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Dynamics of Socioeconomic Status and Health Poverty in Ibonwon Township of Eredo Local Council Development Area, Lagos-Nigeria

Kehinde K. Agbatogun[1], Adeniyi M. Oresanwo[2] & Adenuga F. Adekoya[3]
[1]Department of Economics, Tai Solarin University of Education, Nigeria.
[2&3]Department of Economics, Lagos State University of Education, Nigeria.
Corresponding Email: oresanwoam@lasued.edu.ng

Abstract
Health spending patterns in Nigeria are significantly impacted by increase in poverty trend; also, the recent recession due to COVID-19 pandemic has worsened healthcare deprivation leading to increased unemployment and vulnerability in household access to health services. However, studies have exposed some entangled findings on how poverty affects health deprivation in developing countries. Going by these premises this study focuses on the dynamics of socioeconomic status and health poverty in Ibonwon Township, Lagos State, aiming to develop a health poverty index using the Alkire Foster technique. Using the Taro-Yamane sampling size formula, three hundred questionnaires were distributed to seven-quarters of the township for data collection. The health poverty index was used to examine economic determinants of health poverty, revealing a high frequency of health deprivation, particularly on healthcare costs. The study found that household income does not significantly impact health poverty, with income differences causing deprivation and severity by 1.9%. Job skill significantly affects deprivation and severity, while unskilled heads is reduced by 47.4% following an increase of 14.57%. The study concludes that State Government in its efforts should continually improve access to affordable medical facilities, qualified doctors, infrastructure, and health service awareness can help eliminate health poverty in Lagos State, but reducing family size may not always be effective presently as it takes a long-term plan that warrants steady education of its populace needs. The policy suggestion of the study is that women's economic empowerment and economic initiatives should be embraced by the policy makers to alleviate health poverty.

Keywords: Development, Health, Poverty
JEL Classification Codes: O15, I22, I32

1. Introduction

Health spending patterns significantly impact poverty levels in developing nations, particularly Nigeria. The Sustainable Development

Agenda 2030 aims to reduce poverty to at least half of the population living in poverty by 2030 in Nigeria. Despite the aim of this agenda, the recent recession as a result of the COVID-19 pandemic has worsened health deprivation in healthcare, leading to increased unemployment and vulnerability in household access to health services. Poverty is a persistent issue that impacts health outcomes from birth to the end of life. The nexus between health and poverty is deep, with individuals or families lacking essentials like food, clean water, education, transportation, housing, clothing, and healthcare services. Addressing the health-poverty trap, a negative feedback loop caused by reduced income and poor health is crucial. Health poverty, or healthcare poverty, refers to households lacking access to adequate healthcare services due to financial limitations (Chung, Dong, Wong, Wong, & Chung, 2020).

The Multidimensional Poverty Index (MPI) approach is more desirable than the income-based poverty approach, as it considers both the incidence and intensity of health deprivation. The intensity of deprivation index indicates that 54.80% of the population is severely affected by poverty in Nigeria compared to other regions unlike Tesfaye (2013) who asserts that more than 70% are prone to poverty. Therefore, the headcount ratio measured by the population in multidimensional poverty in Nigeria stands at 46.41%, above 22% for all developing countries (Multidimensional Poverty Peer Network, 2018). However, the disparity in the measures of the multidimensional poverty index is linked to health poverty. Health poverty focuses on those who are worst off in accessing adequate basic health care as a result of health disparity. Besides, one of the main components of MPI is health indicators because poverty is linked to poor health (Oshio & Kan, 2014; Ubi & Ndem, 2019). This type of linkage is bilateral because poverty denies people good access to health; people with poor health work less and thereby earn less, which affect their spending on health.

Besides, in decomposing the poor based on the human development report; majority are still struggling to meet up with their basic needs, and the worst is that it is mostly affected by the sub-Saharan Africa nations and especially in Nigeria. Between 2015 and 2019, the average working poor at Purchasing Power Parity (PPP) of $3.20 a day in Nigeria stood at 63.48%, which doubled or more than those in other regions. Thus, working poor people are linked to poor income, which increases poverty (Oxford Poverty & Human Development Initiative [OPHDI], 2020). So, increased income, education, better housing chances, and social mobility, especially during childhood, can lessen household poverty in depth and have a positive impact on downstream health outcomes for both middle-class and low-income individuals and the economy. However, the income-based approach to measuring poverty has

received criticism; although, it is likely that income will translate into basic needs (Sen, 1980; Tripathi & Yenneti, 2020).

Poverty is a significant cause of death and disease in Nigeria, with income inequality increasing significantly due to unfair wealth distribution. Nonclinical factors like occupation also affect health outcomes, and as domestic healthcare expenditure increases, human capital, which is crucial for economic development and life expectancy is also increased. Nigeria faces a persistent issue of poverty, with half of its population living below the international poverty line of US $1.25 per day. This poses a significant obstacle to achieving the Millennium Development Goals of halving poverty by 2030. Despite numerous research efforts, satisfactory results have remained elusive to show that health poverty is affected by the dynamics of socioeconomic determinants.

