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## **Enrolment and Micro Health Insurance Growth in Cameroon: the case of BEPHA Scheme in the Bamenda Metropolis, Cameroon**

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### **ABSTRACT**

**Introduction:** Micro Health Insurance Schemes such as BEPHA have been envisaged by the World Health Organization as a means to facilitate the achievement of universal health coverage and reduce catastrophic out of pocket payment for health care in the developing countries especially in Sub Saharan African countries including Cameroon.

**Purpose:** The objective of this study was to investigate the effect of enrollment on the growth of Micro Health Insurance schemes in Bamenda.

**Methodology:** The causal and descriptive design was adopted for this study. The study area was the Bamenda Metropolis where the MHIS, BEPHA exists. The subjects of the study consisted of people of both sexes between ages 14 and 70 years in Bamenda 1, 2, and 3 councils who had heard about or were registered members of BEPHA. Questionnaires were administered using random sampling techniques to 400 respondents and 10 staffs of BEPHA were interviewed. Frequencies, percentages and the multiple regression analysis were used to analyze data.

**Findings:** From the ten staff interviewed, 50% of them indicated that enrollment into BEPHA was average while 50% said it was low. The growth of BEPHA was said to be 50% (average) by 60% of the staff of BEPHA while 40% of them said it was low. Multivariate regression model analysis results showed that enrollment had a significant positive influence on the growth of BEPHA with an estimated standardized coefficients of ( $\beta=0.624$ ;  $p < 0.05$ ). The study overall revealed that enrollment with BEPHA, determine the variations in the growth of the scheme.

**Unique contribution to theory, practice and policy:** This study recommended that management of the scheme should amend some clauses within the scheme such as non-coverage of chronic health conditions, to attract more enrollment with BEPHA.

**Key words:** *Micro-health-insurance, Enrollment, Growth, Bamenda, Cameroon*

## I. Introduction

Micro Health Insurance also referred to as community-based health insurance, micro-health insurance, mutual health insurance, community-based health financing, or community health insurance is a form of micro-insurance in which resources are pooled to mitigate health risks and cover health care services in full or in part thereby reducing out of pocket health expenditure (Funds for NGOs, 2019). The scheme can be provided by government, a private insurance company, a Non-Governmental Organisation or a Community Based Organisation (Funds for NGOs, 2019).

Spaan et al.(2012) stated that various types of health insurance exist with different principles namely; National or social health insurance (SHI) which is based on individuals' mandatory enrolment, Voluntary insurance mechanisms which includes private health insurance (PHI), and community-based health insurance (CBHI) is based on the spirit of voluntarism. He further mentioned that various types of health insurance have different impacts on the populations they serve. For example, PHI is said to mainly serve the affluent segments of a population, but CBHI is often put forward as a health financing mechanism that can especially benefit the poor. While Adebayo et al. (2015) defined CBHI as the application of the principles of insurance by a defined community, bearing in mind the cultural and social context, which is directed by a community's choice and based on their arrangement and structures. The researcher added that "Mutual health organizations, community health funds, rural health insurance, micro insurance, revolving drug funds and community based prepayment scheme were all considered as synonyms".

Like every other community-based micro health insurance schemes wherein enrollment and renewal by adherents is voluntary, BEPHA faces the problem of low enrollment and retention rates. From 2010, the management of BEPHA drew up a strategic plan with a target of 80,000 adherents representing 2% of the population (at the time) in the Bamenda Church Province. It was projected that with this number of adherents (who are not adversely selected) paying their contributions (premiums) regularly each year, the scheme would be able to cover beneficiaries' health bills, operational and staff costs, and even realize some reserve (BEPHA Strategic Plan, 2010).

Even though BEPHA had more than 37.000 adherents in the year 2015/2016, with BEPHA in the Archdiocese of Bamenda alone registering close to 10,000 adherents (BEPHA Provincial End of Year Report 2016/2017), the scheme is presently experiencing very low rate of enrollments and renewals. In spite of the reforms undertaken to scale up enrollments, such as the introduction of Local Committee (LC) volunteers, reduction of annual contributions from 5,000 (\$9) to 4,000 (\$7.3) FCFA, improvement of health care coverage, and harmonization, the situation of BEPHA is not improving – with BEPHA Bamenda having just 6,655 adherents (BEPHA Provincial End of Year Report 2019/2020) – which makes one to question the sustainability of the scheme. One wonders on what could be responsible for this low enrollment and retention.

On the one hand, this could be blamed on the ongoing crisis in the North West and South West Regions of Cameroon; and on the other, it could be the result of poor management, bad governance and lack of legal framework for micro health insurance (MHIs) in Cameroon. In view of the present reality of BEPHA, the researcher decided to embark on this study to answer

the main research question – “What is the effect of enrollment on the growth of Micro Health Insurance in Cameroon; the case of BEPHA?”

## II. Literature

A concern that is central to the MHI literature in developing countries is why its demand has remained relatively low over the years. A situational analysis by Nde et al. (2019) on equity in the financing of health and providing financial protection against sickness revealed that only 6.46% of Cameroon's population is covered by a community health insurance scheme. This low coverage implies that a majority of the population continue to support their health expenditure through out of pocket payments.

