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Determinants of Uptake of Community-Based Health Insurance in the Bamenda Ecclesiastical Province Health Assistance

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Abstract

This study was aimed at identifying the determinants of the uptake of Community-Based Health Insurance within the Bamenda Ecclesiastical Province Health Assistance (BEPHA) of Cameroon. To meet this objective, data from 2043 structured questionnaires administered in the partner health facilities of the Bamenda Ecclesiastical Province Health Assistance was used. Stata 14.2 was used to process the data. It adopted the logit model to analyse the data. While age, level of income, religion and marital status showed positive and significant relationship with adherence, level of education, place of residence and distance to the nearest affiliated health facility were found to be negatively related to insurance uptake. In order to increase rate of adherence for people who are between 30 and 49 years of age, we recommended that government and stakeholders should work in synergy with insurers to reduce the insurance premiums for those in this age group. Policies to ensure balanced regional development should be implemented to the later with more emphasis on infrastructural development of rural areas so that they can experience increase in their incomes and so demand for better health services. Specifically, the development of infrastructures like roads, electricity and others will cause the creation of more job opportunities for the rural settlers as well as taking their products to the market in exchange for incomes which will in turn permit them to afford insurance premiums to adhere.

Keywords: Community-Based Health Insurance, uptake, determinants

1. Introduction

Achieving Universal Health Coverage (UHC) was one of the targets set by nations worldwide when adopting the Sustainable Development Goals (SDGs) in 2015. The United Nations General assembly high level meeting on UHC in 2019 reaffirmed this commitment (WHO, 2021). It is worth noting that attempts by countries to move towards UHC are a pathway for movement towards other health-related targets and other goals. Good health is vital for learning, earning, escape from poverty and equally a foundation for long-term economic development. Universal health coverage means that all people have access to the health services they need, when and where they need them without financial hardship (Boerma et al., 2014). Community-Based Health Insurance Schemes (CBHIS) are key actors in promoting the health access philosophy enshrined in the definition of UHC. The clarion call for universal improvement on health has been earmarked amongst others as a United Nations

Millennium Development Goal (MDG) endorsed by 189 countries at the United Nations Summit of the year 2000.

Generally, CBHIS are organised and run by local community organisation. The CBHIS plan institutes agreements with various health providers, thereby creating a network of facilities. Most schemes cover basic health care services such as antenatal care, deliveries, consultations, child health care and family planning services while some schemes may also cover costs of hospital treatment. The value of CBHIS is that they engage community members as enrolees and volunteers, guarantee that health services meet community needs, and make rudimentary health care accessible and affordable to members by pooling their resources and sometimes supplementing them with external funds (Kumar et al., 2011). Noubiap et al. (2014) document that since the mid-90s, when many governments and international organisations started encouraging CBHIS, such schemes have been growing in number in sub-Saharan Africa plus other regions of the world. In West and Central Africa, the number of CBHIS grew from 76 in 1997 to more than 800 by 2004 and CBHI is now part of the national health financing strategy in Benin, Ghana, Rwanda, Senegal and Tanzania. Cameroon recorded 60 CBHIS nationwide in 2005, covering less than 1% of the population. In 2006, the Cameroon government approved a national strategy aimed at creating at least one CBHIS in each health district and covering at least 40% of the population by 2015.

Community-Based Health Insurance Schemes ought to offer reliable and easy access to quality health care over the world, lower costs to provider, lead to a higher demand for services by managing health care costs and provide access to basic health for the poor and those in the informal sector (Ekman, 2004). However, Adebayo et al (2015) show that in low and middle income countries, despite the fact that CBHI may be helpful in addressing the issue of improving access to health services for the poor and informal workers, uptake of Community-Based Health Insurance has been hindered by a number of factors making a large proportion of persons reluctant to enrol into a local CBHI hence underutilisation of health care due to lack of resources in the healthcare system. This study is therefore justified in that identifying the main factors affecting membership will be useful for improving CBHI coverage. The objective of this paper is to identify the determinants of uptake of CBHI in a country such as Cameroon, especially in the North and South West regions plagued by a conflict. Knowledge of them will help public authorities and development partners to formulate and implement policies geared at guaranteeing a means of living for the unprotected people.

