The Role Of Local Community In The Improvement Of Health Insurance Scheme In Ghana

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ABSTRACT : *The health sector is an important sector where health insurance scheme is an integral part. The magnitude of local community's involvement towards the enhancement of health insurance schemes is of great consequence to the upgrading of the health sector, the development of a national healthy population and an improved economic transformation. The study covered 75 hospitals in Ghana. This study uses a regression analysis to comprehensively assess and analyze the level of local community involvement to improve health insurance scheme in Ghana. The findings revealed that the local community is involved in the enhancement of health insurance schemes when there is an appreciation in their income levels. Implying for health insurance schemes to flourish then the income levels should be high which eventually results in a productive economy.*
KEYWORDS *– community involvement, health insurance scheme, income distribution, local community*

I.   INTRODUCTION

The main concern of many nations across the world is the establishment of a successful universal access to both good and quality health care services through formation of reliable health insurance schemes at the national level. For this matter, many nations have come up with different health financing approaches and strategies to fulfill the universal access to basic health care. One of the adopted strategies is the establishment of National Health Insurance Scheme in Ghana. Ghana is among the few nations in Sub-Saharan Africa which spends relatively high proportion of its annual GDP in funding the health sector. Compared to other countries, as of 2015, Ghana's total expenditure on health as a proportion of its GDP was at 5.3%. When compared to other neighboring nations, Kenya had 4.5%, Benin 4.6%, and Nigeria 3.9% (Alhassan, Amponsah, & Arhinful, 2016). Also, based on government allocation from the national budget, in 2016, Ghana allocated 10.6% of the total expenditure to health sector.

In various sections of the African continent, different community based insurance schemes have been developed and implemented to help the society fund its medical expenses. However, the outcomes of these insurance schemes have been varying depending on different factors. The main challenge has been the financial sustainability and operations of these insurance schemes. A study by (World Health Organization, 2011) showed how community health insurance schemes collapsed in Uganda due to low financial support that was caused by low subscription, and lack of government support. Thus, according to (De, Sauerborn, Kouyate, & Flessa, 2009), low enrollment in the scheme, weak managerial strategies, lack of clear legislations, high overhead costs and insufficient risk management are the key operational challenges facing the national insurance schemes and the challenges threatening their sustainability.

The enrollment levels depend on the nature of the community and how it perceives the need to have universal health care system. The nature and characteristics of a given society will enable one to predict if such a population will enroll to matters related to the national healthcare insurance schemes. Their role can either make the insurance scheme sustainable or not.

The 1978 Alma Ata Declaration framed the participation of the community as a critical element to the primary healthcare provision in the country (George, Mehra, Scott, & Sriram, 2015). According to the declaration argued that, community participation is an essential principle within the right based strategies to health which have intrinsic value. A considerable experience has been built along the Alma Ata Declaration since its inception. Community participation is an essential aspect which can help in making local interventions that are in line with the local needs, informed local priorities and knowledge. According to (Ensor & Cooper, 2004), within the last century, the role of communities in matters health insurance and systems in both low and middle income nations have gained prominence. Subsequently, reviews have proven that, health affects the

health workers in the community (Perry, Zulliger, & Rogers, 2014), the women groups (WHO, 2014) and other community projects which supported the empowerment approach (Pronyk, et al., 2008). More research has been done in the field of health systems related to the forms of community accountability, and the role of communities in governing the health care systems through the application of village health committees. This study therefore adds to existing literature on the role of community involvement in developing health insurance in Ghana.

Although there is a growing agreement on the value of community participation to matters related to healthcare systems, there is variation related to how these communities and understood and defined (George, Mehra, Scott, & Sriram, 2015). Mostly, communities are defined in terms of geographic presentation like a village or a neighborhood living together. Communities are not necessarily territorial as they can include different aspects like social class groups who are united by a single interest. While many research studies have analyzed the value of community participation health matters (Rifkin, 2014), few have assessed the role of local community in the improvement of health insurance scheme in Ghana. Ghana has developed a feedback strategy which enables the scheme to effectively establish a responsive system that prioritizes the needs of the local community.

