constituted serious barrier to health service seeking behaviour in Nigeria. This study analyzed the factors influencing rural households' willingness to pay (WTP) for NHIS in Osun State. Data were collected from 208 respondents using the multi-stage sampling procedures. Data were analyzed with descriptive statistics and Probit regression. Results showed that majority of the respondents were either not falling sick or recording two time morbidity in three months. Malaria was the most common form of sickness with 25 percent and 36.32 percent not spending any amount on households' health. Also, 49.10 percent were aware of the scheme and 63.21 percent expected the scheme to meet their households' health services needs. Willingness to pay decreased significantly with household heads' age and frequency of falling sick ($p < 0.10$) and increased significantly with awareness, expected workability and households' preference for pre-paid system ($p < 0.05$). It was recommended that more awareness about the scheme should be created in rural areas.

INTRODUCTION

Health issues in Nigeria are paramount on the concurrent legislative list of the Federal Constitution. Hence, the absolute responsibilities for it fall on the federal, state and local governments (CBN 2000). The first national health policy was adopted in 1985, with a goal to bring about a comprehensive health care system that is based on primary health care, which is extensive, preventive, protective, restorative, rehabilitative and affordable to every citizen. It was also to serve as a strategy to achieve health for all by the year 2000. Also, various strategies have been adopted to improve the health status of the people, particularly with respect to reducing infant and maternal mortality. In 1977, the Expanded Programme on Immunization (EPI) was implemented as a major component of primary health programme (Akande and Bello 2001).

However, health service delivery worsened in the early 1990s due to lack of appropriate financial commitment that resulted in shortage of drugs, vaccines and other essential medical equipments. The government had initially provided "Free health care" for its citizens funded by its earnings from oil exports and general tax revenue. However, the global slump in oil prices in the 1980s greatly affected Nigeria's major source of income. Government could therefore no longer afford to provide free health care for its citizens. They however, subsequently introduced several cost recovery mechanism like user

charges and drugs revolving funds. Furthermore, the introduction of the Structural Adjustment Programme in 1986 adversely affected the health sector allocation (Akande et al. 2011).

In government's quest to ensure that every Nigerian has access to good health care services, the National Health Insurance Scheme (NHIS) has been proposed. NHIS has been on the drawing board since 1962 (Akande et al. 2011). Under this program, workers in the private and public sectors are to contribute 5 percent of their basic salary, with counterpart contribution of another 5 percent by the employers. With the renewed interest and efforts at full commencement of the scheme, this study focused on analyzing the willingness of the households to participate in the proposed scheme. This is to ensure that policy makers have some foresights into the potentials of the proposed scheme in meeting the health needs of the people.

Although the Nigeria's Act 35 of 1999 established the National Health Insurance Scheme (NHIS) in order to improve access to health facilities by all Nigerians, the proposal was finally signed into Law in 2005. This became important because of the dilapidating state of many health infrastructure and decline in the general state of people's health (high child and maternal mortality rates, high prevalence of malaria, HIV/AIDS and other deadly diseases, poor health outcomes of under-five children and low life expectancy). The scheme provides social security that guarantees timely provision of

needed health services to persons who pay some token contributions at regular intervals. To ensure adequate coverage, the scheme provides programs covering the public and private sector employees, urban self-employed, rural communities, children under-five, permanently disabled persons and prison inmates (Okonkwo 2001).

Concern for having the NHIS became most paramount as the Millennium Development Goals (MDGs) were being accepted as framework for pursuing the Nigeria's economic growth and development objectives. Specifically, Nigeria faces the challenges of reducing poverty to improve people's health, improve on some major health indicators (child mortality rate, maternal mortality rate, expected life span, HIV prevalence etc.). It was understood that responsibility for having access to sound health care is a joint one that must be borne by both the government and the people. Understanding the poor condition of health seeking behaviour of rural people made the NHIS to have a rural component. However, because of several socio-economic constraints, it is not sure whether this program will have strong footing in rural areas. This is important because a minimum of 500 beneficiaries are expected before a users' group can be said to have been formed. This study therefore attempts to evaluate their level of awareness and willingness to pay for the Scheme. This will inform policy makers about the steps that can be taken to ensure success of the program in rural areas in Osun State.