This paper attempts an answer to the above question by assessing the determinants of uptake of CBHI in the Bamenda Ecclesiastical Province Health Assistance (BEPHA).

This study is peculiar because it carried out a more in-depth analysis of the determinants of adherence by splitting most of the determinants into categories that produced more detailed results than the other studies (e.g., Oraro et al. (2018); Cheno et al. (2021); Noubiap et al. (2014)). In addition, it covers the entire BEPHA (Bamenda Ecclesiastical Province Health Assistance) scheme including Bamenda, Kumbo, Mamfe, Kumba and Buea, unlike others and makes use of recent primary data collected from partner health facilities under the auspices of the Bamenda Ecclesiastical Province in the North and South West Regions of Cameroon.

The rest of the paper is organised as follows; section two gives a review of relevant literature including conceptual and empirical literature. Section three dwells on the methodology and data used. Section four presents and discusses the empirical results; summary statistics and logistic regression results. The fifth section concludes the study with a summary and recommendations.

2. Literature Review

2.1 Conceptual Literature

Community-Based Health Insurance (CBHI), (micro or local health insurance) deals with the direct involvement of communities in health financing. It is designed to protect the poor from out-of-pocket expenses and improve access and involvement in health care. A CBHI is any not for profit making insurance scheme that is primarily in the informal sector and formed on the basis of a collective pooling of health risks and in which members participate in its management. It involves pooling of resources by members having common health problems and needs to make provision for health services and health care by providers (Carrin et al., 2005). Such pooling of resources usually has the advantage of creating financial benefits since resources get shared between healthy and sick, rich and poor, and also ensures fairness in contribution and equity in access to health services. CBHI has the likelihood of providing quality health care especially among the poor by reducing financial constraints since it pools resources. It offers insurance in the public domain with the advantage of covering those who cannot afford private insurance (Dror et al., 2016).

Community-Based Health Insurance Schemes (CBHIS) make use of the principles of insurance to the social context of communities, given that their preferences are based on their structures and arrangements. These schemes help communities manage health care costs and give access to basic health care for the poor and other

vulnerable groups. The schemes are especially useful in reaching rural residents and the informal sector—the part of the society that is not easily insured—including self-employed people like farmers, petit traders and labourers. These people tend to be unable to pay out-of-pocket costs for basic health care at the point of service use, which if persistent, could possibly drive them into poverty (Abebe, 2010).

Community financing for health is a process whereby households in a community (the population in a village, district or other geographical area, or a social-economic or ethnic population group) finance or co-finance the current and/or capital costs associated with a given set of health services, thereby having some involvement in the management of the community financing scheme and organisation of health services. Several forms of community financing exist: a scheme can suggest the direct payment for health services or health service inputs such as drugs, the payment of user fees for services organised through the scheme, or Community-Based Health Insurance. CBHIS stand for voluntary health insurance schemes that can also be called mutual health insurance schemes, and medical aid societies or medical aid schemes. The common features, however, are that they are not out to make incomes and they apply the elementary principles of social health insurance (WHO, 2009).

2.2 Empirical Literature

The literature on determinants of uptake of CBHI is vast and diverse in approaches, variables used, and methodology. This in turn has led to diverse results. Although similar variables have been applied by different authors, the behavioural pattern of these variables have produced similar results in some cases and different results in others. Demographic characteristics have been applied in many of these studies and found to produce differing results.