This study investigates the dynamics of health poverty in Lagos State, focusing on wide-ranging inequalities that hinder access to adequate healthcare. Addressing this issue is essential as health disparities worsen due to escalating income disparities. As such, the study hypothesizes that economic factors, such as household occupation, job skills, and income, do not impact health poverty in Ibonwon Township, making it necessary to address this issue. The rest of this study is divided into four sections: literature review, methodology, results and discussions, and conclusion and recommendations.

2. Literature Review

2.1 Theoretical Review

2.1.1 Grossman's Model of Demand for Health

The standard model of Grossman (2017) establishes model of socioeconomic determinants of health in Nigeria. As an extension of Becker (1966) home production, the Grossman model has two broad components: investment and consumption. That is, human beings are not rational enough as they put health on top of their scale of preference since with good health, they enjoy life better and become more productive by working longer than otherwise. In other words, the demand for healthy is thus derived from the utility demand (increase in productivity and reduction in production losses due to illness and longer life span) so as to be able to participate in both leisure activities. The model also hypotheses that though health depreciates with aging and risky health behaviour, health appreciates thereby lengthen one's life span through investment in it.

The Grossman's model is important not only in emphasizing the distinction between demand for health and demand for health care, but also allows us to investigate the influence of demographic characteristics such as age and education without presuming that these variables are favourably or

negatively linked with consumers' health preferences. Its demonstration shows that health is both an investment and a consumption commodity. Furthermore, the Grossman model explains the relationship between age, income, and education on both the demand for health capital and the resulting demand for medical treatment. He explains that demand for health capital is inversely related to age and inversely connected to wage rates and education.

2.1.2 Theory of Health Disparities

Health disparities theory, as developed by Goldman and Lakdawalla (2005) tells linked between schooling and health, it is nearly certain that more educated people tend to earn higher wages, and this gives them stronger incentives to invest in health. Of course, we make this assumption conditional on initial health status. Unconditionally, poorer people tend to spend more on medical care than richer people because they are sicker. An example helps illustrate the value of this sample assumption. Suppose that person E has stronger incentives to invest in health than person U, and accordingly that E uses 2 units of health care, but U uses only 1. If the price of health care falls buys $1 (or the marginal productivity of health care rises by $1) E receives a windfall gain of $2, but U's gain is only $1. Under assumption shocks, E will parlay her disproportionate monetary advantage into a disproportionate gain in health, because on the margin, she spends a larger fraction of her income on health.

This example also illustrates why our results do not depend on the specific causal link between schooling and health. It is driven entirely by the fact that better educated people invest more in health. It does not matter whether schooling itself makes them better producers, or whether they are more forward looking, more able, or because of some other factor. This result will obtain for a variety of models that make very different assumptions about the specific effects of education on health production. The study makes the standard assumption that health provides an individual with more time for labour and leisure, but at diminishing returns (Grossman, 1972). Define H as health and h as health investment. H increase in a concave fashion with health investment. Suppose that health investments can take the form of medical care purchased in the market *(m),* and investments by the patient of her own time and effort *(t).* These two inputs are assumed to be complementary; consistent with the empirical finding that better patient adherence improves the effectiveness of treatment (Goldman & Smith, 2002).

Upon the review of these health disparity theories, the study hinged its theoretical framework on the Grossman's model of demand for health as developed in 1972.

2.2 Theoretical Framework

To discuss the interrelationship between economic determinants of health poverty, the Grossman (1972) model of demand for health is the appropriate theory. Assume the intertemporal utility function of a typical consumer be as expressed in Equation 1,

$$U = U_i(\emptyset_i H_i, \dots, Z_i) \quad 1$$

Where *Ui* is the inherited stock of health, H_i is the stock of health in the $_i th$ time period, $\emptyset_i$ is the service flow per unit stock, $h_i = \emptyset_i H_i$ is total consumption of "health services," and Z_i is total consumption of another in the *ith* period. Note that, whereas in the usual intertemporal utility function n, the length of life as of the planning date, is fixed, here it is an endogenous variable. In particular, death takes place H_i that maximize utility subject to certain production and resources constraints that are now outlined. Net investment in the health stock is, by definition, equal to gross investment less depreciation as expressed in equation 2.

$$H_i + 1 - H_i = I_i - \delta_i H_i \quad 2$$

Where δi is the rate of depreciation during *ith* period, *Ii* is gross investment. Although it is considered that depreciation rates are exogenous, an individual's age may have an impact on them. According to a set of home production functions, consumers generate gross investments in health and other commodities in the utility function:

$$I_i = I_i(M_i, TH_i, E_i)$$
$$Z_i = Z_i(X_i, T_i, E_i) \quad 3$$

In equation 3, M_i is medical care, X_i is the goods input in the production of the commodity Z_i, TH_i and T_i are time inputs, and E_i is the stock of human capital. It is assumed that a shift in human capital changes the efficiency of the production process in the non-market sector of the economy, just as a shift in technology changes the efficiency of the production process in the market sector. The model consists of investment and consumption components, with health being a top priority for human beings. Good health improves life quality and productivity, leading to increased leisure activities.