II. LITERATURE REVIEW
2.1. National Health Insurance in Ghana
Ghana is the first country in the sub-Saharan Africa to adopt the National Health Insurance Scheme as a platform where health acre could be funded through both private and public entities.(Alhassan, Amponsah, & Arhinful, 2016). The NHIS was first introduced in 2003 through the ACT 650 and Amendment Act 852 of parliament and the full implementation of the project started in 2004. Under the Amendment Act 852 of 2012, each Ghanaian was required by law to register to a health insurance scheme. The implementation of this directive has remained weak because, the country faces scrawny administrative capability and also due to the large informal sector in the country making it hard for the Act to be fully implemented.

The National Health Insurance Scheme of Ghana is funded through a central NHIF fund which is mainly sourced from the National Health Insurance Levy (NHIL) of the 2.5% tax on the selected products and services, 2.5% of the Social Security and National Insurance Trust (SSNIT) contributions (Alhassan, Amponsah, & Arhinful, 2016). The SSNIT is largely derived from the payment of premiums, donor funds and the formal sector employees. Those employees in the formal sector who contribute through the SSNIT program are exempted from the premium payment. Based on the 2016 statistics, more than 70% of the NHIS financial inflows was funded by NHIL, followed by SSNIT contributing 17.4% and premium payments at 4.5%. Other funding was received from parliamentary allocation, donor fund, voluntary contributions in terms of gifts and the interest accrued investments. According to (Arhinful, 2003) and (Agyepong & Adjei, 2008), the introduction of NHIS was necessitated by the failures of other schemes to guarantee universal health coverage to the society and the financial accessibility in health care. The previous scheme included the Out-of-Pocket payment (OOP), where individuals would finance their own medical services from private funding.

2.2. Factors affecting health insurance
Panda et al (2013) in a study of the major factors that affected the uptake of health insurance at Kupra Insurance Scheme in India demonstrate that age is one of the major factors that determine the demand of health insurance. Higher age groups could take insurance policies but lower age groups had a low uptake. A research conducted in Ghana on women uptake on health insurance by women Brugiavin (2016) showed that women above the age 40 yrs. could take more policies as compared to those of bellow 40 yrs. This is because as people tend to get old their bodies are exposed to more risk as they get much sicker as compared to tender age. According to (Harmon and Finn, 2006) age might act as the key determinant in health insurance. According to (Michel et al, 2009) on key determinants of health uptake noted that gender bias leads to unequal material and non-material possession. This is because the act of gender bias generates low access to the resources needed for health insurance.

According to empirical researches done in the world, gender differences and the effects to health and health insurance have been clearly shown. Sabine Serceau (2012) reported that from Indias Rasthriya Swashya Bima Johana (RSBY) 60% of males register for insurance as compared the female who register 40% in the Indian health insurance scheme. This is because women are not head of the household thus no contribution to the resources of the family. This has led to low uptake in the health insurance sector. Income has an effect on health insurance. Sudharshan and Sethuraman (2001) suggested that the low income or the informal sector face a lot of challenges pertaining the variability of the incomes. This is due to the uncertainty nature of the market situations. This largely affects the health insurance, the business owners can be affected in that today they have money and the coming times the business fails. According to WHO organization most of the people in developing countries are middle income earners. Cooper (2002) argues that the level of education has an effect

on the health insurance. The educated people in the society are believed to be exposed thus they take a major role in promoting health insurance. The educated people earn an income that supports them in purchasing of the health insurance products. Lyer et al (2008) argue that education has a close connection to health. Bhat and Jain (2006) in study conducted in India concluded that households who had higher incomes had a higher uptake to the insurance as compared to the low income earners. Insurance uptake increases with an increase income, studies show that health insurance uptake depends on income as a key factor in the middle, low and high income earners in the economy (WHO).

2.3. Role of community participation in Health improvement

According to (Japan Food Marketing Information Center, Inc., 1996) past studies carried out in Japan show that most of the age bracket 30-59 years are the most respected in terms of diet management. They take it as a personal responsibility to provide better diet mechanism to the society. Even in their respective families and villages. Community participation is the key element towards a better society. WHO (World Health Organization) suggests that health education creates an impact on middle-class people than working class (Macintyre et al, 1993). These middle-class people are mostly found in the community (grassroots). The community has been proved to have a large responsibility in health improvement. Community-based project support, Research has shown that the less- educated people who exist at the community level will show much support and responsibility towards the community projects. (Minkler et al., 2003). The educated who are not mostly found at community levels have been found to only critique the projects. There exist social-economic differences in the community projects that support health improvement. (Yajima, et al., 2001). It has also been noted that the lower the social economic status the lower the health status of a population in a given nation (WHO, 2014; Rodriguez and Lemkow, 1990; Pickett et al., 1992). The low social economic status have been linked to the community, thus a community has been regarded as a major area of consideration for the health projects (World Health Organization). This leads to the first null hypothesis which states that;
Ho: There exist no significant differences between levels of community participation towards health insurance support and health insurance schemes improvement levels.