Alesane and Anang (2018), Masengeli et al. (2017), Kimani et al. (2014, 2012) find a positive relationship between age and insurance uptake supported by Conde et al. (2022) and Moyehodie et al. (2022) as opposed to Médard and Rodrigue (2021) who find a negative relationship between age and insurance uptake. Also, the study of Masengeli et al. (2017) did not find any significant difference in health insurance uptake on the basis of gender of respondents. Other studies have however confirmed findings by Alesane and Anang on the basis of gender by reporting that women generally take up insurance more than men (Kimani et al., 2014; Kimani et al., 2012). Similar results concerning the education variable (education increases insurance uptake) were equally obtained by other studies (Conde et al., 2022; Bayked et al., 2021; Kimani et al., 2014; Kiplagat et al., 2013; Nyagero et al., 2012). Household size was equally seen to reduce insurance uptake as confirmed by Kimani et al (2014), Ibok (2012), Omodi, (2009), and Ozawa (2016). Contrary to these findings, Bayked et al. (2021) found a positive relationship between household size and insurance uptake while Maina et al. (2016) found no relationship between household size and health insurance uptake. Jutting et al. (2003) on their part found out that household income, religion, village characteristics and belonging to a particular ethnic group were most influential in the probability of participation. They concluded that the poorest of the poor had difficulties participating and that there was social exclusion due to religion and ethnic grouping. The positive influence of income was equally highlighted by Bayked et al., (2021) and Conde et al., (2022). Nshakira-Rukundo et al. (2019) added husband's employment in rural casual work, social capital and connectivity, more positive perceptions on insurance, burial group size and number of burial groups in a village, access to information and knowledge of health insurance premiums as significant determinants of enrolment.

Mirach et al. (2019) looked at a different set of determinants of adherence. Results showed that out of the participants, 58% were CBHI members and that family size, average health status, chronic disease, scheme benefit, package adequacy, perceived health service quality, CBHI awareness, community solidarity and wealth were significant determinant factors for enrolment in the Community Based Health Insurance Scheme. While Bayked et al., (2021) followed the same reasoning looking at awareness and illness experience, Akafu et al. (2023), Wassie et al. (2023), Shah et al. (2023) & Bayked et al. (2021), found out that service quality is a significant and positive determinant of insurance uptake. Wassie et al., (2023) added the presence of chronic disease as a determinant of uptake. Duku et al. (2018) went specific and investigated the determinants of health insurance enrolment among working-age adults in two regions in Ghana. The study was aimed at investigating the differences in the determinants of enrolment between the Greater Accra and Western Region of Ghana. Results showed that age, sex, educational level, marital status, health status and travel time to nearest health facility determined enrolment in both regions and among the rural and urban residents within the regions. Hence disparities were socio-economic.

Looking at a different dimension, Fadlallah et al. (2018) focused on the barriers to implementation, uptake and sustainability of Community-Based Health Insurance Schemes in Low and middle-income Countries (LMICs). They concluded that not only demographic characteristics influence these but also awareness and understanding of the concept of CBHIS, trust in scheme and scheme managers, perceived service quality, other family members enrolled in the scheme, social solidarity, community-level factors as well as systems-level aspects including governance, financial and delivery arrangement. While the aspect of trust in the scheme was equally highlighted

by Akafu et al. (2023) and Conde et al. (2022), awareness as a determinant of adherence was added by Wassie et al. (2023) and Bayked et al. (2021). Shewamene et al. (2021) confirmed the above finding and added health beliefs, perceived health status and limited health benefit rights as barriers to implementation of Community-Based Health Insurance Schemes.

Jehu-Appiah et al. (2011) in their study evaluated equity in enrolment in the National Health Insurance Scheme (NHIS) in Ghana and assessed the determinants of demand across socio-economic groups and found out that there is inequity in enrolment in the NHIS and significant differences in determinants of current and previous enrolment across socio-economic quintiles and that both current and previous enrolment was influenced by predisposing, enabling and social factors though different enrolment between rich and poor. This line of reasoning was closely followed by Oraro et al. (2018) who sought to understand the role BEPHA plays towards universal health coverage in the North West Region of Cameroon. He carried out a cross sectional household survey in the Bui and Donga-Mantung administrative divisions of the North West region of Cameroon and concluded that BEPHA membership is focused in rural areas, affiliation to BEPHA has an impact on the perceived health status of the insured population, and that BEPHA adherents recorded less out-of-pocket expenses.

Cheno et al. (2021) assessed the willingness of Cameroonian urban dwellers to subscribe and the amount to pay for voluntary or compulsory Community-Based Health Insurance in Douala and Yaoundé. The results showed that 46% of respondents were willing to join the compulsory Community-Based Health Insurance and 41% for the voluntary Community-Based Health Insurance. Furthermore, household income, working sector, chronic disease, health priority, and family size were factors mostly associated with the willingness to join these schemes. From the results, they concluded that city dwellers in Cameroon are ready to join and pay for community health insurance.