The model suggests that health depreciates with aging and risky health behaviours but appreciates through investment in it. It distinguishes between health demand and healthcare demand and allows for investigation of demographic characteristics like age and education. The Grossman model explains the relationship between age, income, and education on health capital demand and medical treatment demand, with health capital demand being inversely related to age and income.

2.3 Empirical Review

Research shows that higher per capita income and education lead to healthier individuals. Health poverty in healthcare markets is influenced by socioeconomic factors, such as events like accidents and illness, and information gaps between providers and consumers. Medical service subsidies and life cycle patterns also impact healthcare utilization. Unlike, Britain, health poverty is influenced by factors like cohabiting, couples without children, and retired persons.

To this end, Jia, Sai, Su, and Huang (2022) measured the decomposition of health poverty of rural residents in China using the Alkire foster. Using this exceptional method, the study found that there exists a significant reduction in health poverty among Chinese rural residents from 2016-2018, despite regional variations. They further suggested that appropriate means be adopted to assist the people with health deprivation status so as to reduce the risk of poverty in the study area. To ensure this is done an education programme must be given to them in order to guide their lifestyles which can make them to overcome poverty.

Relatively, in the foregoing, Chi, Liu, and Zhang (2022) examined the multidimensional health poverty in China using the traditional Alkire foster multidimensional poverty index, and the result revealed that China's health poverty is primarily attributed to physical, monetary, and mental health issues, with rural areas experiencing higher health poverty due to higher medical costs. To assist in cushioning the effect physical health on health poverty, Chiu *et al*. (2022) suggested that diseases can be reduced through provision of medical out-of-pocket to relief the burden of health cost on the rural dwellers in China.

Also, Kahouli (2020) asserts that using a nationally representative dataset, the relationship between fuel poverty and self-assessed health is examined in this study. Fuel poverty and health status were found to have a substantial causal link, with a delayed negative impact. The study adds to the discussion of financing energy-efficient housing initiatives to lower fuel poverty and enhance health outcomes. It also bolsters the claim that public healthcare costs might be decreased by enhancing living conditions. That is reducing health cost to enhance health status is similar to Chiu *et al.* (2022).

This flows from the recent COVID-19 pandemic with Buheji *et al*. (2020) to investigate the extent of the socioeconomic pandemic impact on global poverty. The study showed that the global COVID-19 epidemic has had a substantial impact on impoverished populations, leading to difficulties in their means of subsistence. An integrative analysis of the literature demonstrates how challenging it is to follow lockdown procedures and social isolation tactics. Prompt action is advised to reduce the pandemic's effects and

pave the way for further study on targeted initiatives for the impoverished. Therefore, reducing the population below the poverty line especially during health disaster would require the government meeting up the poor essential needs.

Clarke and Erreygers (2020) explored the concept of health poverty using the Foster-Greer-Thorbecke class of indicators to disaggregate the measures of poverty into three health variables: cardiovascular risk, health status, and life expectancy posing a finding that there is a slight decline in high cardiovascular disease risk in the United States. They further encouraged health policy should be prioritized to link and cushion health poverty rates on people experiencing high inequalities in the society.

In the same vein, Chen and Pan (2019) examined the effects of health poverty alleviation projects on financial risk protection for rural residents in Chishui city, China. The study utilized panel data from 63,426 rural households in Chishui City, China, from 2014 to 2017, to compare differences in propensity scores, and revealed that health poverty alleviation project reduces out-of-pocket payments by 15%, decreases catastrophic health expenditure by 7.7% and 11.7%, and increases annual hospitalizations per household by 0.035%. In line with Chiu *et al.* (2022) and Kahouli (2020), they concluded that out-of-pocket payment for health costs must be reduced by increasing the level of health expenditure so as to reduce the level of poverty.

Meh, Thind, Ryan, and Terry (2019) investigated the levels and determinants of maternal mortality in Northern and Southern Nigeria using the multivariable logistic regression and found out that there were variations in the levels of maternal mortality between the two regions. Maternal mortality was more pronounced in the North and increased in 2013 compared to 2008. For the South, the levels slightly decreased. Also, the suggested that health services education must be provided to girls and women in Nigeria in order to reduce poverty of mortality. Their views emphasis education as a tool that can be used to reduce poverty which is similar to the view of Jia *et al.* (2022).

