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# Demand for Health Insurance among Individual Households in Lagos State, Nigeria: Effects of Socio-Demograhic Variables

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## ABSTRACT

This study assesses socio-demographic variables on the demand for health insurance in Lagos State. For this purpose, the researchers have been able to examine selected socio-economic and demographic variables and their effects on health insurance accessibility and desire of individual households. The explanatory research design was employed. A convenience sampling technique was adopted. Data was gathered from individual households within Alimosho and Ojo Local Government Areas of Lagos State through the use of an interviewed schedule. The sample consisted of 212 respondents made up of individual households within the sample areas. Data collected was analyzed using multiple regression technique. The study was able to establish some level of contributory linkage between selected socio-demographic variables and demand for health insurance. The findings show that while education and income both appeared to have significant effect, gender and age both have positive contributory effect. The study therefore recommends that health insurance providers should endeavor to education the larger society of the significance of health insurance products to human existence. Secondly, a robust strategic health insurance outlines should be designed to incorporate the vulnerable ones in the society to ensure equality and fairness in the provision of National Health Insurance Scheme. Lastly, Health Maintenance Organizations should endeavor to implement flexible payment plans for participants in order to improve participation of more individuals.

**Keywords:** Health insurance, demand, socio-demographic, individual households, Nigeria

## INTRODUCTION

The health of any nation significantly enhances its economic development (Sumninder and Ruchita, 2001; World Health Organization, 2000). Indeed, healthy population is being noted as a necessary tool for rapid socio-economic and demographic sustenance of the whole world. With such advantageous socio-economic prospects, most African countries and indeed Nigeria suffers provision of quality, accessible, and affordable healthcare service delivery (Oba, 2008; Omoruan, Bamidele, and Philips, 2009; World Health Organization, 2007). Most countries have tried to align themselves to the fact that the provision of healthcare services should not only be a part of the government policy for each country but also a means of taking care of the poor who may not be able to finance the cost that is associated with paying for their health care needs (Boateng and Awunyor-Vitor, 2013; Meghan, 2010).

However, the structure of health system in Nigeria is such that is embedded on the concurrent item of legislation. This implies that while the Federal government coordinating the tertiary arm, the State government manages the secondary arm comprising general hospitals and health centers and Local government is concerned with the provision of basic health to grassroots people. In the past, studies had ascribed several problems militating against the growth of health insurance demand to include: inadequate awareness and education; non-engagement of employers; inadequate health facilities; concentration on elites, corporate and institutional clients; inadequate well trained health personnel or physicians; increasing population; and poor working conditions of medical personnel (Ministry of Health Rwanda, 2009; Jutting, 2003; Saksena, Elovaino & Perrot, 2010; Swartz 2009).

Increasing number of studies negate the assumption that poor people enjoy medical care as the middle-class people do (Carrin, Waelkens, & Criel, 2005; Cook, Hichs, O'Malley, Keegan, Guadagnoli, & Landom, 2007; Haas & Swartz, 2007; Selden, Hudson & Banthin, 2004). The study of Swartz (2009) had noted that poor people encounter barriers to obtaining healthcare connected with their inability to afford it. Inspite of efforts made, developing countries, Nigeria inclusive, are not given the needed health coverage (Drechsler & Jütting, 2005). Further studies in affirmation to this claim (such as Drechsler & Jütting, 2007; Pauly, Blavin, & Meghan, 2009), established that inadequacy in respect to health service accessibility and financial safeguard encourages out-of-pocket contributions to financing healthcare provisions.

In Nigeria, recurrent low quality in health facilities is usually being recorded. According to United Nation Development Programme (2008), 13 percent and 9 percent

of Nigerians were undernourished in 1990/92 and 2002/04, while 39 percent in 1990 and 44 percent of Nigerians in 2004 were noted to have access to improved sanitation. Collin, Schoen, Davis, Gauthier, and Shoenbaum (2007) opined that public contribution to medical requirements is needful coupled with frequent consumption of health services can stimulate enhanced health. Consequentially, modern theory posited that individuals purchasing health insurance due to the fact that they have preference for assurance to expending little resource as prices for risk of getting sick than expending humongous amounts on medicals (Basaza, Criel & Van der Stuyft, 2008; Schneider, 2004).

However, insurance usage and patronage in Nigeria has constantly underperformed in terms of its contribution to the gross domestic product, penetration and demand. More so, health risks are not appropriately pooled; so the poor, the low income earners, the elderly, and less healthy are excluded from insurance in spite of the emergence of many illnesses that are not common with us and the lack of fund by many families to pay for these illnesses when they occur (Dror & Jacquier, 1999; Jutting, 2004; Sanusi & Awe, 2009; Kannegiesser, 2009).