Golden Nkengmenche (2020) rather looked at life insurance and concluded that high cost of premiums, poor integrity, lack of disposable income, lack of country wide presence, poor customers, inefficiency in settling claims and poor distribution channels accounted for uptake of life insurance in Cameroon. Oraro et al. (2018) said household heads are more likely to enrol into voluntary health insurance if involved in social networks, regardless of gender. Women prioritise their direct knowledge of potential household health risks when evaluating the decision to enroll into voluntary health insurance and that income ultimately determines women's ability to participate in health insurance schemes. When purchasing health insurance, men prioritise their understanding of household health risks, which is linked to their education and age.

Noubiap et al. (2014) evaluated the knowledge, concern and preferences on CBHI schemes and their financial plan to cover health costs. The study was conducted in the Bonassama health district (BHD) of Douala. Results revealed that awareness on the existence of CBHIS was poor. Awareness of CBHIS was significantly associated with a high level of education. Only 4.4% of respondents had health insurance, and specifically 1.2% were involved in a CBHIS. However, 128 (86.2%) respondents thought that belonging to a CBHIS could facilitate their access to adequate health care, and were thus willing to be involved in CBHIS. Respondents would have preferred CBHI schemes run by missionaries to CBHI schemes run by the government or people of the same ethnic group. They therefore concluded that there is low participation in CBHIS among the informal sector workers of the Bonassama Health District.

From this literature reviewed above, this study comes in and adds to knowledge by carrying out an in-depth analysis of the determinants of adherence by splitting most of the determinants into categories that produced more detailed results than the afore examined studies. Furthermore, it englobes the whole BEPHA (Bamenda Ecclesiastical Province Health Assistance) scheme covering Bamenda, Buea, Kumbo, Mamfe and Kumba unlike others and made use of recent primary data collected from affiliated partner health facilities.

3. Methodology and Data Used

3.1 Data Used

In order to assess the determinants of uptake of CBHI, we opted to get information through the use of a questionnaire administered in the study area in May 2022 through partner health facilities. This data is useful because it contains relevant information that can be used to answer questions on the determinants of uptake of Community-Based Health Insurance. For the purpose of data collection, a total of 2500 questionnaires were administered to patients who visited partner health units of BEPHA for consultation or other reasons. After a meticulous data collection exercise in keeping with sampling technique, we succeeded to have 2050 questionnaires filled and returned. Conducting a thorough check of the quality of the filled questionnaires, 7 questionnaires were rejected on the basis of an alarming number of missing data. This left us with a response rate of 81.72% (2043 questionnaires). The income every month categories were regrouped from six to four as well as employment categories for best results.

3.2 Methodology

In this study, we draw on the works of Alesane and Anang (2018), Mirach et al. (2019) Nshakira-Rukundo et al. (2019) for the choice of our model. Thus, we focus on the logit model because the dependent variable, which is uptake of CBHI is binary.

The specification equation is as follows:

$$Y_i^* = \beta X_i + \varepsilon_i \qquad (1)$$

Where:

$Y_i^* =$ is the response latent variable

$X_i = explanatory\ variables\ determining\ Y_i^*$

$\beta = unknown\ parameters$

$\varepsilon i = random\ error\ term$

The relationship of the unobserved latent variable with the observed response variable (Y_i^*) is as follows;

$$Y_i^* = \begin{cases} 1\ if\ y_i^* > 0 \\ 0\ if\ y_i^* \le 0 \end{cases} \qquad (2)$$

For a binary choice model, the response variable (Y_i^*=Insurance uptake) takes the value Y_i^*=1 for individuals with insurance and Y_i^*=0 for individuals without insurance.

The area of study was the Bamenda Ecclesiastical Province, and precisely the BEPHA (Bamenda Ecclesiastical Province Health Assistance) scheme. BEPHA is a community-based health assistance scheme initiated by the Bishops of the Bamenda Church Province, in line with the millennium development goals (MDGs) and the 2002 health sector strategy (HSS) of the Republic of Cameroon (Oraro et al., 2018).

The purposive sampling technique was employed.

The independent variables in the model include age, income, place of residence, religion, gender, marital status, level of education, employment status and distance to the nearest affiliated health unit.