Likewise, the effort Teka, Woldu, and Fre (2019) investigated the income inequality and poverty in Ethiopian pastoral and agro-pastoral communities, and it was discovered that 33.7% of households, and 47.6% of all households have access to quality impoverished food. Pastoral villages had the highest rate of poverty, accounting for 32% of participating households and 35.6% of PSNP non-participants. The Koneba area has the lowest Gini score, indicating concerning levels of income inequality. It is advised to improve local institutions, bolster initiatives aimed at reducing poverty and offer microfinance services.

Also, Iqbal, and Nawaz (2017) examined the spatial differences and socioeconomic determinants of health poverty using the Alkire foster method.

The result revealed that Pakistan's health poverty rate is 41%, with rural areas experiencing a 50% higher ratio. Punjab and Balochistan were found to be the least poor provinces, with high health service, post-natal care, and child immunization costs. Sadath and Archarya (2017) assessed the intensity of energy poverty using the multidimensional poverty index with special empirical evidence from households in India. The study used the capacity approach developed by Amartya Sen to evaluate energy poverty in India. The findings indicate a high prevalence of poverty that overlaps with social regression and income due to shortage or poor access to electricity. They suggested that various sources of energy should be tapped into to provide electricity which can bring more people out of multidimensional poverty index measured by energy poverty.

3. Methodology

3.1 Study Area

This study examines the Health Poverty Index (HPI) in the Epe Local Government Area of Lagos State, specifically in the Ibonwon Township. The town, with a small household population and lack of well-equipped healthcare centers, is close to major institutions like Michael Otedola College of Primary Education, Lagos State University of Education, Yaba College of Technology, and Augustine University. The aim is to identify health poverty levels and provide practical solutions. The town consists of seven quarters with at least 100 households. As such, each of the quarters and the number of households they consist of in the Ibonwon Town can be seen in Table 1.

Table 1: Number of Individual Households in Each Quarters of Ibonwon Township

Quarters	Number of Individual Households
Aiyegbami	201
Aleke	168
Aledo	153
Lapeni	171
Lebe	148
Rogunboja/Eshiola	208
Losu	156
Total	1205

Source: Author's Compilation.

Therefore, to determine the sample size for the study, the study adopts the Taro-Yamane (TY) sampling size formula with a 5% margin of error (sampling error). The formula is expressed in equation 4.

$$n = \frac{N}{[1+N(e)^2]} \qquad 4$$

Where, n = sample size; N = population size; e = degree of error expected or sampling error. Thus, from using the TY sampling size formula, it can be calculated as follows,

$$n = \frac{1205}{[1+1205(0.05)^2]} = 300.3115265$$

The study aimed to assess health poverty in Ibonwon Township, Lagos State, using a self-structured questionnaire called QEDHPICE and a Record Observation Test (ROT). The questionnaire collected demographic and economic data, while the ROT was divided into five indicators: health care utilisation, health care quality, health care costs, maternal health, and child health. The study used simple random sampling techniques and administered 50 copies to randomly selected households in Ikosi-Ejerin LCDA of Epe LGA.

The Alkire, Conconi, and Roche (2014) methodology was used to construct Health Poverty Index (HPI). Nine health indicators were used to measure health dimensions, including doctor consultation, satisfaction with health services, personal and external costs, pre-natal care, post-natal care, and immunity. Deprivation cut-offs were defined using national priorities, cultural norms, international practices, and empirical evidence. Each dimension received a weight of 1/5, and the indicators within each dimension were equally weighted. Thus, each sub-indicator within D1, D2, D3, D4 dimension receives a weight of 1/10 (that is, 1/5÷2), while the weight for indicator D5 dimension receives 1/5 (that is, 1/5÷ 1). Hence, the *i* weight *as Wi* can be expressed in equation 5,

$$\sum_{i=1}^{n} w_i \qquad 5$$

Where i=1, 2, 3, ...

Thus, each indicator's definition, deprivation cut-off, and relative value are given in Table 2. weight.

Table 2: Indicators for Each Weights and Deprivation Cut-Off

Dimension	Indicator	Deprivation Cut	Weight
D1: Use of health services	**IND1:** Doctor consulted when sick or injured.	Deprived if any member of the household do not consult doctors or nurse when sick or injured since the last 12 months, while not deprived if otherwise.	1/10
	IND2: Assisted delivery.	Deprived if any woman has not given birth in the household since the last 12 months, while not deprived if otherwise.	1/10
D2: Quality of health services	**IND3:** Satisfaction with the use of health services.	Deprived if the head or members of household do not enjoy the services rendered by public healthcare providers, while not deprived if otherwise.	1/10
	IND4: Institutional delivery.	Deprived if head or members of household do not prefer public healthcare services to private services, while not deprived if otherwise.	1/10
D3: Cost of healthcare services	**IND5:** Personal cost	Deprived if the head of household finds it difficult to pay for the healthcare services on him and other household members, while not deprived if otherwise.	1/10
	IND6: External cost	Deprived if the head of household finds it difficult to get funds from external source (friends, neighbor, loads, etcetera) to pay for the healthcare services on him and other household members, while not deprived if otherwise.	1/10
D4: Maternal health	**IND7:** Pre-natal care	Deprived if a pregnant woman in a household received pregnancy care from doctors, nurses or midwives when pregnant, while not deprived if otherwise.	1/10
	IND8: Post-natal care	Deprived when the baby of a nursing in a household received swift and proper care from doctors, nurses or midwives after child-birth, while not deprived if otherwise.	1/10
D5: Child health	**IND9:** Immunisation	Deprived if the child in a household do not receive at least one basic vaccination after child birth, while not deprived if otherwise.	1/5

Source: Author's Compilation.

