Out-Of-Pocket Health Expenditure, Health Insurance and Health Care Utilization in Nigeria

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ABSTRACT
This study examines the interaction effect of out-of-pocket health expenditure (OOPHE) and Health Insurance (HINS) on healthcare utilization in Nigeria with focus on Bayelsa State. Bayelsa State implemented her health insurance scheme in 2016 which effectively ensure the coexistence of a dual payment system for health care service, making it attractive for a study of this type. The study sampled 426 households in Bayelsa Central Senatorial District using cluster sampling technique. A logit model was estimated. The results revealed that, households with higher capacity to pay (CTP) and people with health insurance are more likely to utilize health care service. It was also revealed that households who perceived their health status to be good and those with more elderly people (60 years and above) are less likely to utilize health care but households with more children below age 15 are more likely to utilize health care. However, the interaction of HINS and OOPHE reduces the likelihood of healthcare utilization. The study concludes that households with health insurance who also pay out-of-pocket are less likely to utilize health care service compared to households with health insurance and higher CTP. These indicate the need for special privileges and care homes for the elderly and gradual phasing out of out-of-pocket expenditure as a payment system for health care in Bayelsa State.
KEYWORDS: *capacity-to-pay, health expenditure, health insurance, out-of-pocket health expenditure, logit model*

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I. INTRODUCTION

Heavy reliance on direct payment out-of-pocket for healthcare can influence healthcare utilization negatively, resulting in poor or worsened health conditions. However, with a properly implemented and managed third party prepayment arrangement like health insurance this trend could be reversed (Folland, Goodman and Stano, 2006). In a bid to improving healthcare utilization and health outcome various health policy measures have been designed and operated in Nigeria in general and Bayelsa State in particular, including the National Health Insurance Scheme (NHIS) and the Bayelsa Health Insurance Scheme (BHIS), respectively (see Federal Ministry of Health [FMoH], 2016; Etobe&Etobe, 2015; Federal Republic of Nigeria [FRN], 2014; National Population Commission [NPC], 2014; Onyedibe, Goyit&Nnadi, 2012; NHIS, 2009; FRN, 1999). Yet Nigeria's health outcomes are rated among the poorest in the world. People still spend significantly out-of-pocket to utilize healthcare (Etobe&Etobe, 2015).

An assessment of health indicators showed pressure on existing health infrastructure and personnel. Reports have also shown Nigeria's rate of infant and under-5 mortality to be 69 and 128 deaths per 1,000 live births, between 2008 and 2013, respectively (NPC, 2014), indicating that, a child in every 15 birthed in Nigeria dies before their first birthday, and one in every eight do not live to see their fifth birthdays (NPC, 2014). Births in Nigeria delivered in health facilities is a paltry 36% and only thirty-eight percent of deliveries are attended by a skilled birth assistant (NPC, 2014).

Furthermore, to achieve UHC, World Health Organization (2010) recommended that a country's Total Health Expenditure (THE) should be at least between 4% and 5% of GDP; out-of-pocket health expenditure (OOPHE) should be at most between 30% and 40% of THE, and at least 90% of the country's population should be covered by risk-pooling pre-payment schemes. But Nigeria's government health expenditure is abysmal. Her THE hovered between 2% and 4% as share of GDP with values being consistently less than 4% within the period 2000 – 2017. During this period government health expenditure reached 9% of total government expenditure, though, it hardly went above 1.5% of GDP in every other year. Moreover, Nigeria's THE has been dominated by private expenditure with government's share reaching 36.77% in 2008. Also, Private Health Expenditure (PHE) is dominated by OOPHE. Between 1995 and 2017 OOPHE was consistently above 90% of
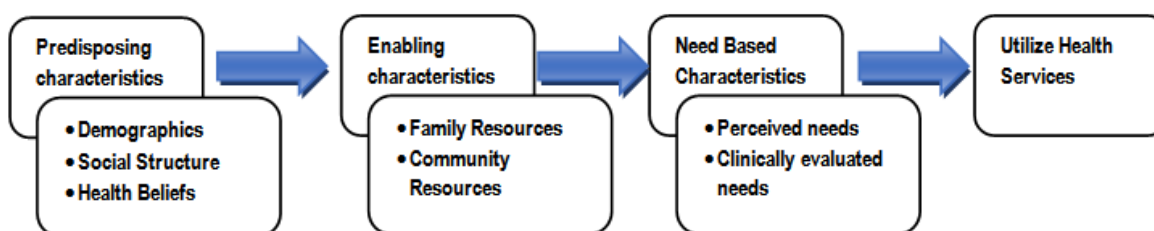
PHE and has never fallen below 60% of THE, which is higher than the 30% to 40% maximum threshold set by WHO (Global Health Expenditure Database, 2016 & 2018). This has attracted attention from scholars (see Karimo and Akekere, 2018; Okumoko and Karimo, 2018; Edeme, Emecheta and Omeje, 2017; Karimo, Krokeyi and Ekainsai, 2017a; Karimo, Krokeyi and Ekainsai, 2017b; Mathew, Adegboye and Fasina, 2014; Ilesanmi, Adebiyi and Fatiregun, 2014; Ononokpono and Odimegwu, 2014; Riman and Akpan, 2012), who have investigated the catastrophe and fairness of OOPHE and in some instances, the impact of OOPHE on healthcare utilization and health outcomes, respectively.