3.3 Description and Justification of Variables Used

Table 1.

Variable	Description	Justification	Expected sign
Adherence to BEPHA	It is a dummy variable taking the value of 1 for those who take up (adhere) to Community Based Health Insurance Scheme and zero (0) otherwise.	(Alesane & Anang, 2018)	Positive (+)
Age of the household head	This variable is categorical in nature and has 5 categories ranging from: less than 30yrs, 30-39yrs, 40-49yrs, 50-59yrs, 60yrs-above. The base category taken was less than 30yrs.	(Dror et al., 2016)	Positive (+)
Income of Household Head	Income ranges from 0frs, less than 199999frs, 200000-399999frs and 400000frs and above. The base category is no income.	Fadlallah et al. (2018)	Positive (+)
Place of residence	It comprises of two categories –Urban and Rural.	Adebayo & Uthman, 2015)	Positive (+) and negative (-)
Religion	It includes 4 Categories-Christian, Muslim, Animists, African traditionalists. (The base group is African traditionalists.	Shewamene et al. (2021)	Positive (+) and negative(-)
Sex of the household head	It is a dummy. 1 for male, 0 otherwise.	Dror et al. (2016)	Positive (+) and negative (-)
Marital Status	It includes 4 categories — married, divorced, single and widowed. The base category is single.	Alesane and Anang (2018)	Positive (+) and negative (-)
Level of education	This variable is categorical in nature with 4 categories: No formal education, primary education, secondary education, and university education. No formal education is the base category.	Maina et al. (2016)	Positive (+)

Employment Status	It includes 2 categories being Employed or unemployed.	Badu et al. (2018)	Positive (+)
Distance to the nearest affiliated Health Centre	It comprises of 5 categories. No distance, less than 1km, 1-5km, 6-10km and greater than 10Km.	Masengeli et al. (2017)	Negative (-)

4. Presentation and Discussion of Results

4.1 Summary Statistics

Table 2 presents summary statistics of the variables used in the logistic regression model. They are interpreted in percentages because variables have been treated as dummies.

Table 2. Summary Statistics of determinants of adherence to Community-Based Health Insurance Schemes

Variable	Obs	Mean	Std. Dev.	Min	Max
Adherence to BEPHA	2043	.576	.494	0	1
Age between 30-39	2043	.32	.466	0	1
Age between 40-49	2043	.21	.408	0	1
Age between 50-59	2043	.115	.319	0	1
60 years and above	2043	.076	.265	0	1
Income less than 199999	2043	.795	.404	0	1
Income between 200-399999	2043	.114	.317	0	1
Income from 400000 and above	2043	.024	.155	0	1
Urban residency	2043	.527	.499	0	1
Christian	2043	.729	.445	0	1
Muslim	2043	.137	.343	0	1
Animist	2043	.038	.192	0	1
Male	2043	.441	.497	0	1
Married	2043	.525	.5	0	1
Divorced	2043	.039	.193	0	1
Widowed	2043	.085	.278	0	1
Primary education	2043	.168	.374	0	1
Secondary education	2043	.299	.458	0	1
University education	2043	.365	.482	0	1
Employed	2043	.473	.499	0	1
Dist. less 1km	2043	.313	.464	0	1
Dist. 1-5km	2043	.295	.456	0	1
Dist. 6-10km	2043	.213	.409	0	1
Dist. 11km above	2043	.123	.329	0	1

Source: Computed by author from Stata.

From the table, we observe that 57.6% of respondents are adherents of CBHIS. 32% are of ages 30 to 39 years, 21% of ages 40 to 49 years, 11.5% of ages 50 to 59 years, while only 7.6% of them were above 60 years of age. Respondents who earned income less than 199999frs, were 79.5%, those with income between 200000 and 399999 were 11.4% compared to those with income equal to or above 400000frs who were 2.4% of them. 52.7% of respondents lived in the urban area, 72.9% of them were Christians, 13.7% Muslims and 3.8% animists. Male respondents were 44.1%. Of them, those married were 52.5%, 3.9% divorced and 8.5% widowed. Those with primary education were 16.8%, 29.9% secondary education holders, and 36.5% tertiary degree holders. Also,

47.3% of respondents were Médard and Rodrigue (2021) employed, 31.3% lived within distances less than 1km to the nearest affiliated health centre, 29.5% covered distances between 1 and 5km to be able to consult, 21.3% covered distances between 6 and 10km while 12.5% lived at 11km and above from the nearest affiliated health centre.