Step 3: Identification and Selection of the Poverty Cut-off for the Poor

The weighted household deprivation score is determined by a sum of its deprivations in component indicators, with a score ranging from 0 to 1, increasing as the number of deprivations increases and reaching its maximum of 1 when all indicators are deprived. As such, a household which is not deprived in any indicator receives a score equal to 0, and 1 if otherwise as shown in equation 6. Therefore,

$$C_i = W_{1i}IND_{1i} + W_{2i}IND_{2i} + W_{3i}IND_{3i} + W_{4i}IND_{4i} + W_{5i}IND_{5i} + W_{6i}IND_{6i} + W_{7i}IND_{7i} + W_{8i}IND_{8i} + W_{9i}IND_{9i} \quad 6$$

Where *INDi* = 1 if the household is deprived in indicator *i*, that is if $x_i < z_i$, and otherwise where $IND_i = 0$. As such, the w_i is the weight attached to indicator *i*. In that regard, a threshold is used to identify the multidimensional health poverty (MHP), which in the Alkire Foster methodology (AFM) is called the poverty cut-off. Hence, for the purpose of this study, poverty cut-off is defined as the share of (weighted) deprivations a household must have in order to be considered poor, and can be denoted as "*k*". Therefore, a household is considered poor if its deprivation score is equal or greater than the poverty cut-off (*k*), that is, a household is poor if, $Ci \geq k$. And for household whose deprivation score is below the poverty cut-off (*k*), even if it is non-zero, then, it is denoted by -0, which is regarded as censoring in poverty measurement. As such, to differentiate between the original deprivation score from the censored one, the study used the censored deprivation score the notation *Ci*(*k*). And where $Ci > k$, then, $Ci(k) = Ci$, but if otherwise, when $Ci < k$, then, $Ci(k) = 0$. In that regard, *Ci*(*k*) is the deprivation score for the poor.

Step 4: Computation of HPI

The HPI, as per AFM, identifies the proportion of individuals or households experiencing multiple deprivations within a population and the intensity of these deprivations, which is the average proportion of them. Formally, the first component is called the health poverty headcount ratio (H), and can be obtained as shown in equation 7,

$$H = \frac{q}{n} \quad 7$$

Where, q is the number of households who are multidimensional health poor and n is the total number of households. The HPI's second component, the intensity of household deprivation, determines the breadth of poverty in a household and represents the average deprivation score of the multidimensional health poor.

$$A = \sum_{i=1}^{n} C_i(k) \div q \quad 8$$

Where, *Ci*(*k*) is the censored deprivation score of household *i* and *q* is the number of households who are multidimensional health poor. Thus, HPI is

calculated by multiplying the incidence of poverty (H) by the average intensity (A) across the households that are multidimensional health poor. This can be specified and calculated in equation 9,

$$HPI = H\ x\ A \quad 9$$

The study measures the effect of determinants on health poverty using the Binomial Logistic Regression Model (BLRM). The dependent variable is dichotomous, with 0 above the health poverty line and 1 below it. The study uses a logit model for data analysis, as the profile variable consists of probability values, with independent variables' influences decreasing as predicted probability approaches 0 or 1. The generalized probability form of the binomial logistic regression model is specified in equation 10,

$$ln\left[\frac{p}{1-p}\right] = 0 \leq 1 \quad 10$$

Where p is the probability that an event occurs, $\frac{p}{1-p}$ is the odds ratio, and $ln\left[\frac{p}{1-p}\right]$ is the log of the odd ratio, and can also be regarded as logit. As such, for the purpose of the coefficient of results and interpretation in this study, p is a function of economic determinants.

Table 3: Definition of Economic Independent Variables

Variables	Definition	Variable measurement	Type
Occupation	Occupation of the head of the household.	0 = Self-Employed 1 = Paid Employed	Dummy
Income	Log of per capita income includes first and rental income, pension, income in kind, second job, other employment, and remittances received throughout the last 12 months.	Below ₦35,000 (1 if yes and 0 if above or otherwise)	Continuous
Job skill	Head of household job skill.	0 = Skilled 1 = Unskilled	Dummy

Source: Author's Compilation.

Thus, the results of the data obtained from the respondents were coded and analysed with the use of STATA statistical software.