2.4. The role of governments and NGOs

In India, the NGOs have a role in starting healthcare facilities in the state or any nation. According to the Indian survey 2013-2014, NGOs generate 70% of the incomes from grants and donations, this shows that they play a great role in promotion of health insurance (Ravishankar et al ,2009). The NGOs have a great role in promoting innovative and community approaches to health care and promotion of health insurance sector (WHO, 2004). According to Geneva Paper on Risk and Insurance, January 2002. The government has the power to support the health insurance in the market. This can be through interest regulation and creation of awareness in the uptake of insurance. Also through provision of enough income to citizens in the public sector and private sector. This improves the uptake of health insurance (WHO, 2002).
Ho: There exist no significant differences between the total government and nongovernmental organization and health insurance schemes improvement levels.

2.5. The impact of income distribution on health insurance

Lagarde et al (2007) realized that the amount health insurance uptake has a close connection the economic structure of a country. For instance in South Africa the households with health insurance increased with increase in income. For those earning 1-1950 Rand the percentage was 6.3% while those earning more than 7600 Rand was 90.75%. This clearly shows the connection between the household incomes as it pertains to the economic structure of a state. Dalaba et al (2012) has shown that the consistency of the higher income groups depends on Consumer theory, which classifies health insurance as normal and with good demand. This study came to this conclusion after considering a study conducted in Ghana where the higher income class had a higher percentage of households not registered for health insurance. The low income earners had 34% uninsured as compared to the rich who had 8% uninsured. Owusu-Sekyere et al, (2014) in a different study at Kumasi metropolis also realized that the high income earners are likely to register by a percentage of 7% higher as compared to the low income earners. Basically the income distribution has a major contribution to the rate of insurance uptake. As the income goes high the insurance uptake also hikes up. Therefore this study was based on the factors affecting the health insurance uptake and the role the community towards the health insurance. The study brought forth the major factors affecting health insurance and the role of the government and the NGOs in promoting health insurance in an economy. Hence explaining the criteria and the methodology discussed in the above literature.
Ho: There exist no significant differences between income levels and health insurance schemes improvement levels.

III. METHODOLOGY

This part entails the use of different ways that can be used to explain the relationship between the health insurance scheme and other factors such as the government and non-governmental organizations and the community support. The methods include models that clearly indicate the trends and nature of variation of the factors corresponding to the health insurance schemes in Ghana. The data corresponding to the health insurance schemes was accrued from a number of health insurance firms in Ghana, The simple random sampling was done and a total of 75 hospitals gave records corresponding to the requirements of the study design. The data was a secondary form of data recorded over a specified period of time. The data proved to be subject to different statistical techniques and mathematical models such as the econometric models that are useful in immense understanding the mutual association between the variables corresponding to improvement of health insurance schemes towards improvement of health services in Ghana. The following were the set of hypothesis that were considered:

- Null Hypothesis: There exist no significant differences between the total government and nongovernmental organization and health insurance schemes improvement levels.
  Alternative Hypothesis: There exists significant differences between the total government and nongovernmental organization and health insurance schemes improvement levels.
- Null Hypothesis: There exist no significant differences between levels of community participation towards health insurance support and health insurance schemes improvement levels.
  Alternative Hypothesis: There exists significant differences between levels of community participation towards health insurance support and health insurance schemes improvement levels.
- Null Hypothesis: There exist no significant differences between income levels and health insurance schemes improvement levels.
  Alternative Hypothesis: There exists significant differences between income levels and health insurance schemes improvement levels.