This work makes use of the expected utility theory (EUT) which has been the most widely used theory in explaining the demand for health insurance. Odeyemi (2014) recalled that the expected utility hypothesis (due originally to Daniel Bernoulli 1738) states that individuals choose between alternatives to maximize expected utility. The expected utility states that a person's demand for insurance is reflected in their degree of risk aversion and preference for income certainty. The demand for insurance arises out of a choice between an uncertain loss with a probability when uninsured and a certain loss in the form of a premium when insured”. This theory is most suitable to this work as the choice to enroll or not to an insurance scheme is greatly influenced by the person's weighed risk when compared to benefit. This theory thus stipulates that when the weights or the risk surpasses the benefits, the individuals will not enroll and when the benefits surpass the risk, the individual will enroll to the scheme (Odeyemi, 2014).

For the last two decades, promoted by many governments and international organizations, community-based health insurance (CBHI) schemes have been growing in number in sub-Saharan Africa. In 2005 in Cameroon, there were only 60 CBHI schemes nationwide, covering less than 1% of the population. In 2006, the Cameroon government adopted a national strategy that aimed at creating at least one CBHI scheme in each health district and covering at least 40% of the population with CBHI schemes by 2015. Unfortunately, there is almost no published data on the awareness and the implementation of State initiated CBHI schemes in Cameroon (Noubiap et al., 2013). Adu-Sakyi (2016) further added that for the many rural and illiterate Ghanaians, the bureaucracy of the system seems daunting and the registration offices are often too far away. Despite determined efforts to enroll specific vulnerable groups, only 40% of the total population are currently active he said.

Moreover Adu-Sakyi (2016) cited that Ghana's National Health Insurance Schemes records some growth but that growth already looks unsustainable unless the vicious circle currently experienced is broken which includes failure of the administrators to raise and manage funds efficiently, prevent service providers withdrawing of their cooperation due to lack of remuneration in a timely fashion which in turn leads to members loss of trust and interest in the scheme. The researcher further stated that the two key issues confronting the scheme were the methods used to enroll new members (and to keep the old ones), and the methods used to raise, allocate and monitor funds.

Ito and Kono (2010) observed that there are common problems associated with micro insurance, which include: (1) low take-up rates, (2) high claim rates, and (3) low renewal rates. More so he said that this is explained on the basis of prospect theory, hyperbolic preference, and adverse selection. “The prospects theory makes an assumption that people are risk averse while evaluating gains and they become risk loving when it comes to loss” (Kahneman, Knetsch and Thaler, 1991). Gupta et al (2015) emphasizes that as insurance covers losses, people might act as risk loving and may not purchase insurance. Another aspect of it is undervaluing losses with low probability he said. Factors that influence enrolment or uptake of MHI included socioeconomic and demographic profile of the household, educational status, presence of sick person/s in a house hold, proximity of the households to the health facility, presence of pregnant women in household, presence of under-five children in household. Membership at development programmes offered by non-government organizations, Sex/gender of the main income earner of a household also influenced enrollment (Odeyemi, 2014).

The factors that affect uptake of and enrolment into MHIS in low and middle income countries as elicited from the Systematic review conducted by Adebayo et al., (2015) are Geographic location (rural or urban) - urban dwellers were willing to pay premium as compared with rural dwellers. The less educated were willing to pay less compared to the more educated. Wealthier households and individuals were more willing and able to pay more for health insurance than the less wealthy. Non-enrolled individuals collectively identified a lack of financial means as the primary reason for not enrolling in MHIS. Household size - larger households (six members and above) were willing to pay higher amounts than relatively smaller households. Marital status - Single individuals were more willing to pay premium than married. Health related factors: The quality of health care - Individuals or households that perceived quality of care as good were found to be more willing to pay than those who perceived the quality with less admiration. Household illness experiences - households that have recorded few sick members are less willing to pay than those with high number. Hence lower number of illness episodes in a specified period led to high dropout from the scheme. Health status - individuals with better health status were willing to pay less amounts for health insurance compared with individuals with poor health status. Results of Systematic reviews and Meta-analysis conducted by Dror et al. (2016) revealed that enrolment in CBHI were positively associated with household income, education and age of the household head (HHH), household size, female-headed household, married HHH and chronic illness episodes in the household.

### **III. Methodology**

The causal and descriptive design was adopted for this study. The study area was the Bamenda Metropolis where the MHIS, BEPHA exists. The subjects of the study consisted of people of both sexes between ages 14 and 70 years in Bamenda 1, 2, and 3 councils who had heard about or were registered members of BEPHA. The inclusion criteria were age (14 to 70 years and having some knowledge of BEPHA). The exclusion criteria were those below 14 and above 70 years of age and those who had no knowledge of BEPHA.

The study population, which is Bamenda, was known to be 393,835 (World population review 2017). The sample size was calculated using Yamane, (1967) which gave a sample 399.59,

approximated to 400. Hence, 400 respondents within the age bracket, who lived in Bamenda and had heard about or were registered members of BEPHA, were selected by purposive random sampling technique to participate in this study irrespective of their ethnic origin, race or religion. These participants came from three Colleges and some households in Bamenda municipality (Bamenda 1, 2 and 3) which were also purposively selected. The data was collected through structured self-administered questionnaires and semi-structured interview questions.