Objectives of the Study

The main objective of this study was to examine the household's willingness to pay for National Health Insurance Scheme (NHIS). The following specific objectives are to:

- i. Determine households' use of orthodox medicine in relation to their socio-economic characteristics.
- ii. Examine households' perception of the functionality of the existing health care facilities.
- iii. Determine the awareness level of households on NHIS.
- iv. Determine the factors responsible for households willingness to pay for the Scheme.

MATERIALS AND METHODS

Study Area, Data Collection and Sampling Procedures

The study was carried out in Osun State, Nigeria. Osun State came into existence on 27th August, 1991 with the creation of nine new states by the then Military Government. Osun State shares the distinctive high urbanization attributes of most parts of Yoruba land. The official 2006 population for the State was 3,416,959 (National Bureau of Statistics 2009). Some of the sizeable towns in Osun State are Ilesha, Iwo, Ede, Ile-Ife, Ikirun, Ila Orangun, Ejigbo and Osogbo (the state capital). For administrative convenience, Osun State is divided into six zones: Osogbo, Ede, Iwo, Ikirun, Ilesha and Ile -Ife. The following are the thirty local government areas (LGAs) in the State: Aiye-dade, Aiyedire, Atakumosa East, Atakumosa West, Boluwaduro, Boripe, Ede South, Ede North, Egbedore, Ejigbo, Ifelodun, Ife Central, Ife East, Ife North, Ife South, Ila, Ilesha East, Ilesha West, Irewole, Irepodun, Isokan, Iwo, Obokun, Odo Otin, Olaoluwa, Olorunda, Oriade, Orolu and Osogbo.

Data were collected in 2007 using the multi-stage random sampling method. At the first stage, two (2) of the zones were randomly selected. The second stage involved selection of one (1) local government areas each from the selected zones. The third stage involved random selection of 5 villages from each of the local government areas. Lastly, households were interviewed after seeking their consents. A total of 212 rural households were sampled, but 208 were with complete information that could be used for the analysis. Data were collected on the socio-economic characteristics of the households, issues bordering on their health, awareness about NHIS and their willingness to pay.

Probit Regression Analysis

Probit regression was used to analyze the factors influencing households' willingness to pay for the scheme. The model uses the cumulative normal distribution and can be presented as:

$$y_i = b_i + a_i \sum_{i=1}^{11} X_i + e_i$$

In this model, the willingness to pay for NHIS is the dependent variable (y_i) with value of 1 if

willing to pay and 0 otherwise. Independent variables were farming occupation (yes =1, 0 otherwise), sex (yes =1, 0 otherwise), age (years), years of education, household size, total earnings (₦), frequency of falling sick (number per month), malaria (yes =1, 0 otherwise), hypertension (yes =1, 0 otherwise), treatment cost (₦), aware (yes =1, 0 otherwise), affordable (yes =1, 0 otherwise), workable (yes =1, 0 otherwise), proper coverage (yes =1, 0 otherwise), cost okay (yes =1, 0 otherwise), prefer insurance (yes =1, 0 otherwise) and visit hospital often (yes =1, 0 otherwise).

RESULTS AND DISCUSSION

Description of Households' Socio-economic Characteristics

Table 1 reveals that households that were headed by males constitute 78.80 percent of the total respondents. Average year of education is 9.5, with standard deviation of 6.05. The table further reveals that about 11.10 percent of the household heads had no formal education, while those with primary education constitute 21.60 percent. Average age of household heads is 47.58 years with standard deviation of 12.73. This shows that majority were still in their productive age. Specifically, the table shows that 58.7 percent falls below 50 years, while 23.00 percent was sixty years old or above. The data also showed that average household size is 5.18, with standard deviation of 3.73. Also, 51.40 percent of the households have between 1 and 4 members, while 13 percent have more than eight members. It should be noted that the highest household size is 30, giving a range of 29 for the whole respondents. Civil servants constitute the largest proportion of the respondents with 39.40 percent, followed by farmers with 30.30 percent.