However, there is dearth in the literature of empirical studies on the interaction effect of OOPHE and health Insurance on healthcare utilization. Where scholars have investigated the impact of a payment system focus has been either on health insurance or direct OOPHE without recourse to the interaction effect of the coexistence of both payment systems (see Si, Chen& Palmer, 2017;Chomi, Mujinja, Enemark, Hansenand&Kiwara, 2014; Li *et al*, 2014; Zhou, Zhu, Zhou, Li, Gao, & Chen, 2014; Zhou, *et al*, 2014;Atagubaa&Goudgeb, 2012; Saksena, Xu, Elovainio& Perrot, 2010; Kruk, Galea, Prescott & Freedman, 2007; Xu, Carrin, Phuong, Long, Bayarsaikhan& Aguilar, 2006). The coexistence of out-of-pocket expenditure and health insurance in Bayelsa State makes it strategic for this study.This study examined the interaction effect of OOPHE and health insurance (HINS) on healthcare utilization among households in Bayelsa State of Nigeria (BYSN).

II. LITERATURE REVIEW

2.1 Theoretical Literature

The concept of healthcare utilization is not new. Several scholars have tried to explain it over time and space. One of the ground-breaking studies in the literature is traceable to Parsons (1951). In his Sick-Role theory Parsons (1951) identify healthcare utilization and adherence to medication as prerequisites (determinants) for recovery from illness and formed the basis for other theories of health behaviour. Other scholars who have tried to explain the drivers of healthcare utilization include Mechanic (1978), Suchman (1965) Rosenstock, Strecher and Becker (1994), and Andersen (1968). However, this study anchors on the Andersen (1968) Linear relationship model of health service utilization. The Andersen (1968) model explains how the predisposing, enabling and need factors determine whether a household utilizes healthcare service when a member becomes ill. The Andersen (1968) model is presented in Figure 1.

Figure 1: Andersen's Behavioral Model of Health Services Utilization
Source: Andersen, (1968). *A behavioral Model of Families' Use of Health Services*.

The Predisposing characteristics represent the natural propensity for healthcare utilization. Andersen (1968) asserts that an individual's likelihood to use healthcare is determined by demographics, position within the social structure, and the perceived benefits from utilizing healthcare. Those who believe that health services are efficacious for treatment tend to utilize services. Wolinsky (1988) listed the enabling characteristics to include family and community resources. Whereas family resources include economic status and location of residence, access to health facilities and assistance from person within the community constitutes community resources. The need characteristics are the perceived need for healthcare, which could base on the individual's social or clinically evaluated perception of need (Wolinsky, 1988).

2.2 Empirical Literature

In recent times various studies have been carried out to examine the determinants of healthcare utilization with varying results. Saksena, *et al* (2010), revealed cost differential is not the reason for choosing health provider in the 39 countries studied since with higher prices private facilities enjoyed more patronage relative to public facilities but that perceived quality, responsiveness and geographical access are the critical determining factors. Kruk, Galea, Prescott and Freedman (2007) reveal that the share of government health expenditure in total health expenditure has a significant relationship with both Caesarean Section (CS)and skilled birth attendants (SBA) utilization but the relationship with antenatal care utilization was statistically not significant in the 42 low income countries studied. Shen (2013) showed that health insurance increased expenditures in the US. For Portugal, Salvado (2008) show that people with chronic health conditions utilized

health services more, while personal health habits showed mixed effects and that private insurance and subsystems utilization were other factors that increased healthcare utilization. Dias, Severo and Barros (2008) show that country of origin, legal status, and length of stay significantly impact on healthcare utilization among immigrant men at the Immigrant Support Centre in Lisbon, Portugal and that it is country of origin and length of stay that impacts on healthcare utilization among immigrant women.