Data was analyzed using frequencies, averages/means and percentages and presented on tables, charts and graphs. The relationship between dependent variable (Growth of BEPHA) and the independent variables (Enrolment with BEPHA health insurance), were tested using the inferential statistics of Spearman’s rank correlation coefficient. The Multivariate Regression model was also used in obtaining the regression coefficients and significance level. Specified as:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \mu_i$$

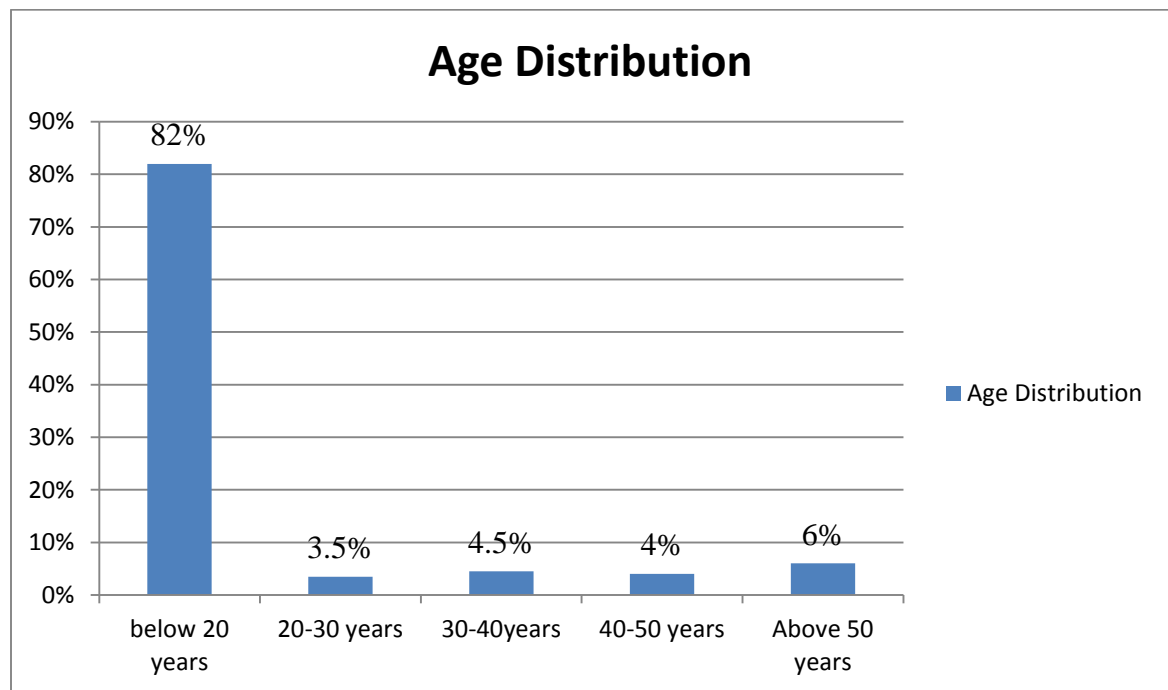
Where; Y = Growth of BEPHA

$X_1$  = Enrolment with BEPHA health insurance