Nature of Morbidity and Health Expenditure Profiles

Table 2 shows the frequency of falling sick of the respondents in the past three months. It shows that 44.80 percent did not fall sick at all, while 30.70 percent fell sick once. The data suggested that majority of the respondents were either not falling sick or recording two time mor-

Table 1: Socio-economic characteristics of household heads

<i>Socio-economic group</i>	<i>Frequency</i>	<i>%</i>
<i>Sex of House Head</i>		
Male	164	78.8
Female	44	21.2
<i>Education</i>		
No formal education	23	11.1
Primary	45	21.6
Secondary	57	27.4
N.C.E	15	7.2
O.N.D	8	3.8
H.N.D	8	3.8
Degree	51	24.5
Quranic	1	0.5
<i>Age of Household Head</i>		
<30	14	6.7
30<40	44	21.2
40<50	64	30.8
50<60	38	18.3
60<70	34	16.3
>=70	14	6.7
<i>Household Size</i>		
1-2	52	25.0
3-4	55	26.4
5-6	48	23.1
7-8	26	12.5
>8	27	13.0
<i>Primary Occupation</i>		
Farming	63	30.3
Artisan	5	2.4
Technician	1	0.5
Trader	21	10.1
Pensioner	11	5.3
Civil servant	82	39.4
Drivers	5	2.4
Others	20	9.6

Source: Field Survey 2007

bidity. Rural people always have their immune systems being very strong having been exposed to several dirty environments as children. Also, morbidity can be seasonal or genetically explained. This goes beyond the scope of this study.

Table 2: Number of times households members were sick in past three months

<i>Sick time</i>	<i>Frequency</i>	<i>%</i>
None	95	44.8
1	65	30.7
2	32	15.1
3	12	5.7
4	3	1.4
5	3	1.4
6	1	0.5
10	1	0.5

Source: Field Survey 2007

Table 3 shows the nature of sickness that made households to visit hospitals in the past

three months. The data show that 25.00 percent went to receive treatment for malaria. Also, 18.40 went for medical check-up. This category constitutes those that are living with certain diseases that are manageable or requiring regular monitoring. Notable in this group are hypertension and diabetes. However, 10.38 percent actually went to receive treatment for abnormal blood pressure that could be hypertension or hypotension. Also, 8.49 percent were in hospital to be treated for injuries received from accidents.

Table 3: Nature of sicknesses reported by the households in the past three months

<i>Nature of sickness</i>	<i>Frequency</i>	<i>%</i>
Check up	39	18.40
Malaria	53	25.00
Blood pressure	22	10.38
Head ache	19	8.96
Dental problem	2	0.94
Eye injury	3	1.42
Diarrhea/Dysentery	11	5.19
Injury from accident	18	8.49
Stomach ache	5	2.36
Typhoid fever	5	2.36
Others	35	16.51

Source: Field Survey 2007

Table 4 shows the distribution of monthly expenditures on health. The results show that 36.32 percent indicated that they did not spend any amount on the health of their household members. However, the highest amount of ₦6000 and above was spent by 8.49 percent of the respondents. Also, a total of 39.62 percent of the households spent less than ₦3000 per month.

Table 4: Distribution of households' monthly health expenditure

<i>Expenditure groups (₦)</i>	<i>Frequency</i>	<i>%</i>
None	77	36.32
1<1000	34	16.04
1000<2000	36	16.98
2000<3000	14	6.60
3000<4000	13	6.13
4000<5000	3	1.42
5000<6000	17	8.02
>=6000	18	8.49

Source: Field Survey 2007

Awareness of NHIS and Preferences

The data showed that 49.10 percent of the respondents were aware of the scheme. How-

ever, their preferences for health insurance are presented in Table 5. The table reveals that 63.21 percent were of the opinion that the scheme has values to add to the health requirements of their families. Also, 59.43 percent noted that they could afford paying for the scheme. This implies that the monthly premium was not going to constitute barriers to participation. Also, 54.25 percent were of the opinion that the scheme can work under the Nigerian policy environment. This is an important issue because if people feel that such a scheme will be squandered by mechanisms that are within the government cycle, they will not be willing to get involved.

Table 5: Reasons for preference for health insurance

<i>Reasons</i>	<i>Frequency</i>	<i>%</i>
Programme has value	134	63.21
Can afford payment	126	59.43
Scheme workable	115	54.25
Visit hospital often	86	40.57
All members covered	115	54.25
Cost okay	94	44.34
Prepayment better	116	54.72
Out-of-pocket too expensive	108	50.94

Source: Field Survey 2007

Some households (4.57 percent) were willing to participate because they visit hospital often. To such households, it will be a lot of relieve as they will not be made to pay treatment cost out of their pockets. Also, the number of household members to be covered by the scheme is okay for 54.25 percent of the households. This is very pertinent because the scheme only takes care of the husband, wife and three of the children. Therefore, if a person is polygamous, there might be problems in deciding who to be included in the scheme. However, 44.34 percent noted that the premium amount is okay, while 54.72 percent submitted that prepayment is better than out-of-pocket payment system.