Geitona, Zavras and Kyriopoulos (2007) revealed that healthcare utilization in Greece is determined by health status and not other socioeconomic variables. The study of Alemi, Stempel, Koga, Smith, Danis, Baek and Montgomery (2017) reveal that Afghan migrants in Istanbul whose families are resident in Turkey and having higher income are more likely to visit outpatient specialists. They further showed that the impact of illness-related need factors on healthcare utilization was statistically not significant. Difficulties in asylum increased the probability of visiting primary healthcare physician, utilizing outpatient care and medical prescriptions (Alemi, *et al* 2017).Xu, Carrin, Phuong, Long, Bayarsaikhan and Aguilar (2006) revealed that public health facility utilization increased with social health insurance coverage but not private health facility utilization in Vietnam. Porto, Filho, Wang, Malik, Takaoka, Viana and Andrade (2015)reveals that income inequality, violence, and median income of place of residence were not important correlates of healthcare utilization in the Sao Paulo metropolitan area, Brazil but attaining higher education and having health insurance were. Baker and Liu (2006) show that healthcare utilization is mainly explained by economic status related factors and distance to clinic. Baker and Liu (2006) also showed home territory related variables to be significant determinants of the spatial variations in the utilization of health facility in Honduras. Zhou, Zhu, Zhou, Li, Gao, and Chen (2014) reveal that the Urban Employee Basic Medical Insurance Scheme (UEBMIS) increases inequity in outpatient care utilization in favour of the rich in the Shaanxi Province of China but Urban Resident Basic Medical Insurance Scheme (URBMIS) was pro-poor. However, both schemes had pro-poor effects on inpatient care utilisation (Zhou, *et al,* 2014). Atagubaa and Goudgeb (2012) find private health insurance coverage to have significantly increased private healthcare service utilization with no significant impact on public service utilization in South Africa and OOPHE did not reduce for people covered with private health insurance. Rahman, (2009)find that mother's educational attainment, mother's age during delivery, residence, access to communication device(s), the presence of a Non-Governmental Organization, and socioeconomic status had positive impact on antenatal, delivery and postnatal care utilization in Bangladesh. Chomi, Mujinja, Enemark, Hansenand Kiwara (2014) showed that health insurance increased the likelihood that an individual seeks healthcare and reduced the time spent on queue. Harvey (2014) show the major determinants of healthcare utilization in Ghana to include individual's age, sex, social status, marital status, educational attainment, religion and ethnicity. Other important determinants were family size, employment status, and occupation (Harvey, 2014). Saeed, Oduro, Ebenezer and Zhao (2012) revealed that adjusting for co-morbidity neutralized the effect of socio-economic variables on orthodox medical service utilization in Ghana. Exavery (2010) reveals that, the major determinants of healthcare utilization among elderly people in Ghana are need factors: cognitive impairment, having at least one chronic medical condition, self- perceived health, and not being able to care for one's self. The other vital factor was age group. Lépine and Nestour (2013)reveal that defying poverty, 84% of the households sought treatment from qualified health providers and asserted that this is attributable to the availability of quality PHC services at low prices in Ghana. Riman and Akpan (2012) find that women who spend more out-of-pocket relatively experienced more infant mortality and morbidity. Riman and Akpan further argued that the disproportionate distribution of health facilities in favour of urban centers contributed to the poor healthcare utilization in Cross-River State. Ononokpono and Odimegwu (2014) reveals that the likelihood of delivering in health facility was relatively less among women in Northern Nigeria and that residing in a community with more educated women increased the odds of delivering in health facility.

It can be deduced from the literature that health insurance has mixed impact on healthcare utilization and having to pay out-of-pocket reduces it. The avalanche of studies in the literature focused more on the impact of health insurance and out-of-pocket health expenditure on healthcare utilization, respectively. There is hardly a study considering the interaction effect of the two on healthcare utilization.