$\beta_0$  = Constant

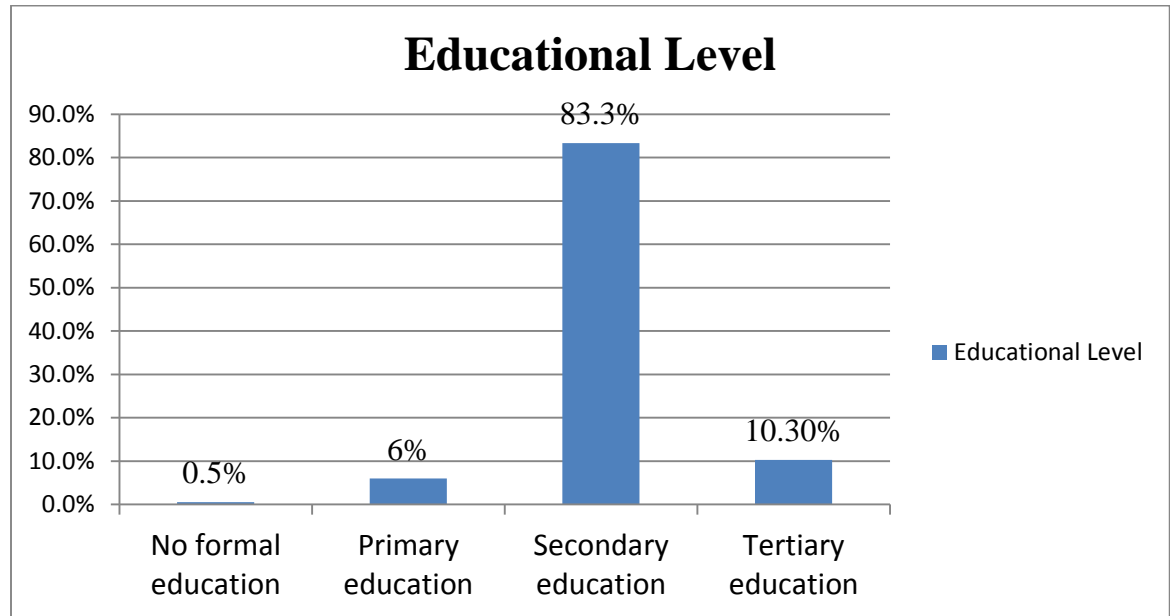
$\mu$  = Error term

### III. Results



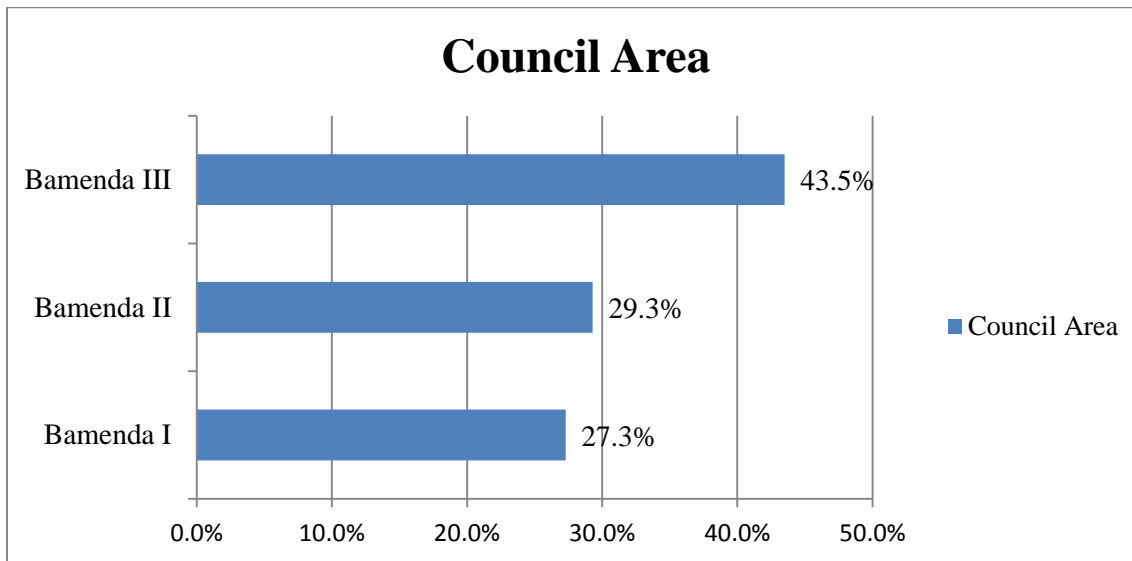
**Figure 1: Age of Respondents**

This age distribution according to Figure 1 above shows a majority of the respondents below 20 years, followed by those above 50 years. This age group distribution has a bearing on their views on the BEPHA health insurance scheme since these age groups composed of dependents that on their own may not be able to afford health care.



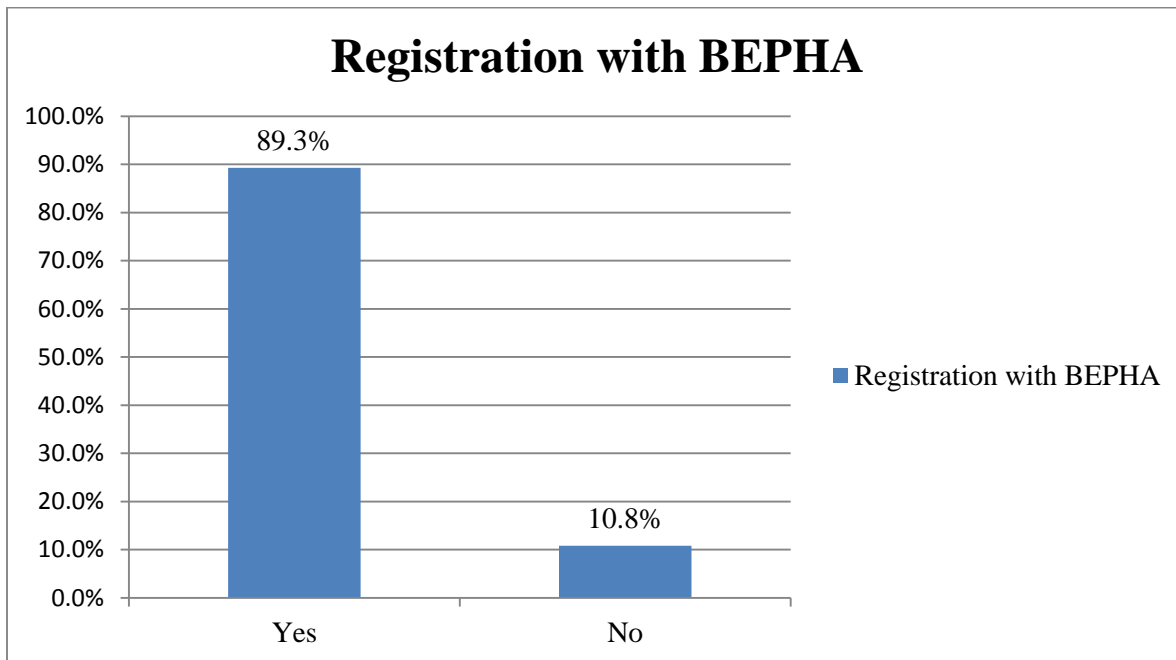
**Figure 2: Level of Education of Respondents**