Table 6 shows the premiums that households preferred. It shows that majority of the households (74.52 percent) were willing to pay less than N200 per month. Only 2.40 percent were willing to pay the highest presented premium of N250<N300. Willingness to pay for the scheme was relatively high. This can be compared with about 7.00 percent that was found for a community based health insurance that was studied by Onwujekwe et al. (2010) in Anambra state, Nigeria.

Table 6: Households' preferred premium for health insurance

Premium amount (N)	Frequency	%
None	45	21.63
N50<N100	75	36.06
N100<N150	58	27.88
N150<N200	22	10.58
N200<N250	3	1.44
N250<N300	6	2.40
Total	208	100

Source: Field Survey 2007

Factors Influencing Willingness to Pay for NHIS

Table 7 shows the results of Probit regression. The model produced a good fit of the data with the Chi square value of the regression being statistically significant ($p < 0.01$). Also, out of the included variables, age has a negative sign and statistically significant ($p < 0.05$). This shows that aged farmers have significantly lower probability of subscribing to the scheme. This is expected because in rural areas, aged people may lack the motivation, education and financial backing to subscribe. Also, aged people are likely to have many wives and large family size that are not adequately catered for in the scheme. Similar findings have been reported by Masanjala and Phiri (undated) for Malawi, Lofgren et al. (2008) for Vietnam.

Table 7: Probit regression of the factors explaining willingness to pay for health insurance

Variable	Parameters	Std. Err.	z	P> z
Farming occupation	.4694033	.5229612	0.90	0.369
Sex	-.2603981	.3409524	-0.76	0.445
Age	-.0195248	.0099465	-1.96	0.050
Education	-.317298	.328272	-0.97	0.334
Household size	-.175441	.1697853	-1.03	0.301
Total earning	-1.03e-06	3.94e-06	-0.26	0.793
Sick frequency	-.756366	.4128996	-1.83	0.067
Malaria	.0015067	.3178395	0.00	0.996
Hypertension	.3148586	.4488934	0.70	0.483
Treatment cost	3.19e-06	.0000162	0.20	0.844
Aware	1.08607	.3121071	3.48	0.001
Affordable	-.2694287	.4309114	-0.63	0.532
Workable	.8030814	.3219603	2.49	0.013
Proper coverage	.5047599	.3660143	1.38	0.168
Cost okay	.2356255	.3813773	0.62	0.537
Prefer insurance	1.308616	.3552056	3.68	0.000
Visit hospital often	.112436	.3409992	0.33	0.742
Constant	.7255834	.5920508	1.23	0.220

Also, households with higher frequency of falling sick have significantly lower probability

of paying for the scheme ($p < 0.10$). This is also expected because those that were falling sick frequently were the aged people with regular needs of medical checkup and treatment. The fear of non-workability will make people in this category not to put their confidence in the scheme. Since they need health services regularly, it will be a bit riskier if the system fails after their subscription.

The results further reveal that awareness parameter is with positive sign and statistically significant ($p < 0.01$). This is expected because awareness implies having some knowledge of the scheme and its prospects. Also, those that perceived that the scheme was going to work well have significantly higher probability of paying. This is goes in line with expectation because policy discontinuity and corruption are the bane of health sector development in Nigeria.

CONCLUSION

Addressing the health needs of Nigerians is a paramount issue for ensuring sustainable development of the country. This becomes a critical issue due to low life expectancy and several health problems that often result into death due to inadequate health service delivery. The initiative by the government to set up NHIS is one of recent efforts at ensuring avoidance of catastrophic expenses. In the light of growing poverty and other social vices in Nigeria, it is expected that NHIS will have positive impacts on households' welfare by reducing financial burdens of disease morbidity.

RECOMMENDATIONS

This study revealed that in order to ensure that rural households benefit from the NHIS, there is the need for proper awareness creation. This can be addressed by local radio stations, traditional chiefs and other stakeholders (NGOs, FBOs). Also, there is the need to intensify efforts to ensure that there are adequate frameworks and infrastructure to make the scheme workable. It is important to stress that inadequacy of health infrastructures and personnel in rural areas will hinder them from fully benefiting. Because of their high fertility, the five person coverage proposed in the NHIS will not go well with rural people. There is therefore the

need to address coverage of the scheme issue as pertaining to people in rural areas. Also, the monthly premium should be made to be within what is affordable by the largely poor households in rural areas.

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