Also, several methods have been used in the literature including descriptive statistics, propensity score matching and the logit family of models applied mostly to micro level data from surveys with focus on specific units, countries and in some cases cross-country (see Saksena*et al* 2010; Kruk *et al* 2007; Dias, Severo and Barros, 2008; Geitona, Zavras and Kyriopoulos. 2007; Porto, *et al* 2015; Rahman, 2009; Chomi, *et al* 2014; Harvey, 2014; Alemi, *et al,* 2017; Xu, *et al,* 2006; Saeed, Oduro, Ebenezer and Zhao, 2012; Exavery, 2010; Ononokpono and Odimegwu, 2014; Zhou, *et al* 2014; Atagubaa and Goudgeb, 2012).

III. METHODOLOGY

3.1 Research Design

This study adopts cross-sectional survey research design. The cross-sectional survey is progressively fitting since the attention is on making derivations about a population at a point in time (see Bethlehem, 1999 and Lavrakas, 2008).

This investigation took place in Nigeria with specific focus on Baylesa State. It has a population of 2,278000 persons (National Bureau of Statistics, 2016 estimate) distributed across eight Local Government Areas (LGAs) in three Senatorial Districts. Applying the Yamane (1967) statistical formula for sample size determination and an allowance of 30% of unforeseen circumstances this study arrived at a sample size of five hundred and twenty-two (522). The Yamane (1967) formula is stated in eqn (1) (see Israel, 2003).

$$n = \frac{N}{1 + N(e)^2} \quad . \quad . \quad . \quad (1)$$

where n denotes sample size, N population size, and e denotes level of precision. Assuming a confidence level of 95% (that is, 5% level of significance). The cluster sampling technique was used, and Bayelsa Central Senatorial district was selected (see Ogbeide, 1997).

3.2 Model Specification

This study used logit models. The Logit model is a member of the class of probability models. It fits the probability of event occurrence versus the probability of nonoccurrence. The logit regression model is chosen for technical reasons.

First, the estimation technique underlying Liniear Probability Models (LPM) is the Least Squares (LS) technique. It assumes the error term to be normally distributed. This is not tenable when the repose variable in a regression model is dichotomous since like the dependent variable, Y_i the error term also takes only two values. Even if serial correlation does not present a problem one cannot guarantee that the disturbances in LPM are homoscedastic. Further, since the conditional expectation of Y_i on the correlate, X_i, $E(Y_i|X_i)$ in the LPM measures the probability of event Y occurring conditional on X, its values must then lie between 0 and 1. Although this is true a priori, $\hat{Y}$, the estimators of $E(Y_i|X_i)$, fulfilling this restriction cannot be guaranteed in practice. This is the crux of the problem with using the LPM. However, the logit regression model resolves all of these problems (Gujarati & Porter, 2009).The generic form of the model is stated in eqn. (2)

$$\log\left[\frac{P(y=1)}{1 - P(y=1)}\right] = \sum_{k=1}^{K} \beta_k x_k \quad . \quad . \quad . \quad (2)$$

Where: P(y = 1) measures the probability of healthcare utilization; 1- P(y = 1) measures the probability of non-utilization; $\beta_k's$ are parameters; and $x_k's$ are explanatory variables. The left-hand-side of eqn. (2) measures the log of odds of event occurrence. Because linear, additive effects of parameters on the logit are not so intuitively appealing, taking the antilogarithm of eqn. (2) is relevant, and it yields:

$$\frac{Prob(y=1)}{1 - Prob(y=1)} = e^{\eta} = e^{\Sigma_{k=1}^{K}\beta_k x_k} = \prod_{k=1}^{K} e^{\beta_k x_k} \quad . \quad . \quad . \quad (3)$$

The left-hand side of eqn. (3) is odds ratio, and the right-hand side measures the marginal effect of x_k on the odds ratio as measured by e^{β_k}. Therefore, the concept of odds ratio is central in logit models (see Aldrich & Nelson, 1984; Liao, 1992).

To analyze the interaction effect of OOPHE and HINS on healthcare utilization eqn. (4) is relevant.