From the findings in Figure 2 above, majority of the participants in the study had attained the secondary level of education, followed by those who had the tertiary level of education. While just a few of the respondents had been through primary education and some had no formal level of education. This distribution with majority being those who have attained the secondary level of education was an indication that they were literate enough to appraise the quality of health insurance services offered by BEPHA.



**Figure 3: Council Area of Respondents**

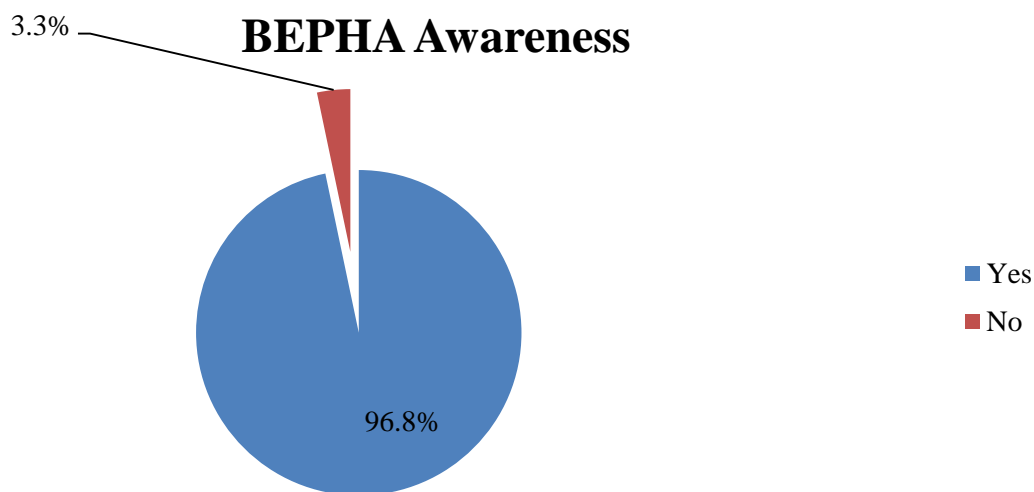
As revealed by Figure 3 above, a majority of the respondents were from the Bamenda III council area, followed by those who said they came from the Bamenda II council area. While a few of the respondents were from the Bamenda I council area. This pattern of distribution of respondents with respect to council areas within Mezam indicates clearly that the BEPHA health insurance scheme has an extensive coverage within the Bamenda municipality.



**Figure 4 Respondents Registration with BEPHA**



According to Figure 4 above, a majority of respondents indicated that they were registered with BEPHA, while a little proportion of the respondents was not registered with BEPHA health insurance scheme. This indicating that there is a high rate of subscription to BEPHA amongst participants who are aware of the health insurance scheme.