4. Results and Discussion

4.1 Health Poverty Status of Ibonwon Township, Eredo LCDA, Epe, Lagos State

Table 4 presents the health poverty levels, intensity, and index (HPI) at different poverty K-cutoffs. The K-cutoff ranges from 0 to 100%, with H decreasing and A increasing. These patterns are based on the weighted deprivation matrix with censoring, indicating the percentage increase in

poverty cut-off by households with more deprivation. The average intensity measures the average of multidimensionally poor people. As the K-cutoff increases from 10 to 100%, HPI also decreases.

Table 4: Headcount, Average Intensity and Health Poverty Index at Different K-Cutoffs

K-Cutoff (%)	Headcount (H)	Average Intensity (A)	Health Poverty Index (HPI)
0	0.9732	71.6973	69.7758
10	0.9732	71.6973	69.7758
20	0.9565	71.4464	68.3385
30	0.9097	69.4398	63.1694
40	0.8428	68.1856	57.4668
50	0.8161	66.6806	54.4180
60	0.8127	66.6806	54.1913
70	0.7793	64.3812	50.1723
80	0.3277	25.2508	8.2747
90	0.2341	23.2023	5.4317
100	0.0133	1.1287	0.0150

Source: Author's Compilation.

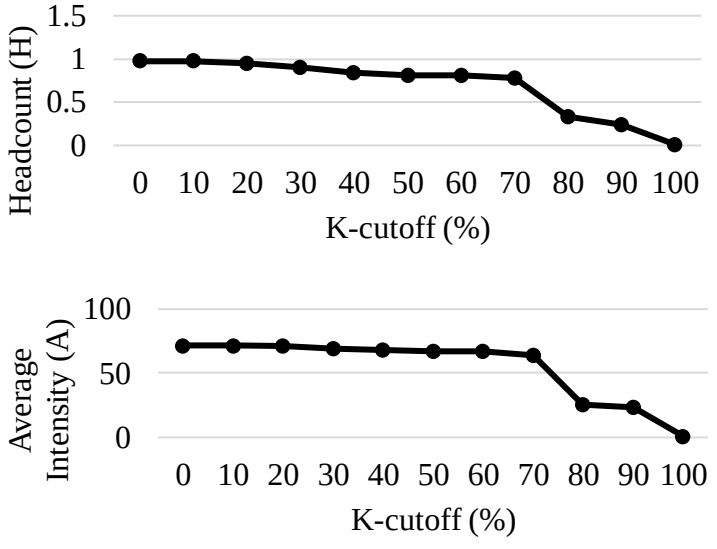

Figure 1: Trend on Headcount (H) and Average Intensity (A) Across the Indifference K-Cutoff

Source: Author's Compilation.

Figure 1 showed a decreasing trend in headcount and average intensity across the K-cutoff in Epe LGA, Lagos State, with the latter showing a similar trend from 0-100% K-cutoff.

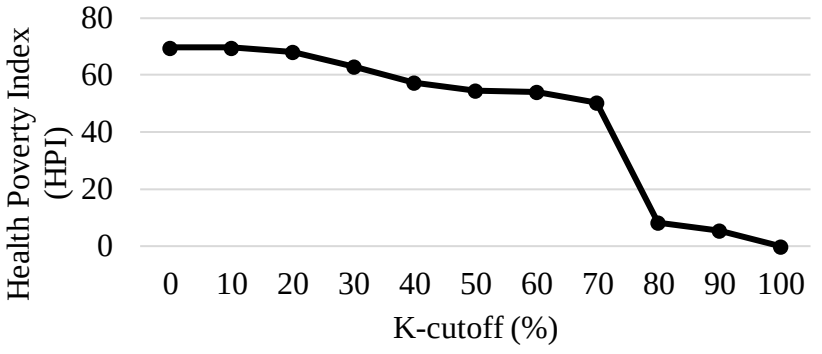

Figure 2: Trend on Health Poverty Index (HPI) Across the Indifference K-Cutoff
Source: Author's Compilation.

The health poverty index (HPI) in Ibonwon Township, Eredo LCDA, Epe LGA, Lagos State, shows a decreasing trend from 0-100% K-cutoff, indicating a deteriorating trend. This trend is consistent with previous figures, indicating a need for further action.

4.2 Pre-estimation Technique

The pre-estimation technique involves the descriptive statistics and correlation matrix of analysed the economic determinants of health poverty in Ibonwon Township, Eredo LCDA, revealing that the mean values for household occupation, income, and job skills were within the minimum, maximum values and the correlations between and across all observations.

Table 5: Descriptive Statistics and Correlation Matrix of Economic Determinants

Variable	Mean	Std. Dev.	Minimum	Maximum	Obs.	HO	Y	JS
HO	2.5953	0.4917	2	3	300	1.0000		
Y	0.9967	0.2088	0	3	300	0.0655	1.0000	
JS	3.3378	1.3297	1	7	300	0.0513	0.0202	1.0000

Source: Author's Compilation.