$$\text{Log}\left[\frac{P(HFU_i = 1)}{1 - P(HFU_i = 1)}\right]$$
$$= \alpha_0 + \alpha_1 ctp_i + \alpha_2 hins_i + \alpha_3 oophe * hins + \alpha_4 age_i + \alpha_5 edu + \alpha_6 ocp + \alpha_7 res_i$$
$$+ \alpha_8 srh_i + \alpha_9 age60 + \alpha_{10} age15_i + \alpha_{11} age15 - 60 + \alpha_{12} schdo + \alpha_{13} dist_i$$
$$+ \varepsilon_{1i} \quad . \quad . \quad . \quad (4)$$

where: HFU$_i$=1 if at least a household member utilized healthcare service in the last one year preceding the survey and 0 otherwise; ctp is capacity to pay; oophe is out-of-pocket health expenditure; hins is health insurance. hins equals 1 if household subscribes to a health insurance scheme and 0 otherwise; age is age of household head at last birth day; edu is education attainment of household head measured in terms of years of schooling; ocp is occupation of household head; res is sector of residence: 1 if household resides in rural area and 0 otherwise; srh is self-reported health status. srhequals 1 if household reports that a member was sick in the last year and 0 otherwise; age60$_i$ is number of people aged 60 and above living in household; age15$_i$ is number of persons between ages zero and fifteen years residing in household; agr15 - 60 is number of persons between ages 15 and 60 residing in household; dist$_i$ is distance of household from the nearest health facility and; Log is logarithm.

The model assumes that a sequence of conditions contributes to the use of health service by a household. Healthcare utilization is dependent on: (1) the predisposition of the individual to use services; (2) his ability to secure services; (3) his illness level, which are referred to as predisposing, enabling and need factors, respectively.

IV. RESULTS AND DISCUSSION

The research instrument (questionnaire) for this study was administered on five hundred and twenty-two (522) households but analysis was based 426 (81.6%) households who fill-in and returned the questionnaire (see Table I).The population is young as indicated by the age distribution of household members as indicated in Table II. The age distribution of household heads centered on a mean of 45 years, which coincided with the median age with a standard deviation of 11.43 years. The statistics showed a mean household size of 5.89 with an average of 2.41 persons below age 15, 0.35 aged 60 and above and 3.13 aged between 15 and 60. This means that there are 589 persons residing in every one hundred households, 241 are less than age 15, 313 are between ages 15 and 60, and 35 are aged 60 and above. This could have some level of influence on healthcare utilization and out of pocket health expenditure as the large number below age 15 may have special needs if left unattended to, could impair their functioning in future. The mean health insurance expenditure of N2410.70 is very meager compared to the mean OOPHE of N25142 which indicates that OOPHE dominates health expenditure.

Table I: Questionnaire Administered and Retrieved

Local Government Area	Questionnaire		
	Administered (%)	Retrieved (%)	Not retrieved (%)
Kolokuma/Opokuma	174 (33.33)	139 (26.6)	35 (6.7)
Southern Ijaw	174 (33.33)	141 (27.0)	33 (6.3)
Yenagoa	174 (33.33)	146 (28.0)	28 (5.4)
Total	522 (100)	426 (81.6)	96 (18.4)

Source: Field work July, 2019

Table II: Descriptive Statistics

Variable	Mean	Median	Std. deviation	Variance	Skewness	Kurtosis
Age	44.99	45	11.43	130.75	0.50	2.98
Age15	2.41	2	2.03	4.11	1.45	5.81
Age60	0.35	0	0.63	0.39	1.73	5.44
Age15_60	3.13	2	2.29	5.26	2.30	11.54
Hhsize	5.89	5	3.70	13.71	2.17	1.77
Physically challenged	0.26	0	0.85	0.73	5.34	37.70
HINSEXP	2410.70	0	7485.28	5.60e+07	5.05	30.05
OOPHE	25142	14175	46719.51	2.18e+09	5.35	38.65

Source: Author's Computation from Field Data July, 2019

The estimated logit results for the interaction effect of OOPHE and HINS on health facility utilization is presented in Table III, with the beta coefficients in the first column and the odds ratio in the second. The computed z-statistics and their probability values are presented in the third and fourth columns, respectively. The coefficients on capacity-to-pay, health insurance (HINS), age of household head, highest level of education completed by household head, occupation and the number of person below age 15 in household were all positive indicating that these variables increased the likelihood that a household utilizes health facility. The coefficients on the interaction term OOPHE*HINS, place of residence (Rural), self-reported health status (srh), number of person aged 60 and above, number of persons between ages 15 and 60, school dropouts, distance of health facility from residence were all negative, indicating that they reduce the likelihood that a household utilizes health facility. The odd ratios indicate the number of times the likelihood increases or decreases comparatively. The odds ratio on CTP all things being equal, indicates that households with a naira higher capacity to pay are 2.94 times more likely to utilize health facility. This is not surprising as health care services are offered on cash-and-carry basis, treatment continues and stops only to the point a consumer is able to pay for it. This means that richer households have better access to health facility utilization and poor households with less capacity to pay may have unmet healthcare needs. The odds ratio on HINS indicates that households with health insurance policy are 1.64 times more likely to utilize health facility. This is also not surprising since health insurance is a third-party payment system which provides cross-subsidizes between the sick and the healthy and between rich and the poor it is expected to induce people to utilize healthcare facilities. The odds ratio on OOPHE*HINS indicates that the interaction of health insurance and OOPHE dampens the effect of HINS on health facility utilization by 0.99 times. While health insurance increases the use of healthcare its full benefit may not be derivable in a society where a larger proportion of its inhabitants pay directly out of pocket for healthcare