4.2 Logistic Regression Results of the Determinants of Uptake (Adherence) of CBHI

Table 3 presents logistic regression results of the determinants of uptake (adherence) of CBHI used in the logistic regression model.

Table 3. Logistic regression results of the determinants of uptake (adherence) of CBHI

Variable	Adherence_	Adherence_
	Coefficient	**Odds ratio**
Age between 30-39	0.643***	1.902***
	(0.136)	(0.256)
Age between 40-49	0.305**	1.357**
	(0.151)	(0.202)
Age between 50-59	-0.0523	0.949
	(0.182)	(0.168)
Age above 60	0.118	1.126
	(0.208)	(0.238)
Income less than199999	0.624***	1.866***
	(0.204)	(0.386)
Income between 200_399999	0.266	1.305
	(0.250)	(0.331)
Income above400000	0.681*	1.976*
	(0.371)	(0.738)
Urban residency	-0.764***	0.466***
	(0.102)	(0.047)
Christian	0.0894	1.094
	(0.184)	(0.189)
Muslim	0.562***	1.754***
	(0.223)	(0.368)
Animist	0.799**	2.224**
	(0.327)	(0.712)
Male	0.0417	1.043
	(0.100)	(0.104)
Married	0.0456	1.047
	(0.115)	(0.12)
Divorced	0.582**	1.79**
	(0.289)	(0.493)
Widowed	-0.167	.846
	(0.209)	(0.167)
primary education	-0.462***	.63***
	(0.179)	(0.108)
secondary education	-0.447***	.64***
	(0.157)	(0.101)

university education	-0.946***	.388***
	(0.154)	(0.059)
Employed	0.165	1.179
	(0.105)	(0.123)
Distance less than 1km	-0.397*	.673*
	(0.223)	(0.148)
Distance between 1-5km	-0.103	.902
	(0.224)	(0.199)
Distance between 6-10km	0.132	1.141
	(0.232)	(0.262)
11km and above	0.0679	1.07
	(0.249)	(0.263)
Constant	0.312	1.366
	(0.338)	(0.448)
Observations	2,043	2,043
LR chi2(23) =	262.51	
Prob > chi2 =	0.0000	
Pseudo R2 =	0.0943	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Computed by author from Stata.

4.3 Discussion of Results

From the results above, we find coefficients and odds ratios of the determinants of uptake of Community-Based Health Insurance.

The age of the respondents was grouped into 5 categories, with those who are less than 30 years of age considered as the reference category. While those aged between 30-39 years and 40-49 years were positively and significantly related to adherence at 1% and 5% with likelihood of adherence of 90.2% 35.7% respectively following their odds ratios, respondents who were 60 years and above of age were equally positively but not significantly related to adherence. Household heads who were between 50 and 59 years of age were however negatively and not significantly related to adherence. This is in line with the findings of Moyehodie et al. (2022), Masengeli et al. (2017), Kimani et al. (2014) & Kimani et al. (2012) who confirmed the existence of a positive relationship between age and uptake of health insurance. The findings of Alesane & Anang (2018) and Adebayo et al. (2015) equally note that enrolment (uptake) is higher among younger people. Younger people have a higher enrolment. This can be explained by the fact that the younger are healthier and less risky than older people. For this reason, insurers charge them a lower premium, which gives them the opportunity for greater enrolment.

In terms of income, the respondents were divided into 4 groups with no income as the base category. All income groups showed a positive relationship with adherence. Respondents who earned less than 199999frs and 400000frs and above showed significant relationship with adherence at 1% and 10 % with the likelihood of adhering of 86.6% and 97.6% respectively following their odds ratios. Results are supported by Conde et al. (2022), Bayked et al. (2021), Duku et al. (2018), Cheno et al. (2021) and Jutting et al. (2003), who found out that increase in household income had a positive effect on household's desire to adhere. This is because premiums are more affordable. At 199999frs of income, people may be afraid of higher expenditure considering an entire household, hence decide to take up insurance to shield them from such high health care costs.