The economic determinants of health poverty are normally distributed, as their mean values fall within the ranges. The correlation matrix revealed a positive relationship between income and job skills in Ibonwon Township,

Eredo LCDA, Epe, Lagos State, indicating a positive regressor for household occupation. Also, the results revealed that occupation disparity among household heads directly impacts income and job skills within the household.

4.3 Test of Hypotheses

The study conducted in Ibonwon Township of Eredo LCDA, Epe LGA, Lagos State, found that the likelihood of households experiencing health poverty due to the head of household occupation is not significant at 5%. The study suggests that if the head of household is self-employed, health poverty will decrease by 62.7.9%, but if employed, the severity of health poverty will increase by 10.24%. This suggests that as the deprivation of health poverty decreases, the severity increases. However, the study found that household occupation does not have a significant effect on health poverty in Ibonwon Township of Eredo LCDA, as the indicator is not significant at 5%

Table 6: Logistic Regression Results of Economic Determinants on the Health Poverty

Variables	Deprivation of Health Poverty (DHP)		Severity of Health Poverty (SHP)	
	Coefficient	Odds Ratio	Coefficient	Odds Ratio
HO	0.6449	1.9058	0.2359	1.2661
	[0.5749]	[1.0958]	[0.3728]	[0.4720]
Y	-0.1023	0.9027	-0.0438	0.9572
	[1.2381]	[1.1176]	[0.7472]	[0.7152]
JS	0.2254	1.2528	0.3356**	1.3988**
	[0.2177]	[0.2727]	[0.1464]	[0.2048]
Constant	-6.8815	0.0010	-0.0438	0.1138
	[8.2513]	[0.0085]	[0.7472]	[0.5867]
Observations	299	299	299	299

, **, * are 10%, 5%, and 1% level of significance respectively, while [] are standard error.*
Source: Author's Compilation.

The study found that the likelihood of households in Eredo LCDA being deprived of health poverty is not significant at 5%, and the probability of severe health poverty due to household income is also not significant at 5%. The results indicate that income differences among heads of households in Ibonwon Township reduce the deprivation of health poverty by 1.9% and decrease the severity of health poverty by 1.9%. The result revealed that the extent to which health poverty is deprived decreases in relation to its severity implying that, the severity of health poverty on the sampled households differs

in relation to their income. This is supported with the findings of Teka *et al*. (2022).

Low labour force participation below ₦35, 000 also affects the likelihood of health poverty. Job skill also has a significant effect on health poverty deprivation and severity in Ibonwon Township. Unskilled heads of households reduce health poverty deprivation by 47.4% and increase the severity of health poverty by 14.57%. As such, this is in relation with the stance of Buheji *et al.* (2020). As such, particularly, the study concludes that the economic status of the household has a detrimental and substantial effect on health poverty outcomes, with job skill having a negative and significant level of 5%. This is in line with the findings of Bauer and Sousa-Poza (2015); and Prina (2015).

5. Conclusion and Recommendations

The study suggests that improving access to affordable medical facilities, qualified doctors, proper infrastructure, and health service awareness can help eliminate health poverty in Lagos State. However, reducing family size may not always lead to a decrease in health poverty severity. The study also emphasizes the complexities of the relationship between income, labour force participation rates, and life-cycle theory. Income, particularly from higher labour force involvement, is linked to a reduction in health poverty severity. The study also highlights the impact of job skill on deprivation and health poverty severity. The study concludes that economic status and occupational skill are key drivers of health poverty, emphasizing the importance of economic well-being in alleviating health poverty consequences.

The study suggests that education plays a crucial role in eliminating health poverty in Ibonwon township and other rural areas in Lagos State. It emphasizes the importance of literacy in raising awareness about health facilities and promoting better food and medical services. The study also highlights the role of females in addressing health poverty, suggesting that the Lagos State Government's Ministry of Wealth Creation should consider them in health policies and interventions. Also, the ministry should ensure that socioeconomic policies should be created to support long-term, high-quality, and productive employment, particularly in rural areas. Geographical targeting, particularly in rural areas, can be an effective approach to combat health poverty. This approach is cost-effective and can be achieved by providing technology innovation, physical infrastructure, and financial resources in underdeveloped rural and zonal areas. These recommendations aim to contribute to the government's efforts to reduce health poverty in Ibonwon township.

References

Alkire, S., Conconi, A., & Roche, S. (2014). Multidimensional poverty index 2014: Brief methodological note and results. University of Oxford. Department of International Development, Oxford Poverty and Human Development Initiative, Oxford, UK.

Bauer, J. M., & Sousa-Poza, A. (2015). Impacts of Informal Caregiving on Caregiver Employment. *Health, and Family*, 8, 113–145.