services. This corroborates the findings of Chomi, *et al* (2014) who showed that health insurance increases the likelihood of seeking health care. Also, households with health insurance are more likely to utilize healthcare services therefore less likely to have unmet health needs. However, the prevalence of OOPHE as a payment system for healthcare has the capacity to undermine the gains from health insurance and should be seriously discouraged through deliberate policy efforts to provide better alternative payment systems. The odds ratio on Age indicates that households headed by older people are 1.4 times more likely to utilize health facility this was expected as experience increases with age. Also, households headed by more educated people are 1.09 times more likely to utilize health facility. Further, households headed by people employed in the organized private sector, self-employed were more likely to utilize health facility compared to those headed by public/civil servants. Households in rural areas were 0.59 times less likely to utilize health facility. This is also expected since health facilities in rural areas are almost nonexistent thus rural dwellers are excluded from utilizing healthcare services except in the urban centers.

Table III: Interaction Effect of OOPHE and HINS on the Probability of Health Facility Utilisation

HFU	Coefficient	Odds ratio	z – value	p > |z|
CPT	1.08	2.94	1.08	0.280
HINS	0.51	1.67	1.64	0.101
OOPHE*HINS	-3.05e-06	0.99	-0.77	0.443
Age	0.04***	1.04	3.46	0.001
Edu	0.08	1.09	0.91	0.360
OCCUP:				
Private Sector	0.36	1.44	0.96	0.337
Self Employed	0.21	1.24	0.78	0.437
Others	0.22	1.25	0.56	0.575
Rural	-0.54	0.59	-1.64	0.101
Srh	-0.26**	0.77	-2.09	0.037
Age60	-0.52**	0.60	-2.48	0.013
Age15	0.13**	1.14	2.21	0.027
Age15_60	-0.06	0.94	-1.06	0.287
School dropout	-0.57*	0.56	-1.70	0.089
Distance from health facility	-0.002	0.998	-0.43	0.669
Constant	-2.16***		-2.64	0.008
Pseudo R-Squared	0.0675	Number of Covariate patterns		309
LR Chi-Square (15)	37.99	Pearson Chi-squared (293)		417.13
Probability Chi-square	0.0009	Prob >Chi-squared		0.0000

Source: Author's Computation from Field Data July, 2019

Households with better self-rated health status are 0.77 times less likely to utilize health facility. This is one characteristic of developing countries where people do not seek or utilize healthcare services unless they are ill. Whereas households with more aged people 60years and above are 0.60 times less likely to utilize health facility those with more people below 15 years are 1.14 times more likely to utilize health facility. This is an indication of the influence the presence of older people above 60 have on the households' decision to utilize healthcare services. People within this age bracket usually have less CTP and are without health insurance, hence the tendency to favour the use of alternative. Due to their special needs and vulnerability having more people below 15 years of age induces the use of healthcare services. Households with more people between age 15 and 60 are 0.94 times less likely to utilize health facility. This is expected as people within the age bracket tend to be less vulnerable and susceptible to disease and illness. Households with more school dropouts are 0.56 times less likely to utilize health facility. Also, as the distance from the health facility increases the likelihood of utilizing healthcare services reduces. However, the most important determinants of health facility utilization amongst households are the age of the household head, self-reported (evaluated) health status, number of persons aged 60 and above, number of persons below age 15 and the number of school dropouts in a household. The overall model is statistically significant as indicated by the goodness of fit chi-squared statistic of 417.13 with probability value of 0.0000. Therefore, the model is non-spurious and suitable for policy analysis.