Place of residence was split into two categories, with rural residency being the base. Living in the urban area shows a negative and significant (1%) relationship with enrolment with the likelihood of not adhering of 53.4% following the odds ratio. Oraro et al. (2018) found out that BEPHA membership is focused in rural areas. Clients in the urban setting have higher incomes/wealth and are more likely to seek health care directly with the ability to pay health bills totally compared to rural residents. They are equally involved in more of preventive care. This

finding contradicts Cheno et al. (2021) who concluded that city dwellers in Cameroon are ready to join and pay for community health insurance.

In terms of religious affiliations, the respondents were classified into 4 groups, viz, African traditionalists, which was used as the reference group, Christians, Muslims and Animists. Looking at adherence to BEPHA, Muslims and Animists showed a positive and significant likelihood to adhere of 75.4% and 122.4% given their odds ratios at 1% and 5% levels of significance respectively, while Christians, though positive, is not significant. The highly significant level of Muslims can be explained by the American Affordable Care Act (ACA) which provides that taking up community health insurance is an opportunity for Muslims to put their faith in practice by better looking after their health as well as the health of other people in the community. The Prophet Muhammad equally explains in a hadith that the Muslim's body has a right over him (Sahih Muslim). He explains that because Allah has blessed and entrusted them with a physical body, they ought to take adequate care of it and one of such ways to take care of this physical body is by taking up health coverage which enables them to better afford routine appointments with primary care physicians who might provide meaningful counsel on maintaining a healthy lifestyle. This act of taking care of one's health is considered as a way of giving thanks to God. Another hadith considers that believers are like a single body—The rest of the body joins in the suffering if one part feels pain (Sahih Bukhari). In addition, Islam equally puts an accent on the need to take care of other people in the society. The Quran highlights that whatever wealth a Muslim spends should include taking care of orphans, needy, parents and others and adds that such goodness is known by God (Quran 2:215), reason why many Muslims receive health insurance through their spouses and parents. Animists are likely to shield themselves via insurance since they do not belief in the protection of a supreme being.

Gender was divided into two groups with females as the reference category. Being a male was positively but not significantly related to adherence (Schneider & Diop, 2001 & 2004). This is in contrast to the findings of Jutting (2003) and Dong et al. (2003). This implies that those who are males are more likely to adhere compared to females. Clearly, the odds ratio of 1.043 for being a male implies that males are 4.3% more likely to adhere compared to females. This is likely because males engage in riskier occupations, hence the possibility of benefiting sooner for a male than for a female is statistically much higher. Men are equally proven biologically to have a lower lifespan, hence necessity to make maximum use of such years by living healthy, hence likely to take up more insurance coverage.

As regards marital status, categories were 4 in number, including being single (as the base), married, divorced and widowed. While being divorced depicted a positive and significant (5%) relationship with adherence with a likelihood of adhering of 79%, being married equally revealed a positive, though not significant association with adherence as contradicted by being widowed which appears to be negatively connected to up take. Results for divorced can be supported by the financial protection to be provided by the scheme at this stage of life since they can no longer rely on a partner for a health insurance plan. Widows may adhere because of lack of dependent coverage.