The core objective of this study is to examine the socio-economic and demographic factors effects on health insurance purchase among individual households in Lagos State. Other objectives include: investigating if there is a significant relationship between insurance awareness and health insurance purchase; investigating if income level of individual households have positively enhanced their affordability for health insurance; examining the significant impact of age distribution of individual household on health insurance demand; and examining the gender effect on health insurance purchase.

For the realization of the afore-mentioned objectives, the following relevant research questions were set: Is there any significant relationship between insurance awareness and demand for health insurance? Has income level of individual household positively enhance their affordability for health insurance? Of what significant impact are age distributions of individual households on health insurance accessibility? Is gender of any significant effect on the demand for health insurance? To provide answers to the above highlighted relevant questions, the following testable research hypotheses were considered:

**$H_1$:** *There is no significant relationship between insurance awareness and demand for health insurance*

**$H_2$:** *Income level of individual households do not positively enhance their affordability for health insurance*

**$H_3$:** *Age distributions of individual households have no significant impact on health insurance accessibility*

**$H_4$:** *Gender is of no significant effect on the demand for health insurance*

## LITERATURE REVIEW

Health insurance, according to Vaughan and Vaughan (2008), is coverage against loss of incidental injury to human. Thus, loss of wages arising from sickness may have detrimental effect on doctor's bills, medicals or long-term solution. Health insurance is described as protection which makes provisions for remittance of benefits consequent on injury or sickness which include accidental losses, expenses emanating from medicals, disability, dismemberment and injury (Health Insurance Association of America (2014). It is thus defined as a plan which assists payment for medicals, even if through privately purchase insurance, social insurance or a social welfare plan funded by the government (Bhargava & Loewenstein, 2005; Elwyn, Edwards, Kinnersley & Grol, 2000).

An earlier related study conducted by Garnick, Hendrick, Torpe, Newhouse, Donelon, and Blendon (1993), established that people who have health coverage were if such protections make provisions for hospitals, doctors' visitations, mental health come or emergence requirements. However, the empirical findings from the study of Lowenstein et al. (2013) noted that difficulties may arise in that consumer dread desire for insurance do not have an impressive knowledge of cost-sharing (such as co-insurance, deductibles, and improved benefits) and the need for high level numeracy to ensure informed judgment and choice among health schemes. Previous studies have reiterated that the choice of health coverage is driven by two set of determinants: (i) the attributable nature of the health plan, and (ii) individual sentiments in making a choice (Bhat & Jain, 2006; Boateng & Awunyor-Vitor, 2013; Sanhueza & Ruiz-Tagle, 2002; Shaw & Ainsworth, 1995).

Individual predisposing factors that allow connectivity within the socio-demographic variables (Jehu-Appiah, Aryeetey, Agyepong, Spaan, & Baltussen, 2012; Kamuzora & Gilson 2007; Mitchell, Haber, & Hoover, 2006; Sarpong, Loag, Fobil, Meyer, Adu-Sarkodie, May, & Schwarz, 2010).Some of the major factors suggested to have affected the demand for health insurance are: price (.i.e. insurance premium), income, insurance awareness, age, healthcare expenditure, health status of the family, employment, marital status and gender (Atinga, Abiro, & Kuganab-Lem, 2015; Barrett & Conlon, 2003; Butler, 1999; Hopkins & Kidd, 1996; Lepine & Nestour, 2008; Mocan, Tekin, & Jeffrey, 2004; Rao, 2004). Price, being a determinant of health insurance demand has been explicitly examined in terms of insurance premium, in an earlier argument by Feldstein (1973) supported by Bhat and Jain (2006) noted that as the price of healthcare increases, insurance purchase in the risk of networth depletes. The empirical evidence to the price determinant of health insurance demand is shown in the work by Chernew, Cutler, and Keenan (2005), Elsenhauer (2006), Mwabu, Wang'ombe and Nganda (2003), and Ruhara and Kioko (2016).

Studies Bolhaar, Lindeboom, and Klaauw, 2008; Cameron & Trivedi, (1991);Swartz, Marcotte and Mcbride, (1993); Tepper, and Turnbull, (2016) have noted that people with very low income or those unemployed, always do not have access to health insurance whenever it is not obligatory and publicly provided. An increasing income, by and large, decreases alternative forgone attached with privately purchased health coverage. Therefore, at a large income level household insurance purchase decreases as households are desiring to retain the risk (Bhat & Jain, 2007). An earlier submission by Kronick and Gilmer

(1999) posited that people having low incomes and scanty assets purchase insurance basically to safeguard their health. There is evidence of selection into insurance by income (Finn & Harmon, 2006; Grignon & Kambia-chopin, 2009; Yue & Zou, 2014). Income serves as a determining factor to chances of buying insurance from two basic perspectives which include (i) the intuitive expectation that higher the income lesser opportunistic cost to buying health coverage privately in pure pecuniary ways (Hopkins and Kidd 1996); and (ii) healthy opportunistic cost serves as a source of income, component of income and extent of individuals' reallocation of their time consumption. Income Bhat and Jain (2007) gave a supporting evidence drawing from their work that households having higher annual income propensity have higher capacity to renew health insurance than that of non-insured households; noting that if the income of the household is higher it will have more money to purchase health insurance and pay the premium regularly.