Buheji, M., da Costa Cunha, K., Beka, G., Mavric, B., De Souza, Y. L., da Costa Silva, S. S., Hanafi, M., & Yein, T. C. (2020). The extent of covid-19 pandemic socio-economic impact on global poverty. A global integrative multidisciplinary review. *American Journal of Economics*, *10*(4), 213-224.

Chen, C., & Pan, J. (2019) The effect of the health poverty alleviation project on financial risk protection for rural residents: Evidence from Chishui city, China. *International Journal for Equity in Health*, *18*, 1-16. https://doi.org/10.1186/s12939-019-0982-6

Chi, X. X., Liu, X. H., & Zhang, Z. Z. (2022). Measuring multidimensional health poverty in China. *Frontiers in Public Health*, *9*, 786325.

Chung, G. K. K., Dong, D., Wong, S. Y. S., Wong, H., & Chung, R. Y. N. (2020). Perceived poverty and health, and their roles in the poverty-health vicious cycle: A qualitative study of major stakeholders in the healthcare setting in Hong Kong. *International Journal for Equity in Health*, *19*, 1-13.

Clarke, P., & Erreygers, G. (2020). Defining and measuring health poverty. *Social Science & Medicine*, *244*, 112633.

Goldman, D. P., & Lakdawalla, D. N. (2005). A theory of health disparities and medical technology. *Contributions in Economic Analysis & Policy*, *4*(1), 1395-1395. https://doi.org/10.2202/1538-0645.1395

Goldman, D. P., & Smith, J. P. (2002). Can patient self-management help explain the SES health gradient? *Proceedings of the National Academy of Sciences*, 99 (16), 10929–10934.
doi: 10.1073pnas.162086599

Grossman, M. (1972). *The demand for health: A theoretical and empirical investigation*. Columbia university press.

Iqbal, N., & Nawaz, S. (2017). Spatial differences and socioeconomic determinants of health poverty. *The Pakistan Development Review*, *56*(3), 221-248. http://www.jstor.org/stable/44986416

Jia, H., Sai, X., Su, Y., & Huang, Y. (2022). Measurement and decomposition of the health poverty of rural residents in China. *International Journal of Environmental Research and Public Health*, *19*(19), 12876. https://doi.org/10.3390/ijerph191912876

Kahouli, S. (2020). An economic approach to the study of the relationship between housing hazards and health: The case of residential fuel poverty in France. *Energy Economics*, *85*, 104592.

Meh, C., Thind, A., Ryan, B., & Terry, A. (2019). Levels and determinants of maternal mortality in northern and southern Nigeria. *BMC Pregnancy and Childbirth*, *19*, 1-13.

Multidimensional Poverty Peer Network (2018). National multidimensional poverty index for Nigeria. *MPPN. November*, *6*, 2018. Retrieved from https://www.mppn.org/wp-content/uploads/2018/11/MPPN-2018-Concept-Note.pdf on 17th July, 2023.

Oshio, T., & Kan, M. (2014). Multidimensional poverty and health: Evidence from a nationwide survey in Japan. *International Journal for Equity in Health*, *13*(1), 1-11.

Oxford Poverty and Human Development Initiative (OPHI). (2020). Office, U. N. D. P. H. D. R., Poverty, O., & Initiative, H. D. (2019). *Global multidimensional poverty index 2019: Illuminating inequalities (OPHI Report)*.

Prina, S. (2015). Banking the poor via savings accounts: Evidence from a field experiment. *Journal of development economics*, *115*, 16-31.

Sadath, A. C., & Acharya, R. H. (2017). Assessing the extent and intensity of energy poverty using multidimensional energy poverty index: Empirical evidence from households in India. *Energy Policy*, *102*, 540-550. https://doi.org/10.1016/j.enpol.2016.12.056

Sen, A. K. (1980). *Equality of what?* In S. McMurrin (ed.) Tanner Lectures on Human Values, Cambridge: Cambridge University Press.

Simões, N., Crespo, N., Moreira, S.B., & Varum, N.L. (2016). Measurement and determinants of health poverty and richness: Evidence from Portugal. *Empir Econ 50*, 1331-1358.

Teka, A. M., Woldu, G. T., & Fre, Z. (2022). Status and determinants of poverty and income inequality in pastoral and agro-pastoral communities: Household-based evidence from Afar Regional State, Ethiopia. In *Social Protection, Pastoralism and Resilience in Ethiopia* (pp. 83-115). Routledge.

Tesfaye, G. W. (2013). *Rural household's poverty and vulnerability in Amhara region: Case study in GubalaftoWoreda* (Doctoral dissertation, Mekelle University).

Tripathi, S., & Yenneti, K. (2020). Measurement of multidimensional poverty in India: A State-level analysis. *Indian Journal of Human Development*, *14*(2), 257-274.

Ubi, P., & Ndem, B. (2019). Poverty and health outcomes in Nigeria. *International Journal of Economics and Financial Issues*, *9*(6), 132-141. https://doi.org/10.32479/ijefi.8704