All education variables are negative (Médard & Rodrigue, 2021) and significant at 1%. This is contrary to expectations where we assume that educated people should be aware of the importance of health insurance, adhere to it so as to enhance their health status. Such negative attitude is based on their awareness of their health capital, which they attempt to consolidate because of their education. They could equally be reluctant to take up health insurance because of the availability of sure income in case of illness. Their education equally exposes them to the notion that insurers may not act as promptly as they promise. This finding is equally supported by the fact that educated people are more aware and engage more in preventive care—they do check-ups, carry out vaccination (immunisation), do flu shots as well as some tests and screenings regularly. This is backed by the fact that education translates to better and more stable jobs with higher income that allows families to accumulate wealth that can be used to improve health. Such routine care goes a long way to detect and prevent serious diseases and medical problems before they become major. Hence, these educated persons may not need to enrol in insurance schemes since they might hardly get sick because of their involvement in primary care. This finding is supported by Grossman (1972) in his model of demand for health. He notes in this model that individuals invest in health capital because health is a major determinant of the amount of time available for market and non-market activities. Health is also a consumption commodity. He equally says that education is expected to increase investment in health-especially preventive health care. The finding is equally supported by Cropper (1977) in his extension of the Grossman model to include uncertainty. He highlights that individuals demand preventive care to decrease their probability of illness. Mulder et al (2000) highlight that education is correlated with the use of preventive care especially for adult women. Cutler and Lleras-Muney (2008) say that each year of schooling is associated with an increase in 1.7% points in the likelihood of receiving a flu vaccine. Sambamoorthi and McAlpine (2003) say more schooling is associated to more cholesterol checks. Manski & Magda (1998) say more schooling leads to more visits to the dentist. This is contrary to the findings of Alesane and Anang (2018) which state that insurance uptake increases with level of education and Médard and Rodrigue

(2021) who found out education is positively correlated with membership of an association and subscription to a micro insurance.

Being employed is positively but not significantly related to adherence. This means that those who are employed are more likely to adhere compared to those who are not employed. Precisely, the odds ratio of 1.179 for employed implies that the employed are 17.9% more likely to adhere compared to those who are not employed. Income earned translates into payment of bills out of pocket.

Distance to the nearest affiliated health facility was included to see if this will have an effect on adherence. Distance was grouped into 5 categories with no distance as the reference category. While the categories of 1-5km were negatively related to adherence, the last two categories, 6-10km and 11km and above were positive but not significant. The category, less than 1km is however significant at 10% indicating that those who live at less than 1km to the nearest affiliated health establishment are 32.7% less likely to adhere as indicated by the odd ratio of 0.673. The implication of these results is that people living at shorter distances are less likely to adhere as contrasted to those who live at longer distances, who are more likely to adhere as indicated by the odds ratios of 1.141 and 1.07 for distance between 6-10km and 11km and above respectively. These results contrast the findings of Boyer et al. (2021) who finds out that geographic distance prevents people from accessing information concerning health insurance schemes and discourages those who are informed. Longer distances are likely to attract outreach programmes involving health care attendants on the spot and or transportation means as well as other ambulatory services that permit insurance agents to meet the people on the spot and get them enrolled though results are not significant.

The Chi2 statistic of 0.0000 shows that results are very robust. The Pseudo R2 however of 9.43% is very low because the data under consideration is cross sectional.

5. Conclusion and Recommendation

The objective of this paper was to assess the determinants of uptake of Community-Based Health Insurance in the Bamenda Ecclesiastical Province Health Assistance (BEPHA). Insurance uptake being binary, we opted for the logistic model in which our independent variables were age, income, place of residence, religion, gender, marital status, level of education, employment status and distance to the nearest affiliated health establishment. The results of the logistic regression showed that some of the variables were erratic. While the age groups of 30-39 and 40 to 49years showed significant likelihood of uptake of community insurance, the other age groups did not show any significant likelihood of uptake. In fact, the age group 50-59years is less likely to take insurance. The above trend is observed in the income variable where people with income less than 199999 and above 400000frs are more likely to take up insurance. Contrary to our expectations, people at all the education levels are significantly less likely to take insurance. This was attributable to their ability to understand their health status or being able to pay out-of-pocket because of good job opportunities. The rest of the variables either corroborated other studies in the literature or were contradictory.

On the basis of the above results, it is suggested that in order to increase rate of adherence for people who are between 30 and 49 years of age, that is the younger age group, and lower income earners, the government and stakeholders should work in synergy with insurers to reduce the insurance premiums for those in this age group and income bracket. This can be achieved by providing a special package to subsidise insurance premiums for these groups of people in society. Policies to ensure balanced regional development should be implemented to the later with more emphasis on infrastructural development of rural areas so that they can experience increase in their incomes and so demand for better health services. Specifically, the development of infrastructures like roads, electricity and others will cause the creation of more job opportunities for the rural settlers as well as taking their products to the market in exchange for incomes which will in turn permit them to afford insurance premiums to adhere. Special packages for Muslims, Animists and divorced will equally enhance enrolment.

Jel Classification: 113

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