**Figure 5 Respondents Awareness of BEPHA**

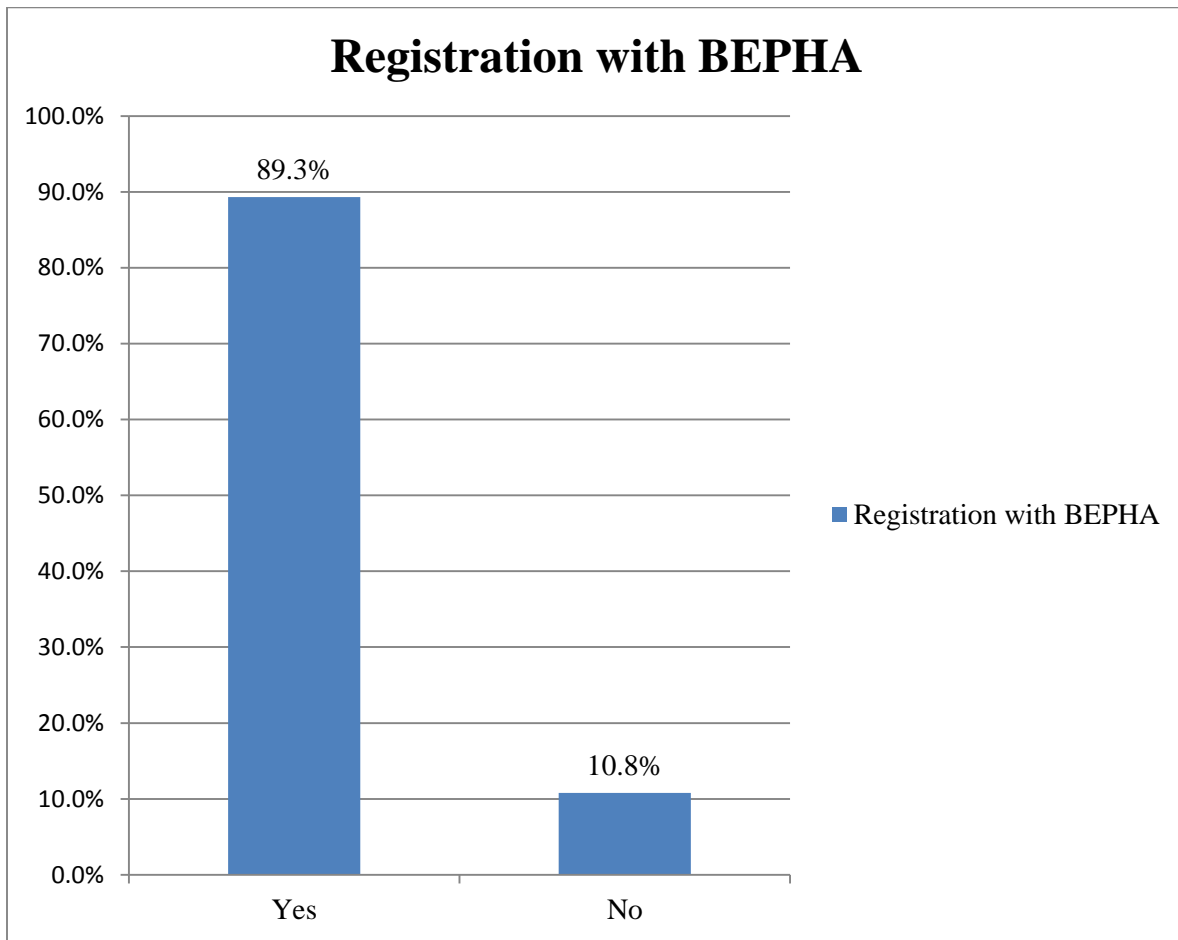
According to figure 5 above, 387 (96.8%) indicated that they have heard of BEPHA health insurance scheme, while the remainder of 13 (3.3%) indicated that they have never heard about BEPHA. This result shows that there is a high level of BEPHA awareness within the Bamenda Metropolis.

**Table 1: Source of Awareness**

		Frequency	Percent
Valid	Family	48	12.0
	Friends	43	10.8
	Church announcements	110	27.5
	Radio news	19	4.8
	Social group	49	12.3
	School	106	26.5
	Hospital	7	1.8
	Office	4	1.0
	Archdiocesan health council meeting	1	0.3
	Neutral	13	3.3
Total		400	100.0

From Table 1 above, Church announcements was the highest source from which participants heard about BEPHA health insurance followed by schools, social groups, family and friends.

While, the Archdiocesan health council meeting, offices of participants and hospitals were the least in terms of sources from which respondents heard about BEPHA health. While few of the respondents were neutral, representing those participants of the study who have never heard of BEPHA health insurance service.



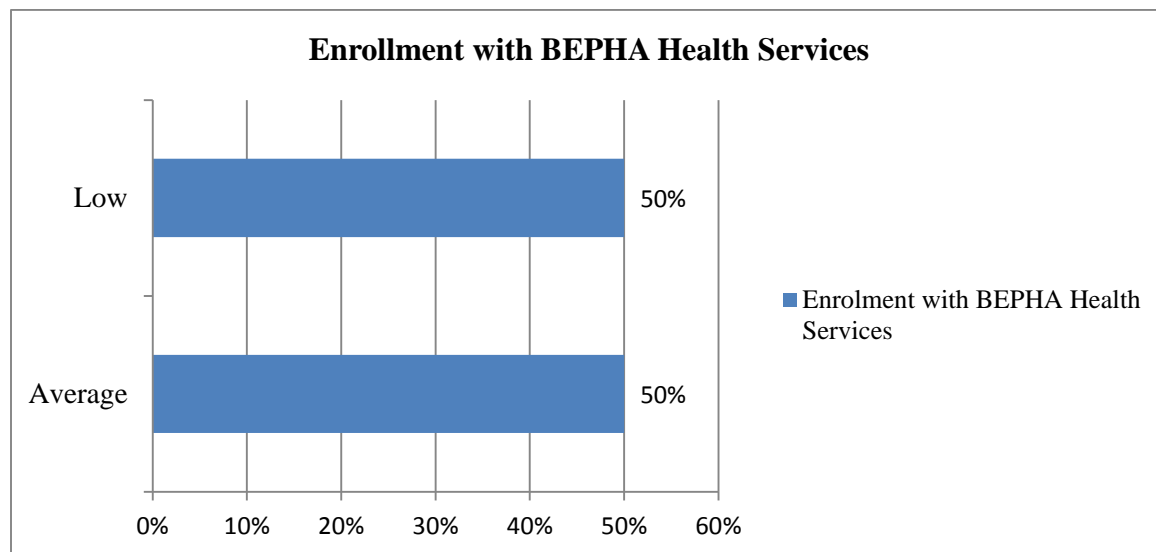
**Figure 6 Respondents Registration with BEPHA**

According to Figure 6 above, a majority of respondents indicated that they were registered with BEPHA, while a little proportion of the respondents was not registered. This is an indication that there is a high rate of subscription to BEPHA amongst participants who were aware of the health insurance scheme.