From our observations, both the laws establishing the BHIS and NHIS, and actual practice ignored significant aspects of standard practice. These legal and practical inadequacies largely affect healthcare utilization in Bayelsa State. Specifically, the BHIS and NHIS fail to address the issue of persons with chronic and terminal ailments such as renal diseases, cirrhosis and a host of others, which, significantly impinges negatively on the use of healthcare services. It follows logically that the absence of these important services increases OOPHE in a state with a risk-pooling prepayment system. For instance, the cost of using dialysis machine to assuage the excruciating pains and complications associated with renal sicknesses, which is not covered by the scheme raises grave concerns as it tends to reduce the propensity to utilize healthcare facilities. This obvious legal pitfall with the attendant practical underlying issues creates negative impact on healthcare

utilization, which is also consistent with the empirical results that corroborates the interaction effects of OOPHE and HINS. Moreso, the schemes also fail to address the issue of referrals, as beneficiaries are only left with the opportunity of accessing healthcare services in facilities where they are domiciled. This ugly trend has always resulted to double payment, which negatively affects healthcare utilization. The issue of referral is very critical in view of the role it plays in stimulating healthcare utilization. Referral cases do not only offer useful opportunities in enhancing the penchant to adopt orthodox methods to address medical challenges but also reduces double payment and attendant increase in the overall interest in healthcare utilization.

Furthermore, contrary to the recommendation of World Health Organizations that emphasizes an aggressive involvement of, at least, 90% of the population of a nation in risk-pooling prepayment schemes, the BHIS and NHIS, both in theory and practice, ignore and undermine a vast majority of the people in the private sector. The private sector constitutes a larger proportion of the population in Bayelsa State and sidelining such a huge segment of the people truly shows that the programme lacks certain basic components. The reason for the failure to include the private sector may not have been unconnected with the difficulties associated with the prepayment system as this group of people do not have a dependable (steady) income that can overtly assuage the difficulties associated with the payment pattern of the scheme. However, Health Insurance is a universal concern and therefore, ubiquitous; the reason for the exclusion of a segment of the population due to difficulties in payment is not tenable. In addition, the exclusion of the private sector reduces the interaction effects and the co-existence of OOPHE and HINS on healthcare utilization. Often, it falls within the purview of natural proclivities for people excluded in a programme of this magnitude to develop such enthusiasm to utilize healthcare facilities, except backed up with higher capacity to pay for these services. As an issue of relevance, the exclusion of the segment creates a far-reaching impact on the viability of the schemes. And naturally, once the viability of a programme of this sort is adversely affected, it follows logically that the scheme is gradually cascading to a moribund state, which is not envisaged for the health insurance schemes in Nigeria.

V. CONCLUSION AND POLICY IMPLICATIONS

5.1 Conclusion
This study concludes that the interaction of OOPHE with health insurance has a dampening effect on healthcare utilization. The interaction between out-of-pocket health expenditure and health insurance is not an important determinant of healthcare utilization among households. The most important determinants of health care utilization among households are age of the household head, self-reported (evaluated) health status, number of persons aged 60 and above, number of persons below age 15 and the number of school dropouts in a household. This study is in conformity with the Andersen (1968) linear relationship model of healthcare service utilization which posited that health utilisation is determined by predisposing, enabling and need factors.

5.2 Policy Implications
1.   There is need for the state government to ensure that primary health facilities in the rural areas are equipped and functional. Embarking on town hall meetings for beneficiaries of the health insurance scheme especially those in the rural areas could also be pivotal since distance reduces the probability of using healthcare facilities.
2.   There is also the need to further reduce the use of OOPHE as a payment system for health care utilisation. The interaction term between OOPHE and health insurance reduced the probability of health facility utilization. This is attributable to the rural population whose salaries are being deducted at source for health Insurance but are not utilizing the product but prefer the use alternative medicine or spent significantly out of pocket to utilize health facilities that are scarcely available (poorly or underequipped) in their localities.
3.   Furthermore, there is need for special healthcare facilities and or healthcare privileges for the elderly. This would encourage household members and the elderly themselves to avail themselves for routine medical checkups. This study found that households with older people above age 60 were less likely to utilize health facility, which means that they could have healthcare needs that are not attended to by family members and or society.
4.   Concerted effort must be made to restructure and reorganize the health Insurance schemes in the country in order to address obvious inadequacies, such as treatment of terminal and chronic diseases with the aid of dialysis machines, use of MRI, chemotherapy for cancer patients, etc. It is also important to address issues of referral of patients to be consistent with modern practiceand accommodate the private sector.

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