The individual perception of risk is a significant factor. Consumers' knowledge of the risk they are exposed to influence their insurance buying decision. This is made possible with the level of education concerning the product. Senterfitt, Long, Shih, and Teutsch (2013) demonstrated how education and health behavior impact on health outcome, in that health behaviors were associated with a smaller difference in health status at the lower educational levels, due to the fact that lower education status itself was a much more significant contributor to health than the health behavior. In consistent with the study of Bharmal, Derose, Felician and Weden (2015), education is seen as an instrument to better health through individuals' enhanced health knowledge and health behavior. Earlier studies (Liu & Chen, 2002; Motlagh, Gorji, Mahdavi, & Hhaderi, 2015; Liu, Goa, & Rizzo, 2011) had shown existence of direct correlational link between education and higher intensity of risk aversion; correlation between education level and increased awareness of benefits of low-payment regular insurance in avoidance of catastrophic health expenditure; and also, relational link between increasing education level and demand for medical insurance.

However, supporting evidence can be found in the works of Barnes, Hanoch, and Rice (2015); Bhat and Jain (2006); and Savage and Wright (1999) showing positive impact on the probability of having insurance Cover. Nonnemaker (2009) stipulated that age rating of premiums as important method to equate the amount an insurer receives from (or on behalf of) an individual to the expected cost of providing care to that person; in order for reduction in the cost of insurance for those in the lowest cost band. Bhat and Jain (2007) confirms the importance of age variable in deciding the extent of health insurance demand and noted that people in higher age groups relatively spend more on insurance.

Barata, Almeida, Montero, and Silva (2007) averred that gender is a factor in determining the health status and behavioral framework of mankind. In an empirical result from Okunada and Wunnava (2002), it was found that a higher proportion of women tend to participate in health insurance, life insurance and retirement plan. Cerceau (2012) opined that health programmes are rarely gender neutral and can even reinforce existing inequalities if gender issues are not adequately addressed. In a multivariate analysis conducted by Boateng and Awunyor-Vitor, (2013), Gender was a significant determinant of one's insurance status where female genders were said to be significantly more likely to renew their health insurance as compared to male respondents.

## RESEARCH METHODOLOGY

The research design adopted in this study was explanatory in nature. The need for this research design is to identify any causal relationship between the variables that relate to the research problems (Saunders, Lewis & Thornhill, 2009). In attainment of the research objectives, the research instrument employed was a structured interview. The data gathering exercise was made speedy with the support of some employed research assistants. The usage of this data gathering tool was because of its appropriateness to the design of the research in term of timeliness, direct personal contact and reliability or exactness in information collection (Kothari, 2004). However, the respective participants' views to the understudied issues were coded by employing a five

The population consisted of individual households in the Lagos metropolis. The sampling units therefore take cognizance of the individual households within the Alimosho and Ojo Local Government Areas of Lagos State. The choice of these sample areas was due to ease of data gathering. The study employed a convenience sampling technique. The sample consisted of 212 respondents.

Concerning the study validity, theoretical and content were choice of validity. While the former was effected via variable measures from extant literature, the content validity was designed through the distribution of a set of drafted questionnaires to few selected Health Maintenance Organisations' officers, health insurance providers and academia in the insurance profession. Experts in this area, therefore, considered the instrument and gave laudable instructions, which assisted researchers in being able to structure the items on the instrument within the participants understanding. On reliability, 0.7651 was estimated as the Crobach alpha indicating that the instrument superseded the required standard of 0.70.

In an attempt to analyse the effects of the socio-economic and demographic variables on demand for health insurance among individual households, multiple regression technique was employed. When the relationship is of a quantitative nature, and measuring the prediction of the value of a variable based on the value of two or more other variables, multiple regression technique is applicable Pallant, (2011).