**Table 2: Duration of Membership with BEPHA**

		Frequency	Percent
Valid	Below one year	51	12.8
	One year	21	5.3
	Two years	23	5.8
	Three years	26	6.5
	Four years	59	14.8
	Five years	75	18.8
	Six years	62	15.5
	Seven years	26	6.5
	Ten years	12	3.0
	Above ten years	2	.5
	None of the above	43	10.8
	Total	400	100

From Table 2 above, a greater proportion of respondents have been members of for five years. This was followed by members who have been with the health insurance scheme for six years, four years and below one year respectively. While a smaller proportion out of the participants have been members of the BEPHA health insurance program for seven years, three years, two years, one year and ten years respectively and the least number of years respondents have been registered with the BEPHA health insurance scheme was above ten years. This result with majority being with the health insurance program for at least four years is an indication that they had been with the scheme long enough to evaluate its benefits.



**Figure 7: Enrollments with BEPHA Health Services**

Based on the findings as shown in Figure 7 above, half of the 10 staff of BEPHA who participated in the study indicated that enrollment into the BEPHA health insurance scheme was on average, while the other half indicated that enrollment into the health insurance scheme was low. The follow-up question on the challenges faced by BEPHA concerning enrollment revealed the following; there was lack of spirit of solidarity among members, lack of money for enrollment and above all, the prevailing sociopolitical climate in the region makes it difficult for the staff of BEPHA to go to remote areas to carry out sensitization and possible enrollment.

**Relationship between enrolment and Growth of BEPHA**

To find the correlation between enrollment and the growth of BEPHA; the results can be seen as presented below.

**Table 3: Correlation Results**

		X1	X4
Spearman's rho	Enrolment with BEPHA Health Insurance – X1	1.000	
		.	
		10	
	Growth of BEPHA – X2	.816**	1.000
		.004	.
		10	10
*. Correlation is significant at the 0.05 level (2-tailed).			
**. Correlation is significant at the 0.01 level (2-tailed).			

The results shown in Table 3 above indicate a strong positive and significant relationship between enrollment with BEPHA and the growth of BEPHA. The correlation statistic ( $r = .816$ ,  $p < 0.05$ ) shows that a change in enrollment will significantly influence the growth of BEPHA to a high degree. This result is in line with the findings of Ito and Kono (2010) who observed that common problems associated with micro insurance growth included low take-up rates; high claim rates, and low renewal rates. This indicates that if the uptake or enrollment rates were high, the BEPHA will also grow.

This section reports the results of the regression analysis conducted to examine the influence of enrollment with BEPHA on the growth of BEPHA as a health insurance scheme. The multiple ordinary least squares (OLS) technique was used to conduct this analysis. Diagnostics tests for multi-collinearity and model fitness were performed using the variance inflator factor (VIF), F-test and R-square statistics. Results as reported on Table 4 below indicate that, the problem of Collinearity was minimized. Results of the VIF statistics were all close to 1. The conditional indices were also small below 15; further indicating that multi collinearity was not present in the model. Standardized results of the OLS regression is presented on Table 4 below. The F-test and R-square statistics also showed that the model was robust for analysis.

**Table 4: Regression Model Summary**

Model	Standardized Coefficients	t	Sig.	Collinearity Statistics		Condition Index
	Beta			Tolerance	VIF	
(Constant)	0.563	-1.126	.297			1.000
Enrolment with BEPHA Health Insurance	.624	2.958	.021	.893	1.120	7.948
a. Dependent Variable: Growth of BEPHA R Square .844 Adjusted R Square .799 F - Test 18.900 (2, 7)**						

An assessment of the fitness of the model was confirmed with a significant F statistic of value. Computed overall F statistics [F (2, 7) = 18.900,  $p < 0.002$ ] was significant with an adjusted R square of 0.799, suggesting that 79.9% of the variations in the Growth of BEPHA can be accounted for by the independent variable (Enrollment with BEPHA Health Insurance). Standardized results showed that Enrollment with BEPHA Health Insurance ( $\beta=0.624$ ;  $p < 0.05$ ), had a significant positive effect on the growth of BEPHA. This result follows the predictions of Ito and Kono (2010) who stipulated that low take-up rates of health insurance hindered the growth of health insurance. This is justifiable as the more people enroll, the higher the chances that there will be people who will not be sick. The premium for these of members will be used to cover the cost of treatment for the sick members. This is in line with the findings Adebayo et al. (2015) who showed that the more members the community registers, the more healthy people will register. He showed that households that have recorded few sick members were less willing to pay than those with high number and that individuals with better health status were willing to pay less amounts for health insurance compared with individuals with poor health status. This is thus indicative of the fact that less health individuals are mostly enrolled in health insurance schemes. Increase in enrollment will mean increase in healthy individuals thus reducing the percentage of registered members benefiting from premiums. The high number of registration of less healthy members of the household is backed by the expected utility theory (EUT) (Odeyemi, 2014). This is because these members weigh the benefits of enrollment to be higher than the risk.