In presenting the estimated model coefficients, the equation obtained from the linear function regression result is given as:

$Y = 1.734a + 0.232x_1 + 0.117x_2 + 0.87x_3 + 0.217x_4$

a = Constant

$x_1$= Insurance awareness

$x_2$= Gender

$x_3$= Age

$x_4$= Income

Y= Demand for health insurance

## RESULTS AND DISCUSSIONS

The justification for the choice of the above socio-demographic variables was influenced by choice of responses by participants, convenience in data gathering exercise and time constraint. A multiple regression was run to predict demand for health insurance (dependent variable) from insurance awareness, income, gender, and age (independent variables). The table 1 indicates that the independent variables yielded a coefficient of determination ($R^2$) of 0.481 accounting for 48.1% of the proportion of variance in dependent variable that is explained by the independent variables. The table 2, then, shows that the analysis of variance for the multiple regression data produced F-ratio value of 12.079 which is significant at 0.05 (.i.e. F (4, 207) = 12.079, $p < 0.05$). In table 3, the independent all contribute positively to demand for health insurance at a low considerable relationship. While all other variables statistically significantly predict demand for health insurance at $p < 0.05$, gender does not.

**Table 1**

*Model Summary[b]*

| R Square | Adj R Square | Std. Err | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|
| | | | R. S Change | F Change | df1 | df2 | Sig. |
| .481 | .468 | 2.08131 | .481 | 12.079 | 4 | 207 | .000 |

*Predictors: (Constant), insurance awareness, Gender, Age and Income*

**Table 2**

*ANOVA[b]*

| Model | Sum of square | Df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 68.836 | 4 | 27.214 | 12.079 | .000[a] |
| Residual | 137.113 | 207 | .058 | | |
| Total | 205.94 | 212 | | | |

*Predictors: (Constant), insurance awareness, Gender, Age and Income*

**Table 3**

*Coefficients*

| Model | coefficients | | coefficient | t | Sig. |
|---|---|---|---|---|---|
| | B | Std.Err | Beta | | |
| (constant) | 1.734 | 0.78 | | 17.3 | .000 |
| Insurance | .232 | 0.25 | .534 | 6.63 | .341 |
| awareness | .117 | 0.37 | .251 | 2.87 | 1.54 |
| Gender | 0.87 | 0.42 | .183 | 1.32 | .000 |
| Age | .217 | 0.51 | .387 | 4.58 | .230 |
| Income | | | | | .540 |

*Dependent Variable: Demand for Insurance*

Findings from an earlier work by Van De Ven and Van Praag (1981) established that awareness and income are generally significantly and positively correlated, in that, increases in both income and awareness would be expected to lead to an increase in the probability of buying insurance. More so, the significance of awareness in health decision-making is well reported in the study of Bhat and Jain (2006). It is further stipulated that education has an inverse effect on income, as both awareness and income are largely positively correlated (Ven & Praag, 1981). In all, an increase in both education and income would be expected to lead to an increase in the propensity of purchasing insurance. According to Hofter (nd), the most vital determinants of individual choice are income, age and place of residence. Patel (2002) earlier reiterated that many more people would demand health insurance if they were well informed about the affordability and accessibility of individual and family plans.

## CONCLUSIONS

This study made attempts to assess socio-demographic variables on health insurance demand of individual households within the Nigerian environment. The findings of the study have shown the significance and importance of the various socio-demographic variables on health insurance plan. It has so far affirmed that health insurance of both out-of–the pocket choice and that of government are growing and the increasing effect of these factors affect individual demand and renewal decisions of continuing in health insurance programme. Findings from this study hence show that while income and education have significant effect in the demand function of health insurance demand age and gender exhibit a positive contributory effect in the demand for health insurance.

**Recommendations, Research Implications and Suggestions for Further Studies**

For proper recommendation to this research, health insurance providers should endeavour to educate the larger society of the significance of health insurance products to human existence. Secondly, a robust strategic health insurance outlines should be designed to incorporate the vulnerable ones in the society to ensure equality and fairness in the provision of National Health Insurance Scheme. Further, Health Maintenance Organisations should endeavour to implement flexible payment plans for participants in order to improve participation of more individuals. However, concrete collaboration should be facilitated among Insurance companies and HMOs for reduction in their operating cost and efficiency in their delivery of health insurance service in the country. Lastly, National Insurance Commission (NAICOM) should make regular check on health insurance delivery procedure and methodology adopted among Nigeria's health insurance providers so as to ensure that proper technicality are standardised in meeting health insurance expectations of a policyholders.

On research implications, this study contributes significantly to knowledge in that it informs health management organizations of the need to integrate their business plan with ensuring inclusion of all-round policy delivery towards every individual in Nigeria and its environs. It thus serves as an eye-opener for stakeholders in the field of insurance and health risk management to see reasons why they need to collaborate in a bid to train the minds of young practitioners towards implementing financial risk control mechanism. This research work helps apprise insurance practitioners of the need to design health insurance products that are strategic to the continuing survival of individual members of formal and informal sectors.

The future studies should explore whether the insurance companies, particularly microinsurance schemes, offer medium-term health insurance policies and thus the key imperative for doing so. More research should look in the direction of the socio-demographic of health risks using the risk averse-risk taking framework in determining policyholders' repeat purchase decisions, renewal decision and behavioral methodology to health risk.

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