### Conclusion

This study concludes that majority of the registered BEPHA member are those of ages below 20 years, followed by those above 50 years. It also reveals that majority of registered members had attained the secondary level of education, followed by those who had the tertiary level of education indicating a low rate of enrolment amongst those below secondary level of education. Church announcements was the highest source from which participants heard about BEPHA health insurance followed by schools, social groups, family and friends. Above, half of the 10 staff of BEPHA interviewed indicated that enrollment into the BEPHA health insurance scheme was average, while the other half indicated that enrollment into the health insurance scheme was low. The correlation and regression results all show that a change in enrollment will significantly influence the growth of BEPHA. This study therefore concludes that the development of

strategies aimed at increasing enrollments in local health insurance schemes is a way forward for the growth of BEPHA in particular and other health insurance schemes in general.

## **V1. Recommendation**

This study recommends that management of the scheme should amend some clauses of the BEPHA scheme to ensure coverage for all health conditions of their members as this will go a long way to increase enrollment. Also, the expiry date of the BEPHA health insurance cover should be extended so as to attract more subscribers into the scheme thereby ensuring the growth in premium and consequent sustainability of the scheme.

## **REFERENCES**

- Adebayo, EF, Uthman, OA, Wiysonge, CS, Stern, EA, Lamont, KT and Ataguba, JE (2015). A systematic review of factors that affect uptake of community-based health insurance in low-income and middle-income countries. *BMC Health Services Research*. 15:543. <https://doi.org/10.1186/s12913-015-1179-3>
- Adu-Sakyi, S (2016). Challenges facing Ghana's health insurance scheme. Dissertation from the University of Cape Coast, Faculty of Health Science and Department of Physician Assistant. Retrieved February 10, 2019.
- BEPHA Provincial End of Year Report 2016/2017, *unpublished*, Provincial Office Bamenda
- BEPHA Provincial End of Year Report 2019/2020, unpublished, Provincial Office Bamenda
- BEPHA Strategic Plan 2010, 'BEPHA document Archives, Provincial Office Bamenda
- Dror, DM, Hossain, SAS, Majumdar, A, Koehlmoos, TLP, John, D & Panda, PK (2016). What Factors Affect Voluntary Uptake of Community-Based Health Insurance Schemes in Low- and Middle-Income Countries? A Systematic Review and Meta-Analysis. Retrieved August 5, 2019, from <https://doi.org/10.1371/journal.pone.0160479>
- Funds for NGO (2019). What is Micro Health Insurance? Retrieved February 2, 2019, from <https://www2.Fundsforngo.org/category/health>
- Gupta, P. K., Venkataramani, B., Singh, A.S., and Ambarkhane, D (2015). Challenges of Effective Implementation of Micro-Insurance in India: A Case Study of Bhartiya AgroIndustries Foundation. *Annual Research Journal of Symbiosis Centre for Management Studies, Pune*. 3, 176–187
- Ito, S. and Kono, H. (2010). Why is the Take up of Micro Insurance so Low? Evidence from a Health Insurance Scheme in India. Accessed on November 12, 2019 from <https://doi.org/10.1111/J.1746-1049.2010.00099.x>
- Kahneman, D, Knetsch, JL, and Thaler, RH (1991). Anomalies; the Endowment Effect, Loss Aversion, and Status Quo Bias. *Journal of Economic Perspectives*. 5(1), 193–206
- Nde, CN, Raymond, A, Saidu, Y, Cheng, NG, Nzuobontane, D, Atemnkeng JT, And Mbacham, WF (2019). Reaching Universal Health Coverage by 2035: Is Cameroon on Track. *Universal Journal of Public Health*, 7(3): 110-117.

- Noubiap, J.J.N.N, Joko, W.Y.A, Obama, J.M.N, Bigna, J.J and Nzima, V.N 2013. *Community-based health insurance knowledge, concern, preferences, and financial planning for health care among informal sector workers in a health district of Douala, Cameroon. Pan African Medical Journal. 16(17), 22-79*
- Odeyemi, I.A.O (2014). Community-based health insurance programmes and the national health insurance scheme of Nigeria: challenges to uptake and integration. *Int J Equity Health. 13, 20.*
- Spaan, E, Mathijssen, J, Tromp, N, McBain, F, Have, A and Baltussen, R. (2012). The impact of health insurance in Africa and Asia: a systematic review. *Bulletin of the World Health Organization Pastissues .90 (9) 633-712.*
- World Population Review. (2019) '*Population of Cities in Cameroon*', [Online] Available from: <https://worldpopulationreview.com/countries/cameroon-population/cities/> (Retrieved 6<sup>th</sup> August 2019).
- Yamane, T (1967) '*A simplified formula to calculate sample size*', [Online] Available from: [https://www.researchgate.net/figure/A-simplified-formula-to-calculate-sample-size-Yamane-1967\\_fig4\\_281629128](https://www.researchgate.net/figure/A-simplified-formula-to-calculate-sample-size-Yamane-1967_fig4_281629128)