The exploratory data analysis that specifically involves the use of descriptive statistics to explain the most appropriate variables to be used for further analysis that explains the effects of different variables to the improvement of health schemes in Ghana. The assumption that the data follows the normal distribution is employed making it possible for further analysis to be carried out using methods such as correlation and regression analysis. The correlation analysis shows the strength of association between the factors enhancing variation in health schemes improvement levels in Ghana. This will help to show the factors that lead to know the improvement levels causative factors and the demeaning effects caused by specific variables. The regression analysis will help prove whether the variables are associated linearly and this will answer the research questions as well as the hypotheses. The regression models will represent econometric models involving simple linear regression as well as multiple linear regression models in regard to the level of improvement of the health insurance schemes. The time series analysis is also employed in this research to show the trends of the variables according to their indices. This is done using the moving average plots that shows timely fluctuations of a variable depending on the changes in their means. These fluctuations help indicate the levels of changes in the state of the variables over time. Aspects of mediation and causation effects by different factors to the improvement of health insurance schemes will be clearly displayed and explained. The analysis using the illustrated methods was done using two statistical packages; the Minitab and scientific package for social sciences (SPSS).

3.1. Model Specification & Variables.

The first econometric regression model containing factors affecting the acceptance and improvement of health insurance schemes in Ghana is clearly illustrated. This equation shows the model consisting of the effects of the government and nongovernmental organizations influence on the health insurance improvement levels.

Total health insurance schemes improvement = $\beta 0 + \beta 1\ GO\&NGO_{it} + \varepsilon_{it}$

Where:

GO&NGO= Governmental and nongovernmental organization support.

ε = is error term

$\beta 0$ = Constant

i = represents the hospital.

t = represents the time.

The second econometric model displays the effects of all the factors represented by specific variables to the overall health insurance schemes. It is represented by the following equation:

Total health insurance schemes improvement = $\beta 0 + \beta 1\ ILD_{it} + \beta 2 GO\&NGO_{it} + \beta 3\ LCP_{it} + \varepsilon_{it}$

Where:

ILD= Income levels in dollars
GO&NGO= Governmental and nongovernmental organization support
LCP = Levels of Community participation
ε = is error term

3.1.1. Variables

The variables considered for the model include; income levels in dollars, governmental and nongovernmental organizations support and levels of community participation. The variables aforementioned represent the response and the predictor variables. For the first econometric model, the response variable is the total health insurance schemes improvement and the predictor variable is the governmental and nongovernmental organization support. The second model is represented by the dependent variable as the total health insurance schemes improvement and the predictor variables are all the other listed. The variables are an important portion of the analysis since they are the basis of analysis in order to meet the objectives of the research

3.1.2. Results and Analysis

The descriptive Statistics
The following table indicates the main characteristics of data that are appropriate for this research.

Table 1

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skew-ness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Income levels in dollars	75	4.181	212.331	71.7027	49.74	2474.03	1.054	0.277	0.352	0.548
levels of community Participation	75	0	231	31.8779	49.153	2416.04	2.555	0.277	6.688	0.548
Total GO and NGO contribution	75	11	594	194.173	129.76	16836.4	1.092	0.277	0.583	0.548
improvement levels in units	75	2	24	12.027	3.8554	14.864	-0.13	0.277	0.876	0.548

The total number of observations as shown in the table above is 75 which represent the total population considered for the analysis. The mean values for the variables indicate the measure of central tendencies taking the consideration of one variable in regard to all the observation in the dataset. The minimum and the maximum values of the variables represents the interval of the observation and the values that are out of this range are referred to as outliers that are not important in explaining the factors affecting the health insurance schemes development in Ghana. The variances explains the amounts of variation existing or the measure of dispersion between the variables. The valid N list wise indicates that all the values of the descriptive characteristics of the variables are not missing values in the dataset. The skew-ness and kurtosis measures shows that the distribution of the variables is approximately symmetric with minimal outliers in the dataset implying that all the variables are fit for further analysis using diverse scientific models.

Table 2

Correlations analysis results

		Income levels in dollars	levels of community Participation	Total GO and NGO contribution	improvement levels in units
Income levels in dollars	Pearson Correlation	1	-.049	.409**	.224
	Sig. (2-tailed)		.676	.000	.053
	N	75	75	75	75
levels of community Participation	Pearson Correlation	-.049	1	-.033	-.074
	Sig. (2-tailed)	.676		.778	.530
	N	75	75	75	75
Total GO and NGO contribution	Pearson Correlation	.409**	-.033	1	.239*
	Sig. (2-tailed)	.000	.778		.039
	N	75	75	75	75
improvement levels in units	Pearson Correlation	.224	-.074	.239*	1
	Sig. (2-tailed)	.053	.530	.039	
	N	75	75	75	75

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The correlation results elucidated by the table above show a clearly positive and negative association between the pairs of the variables. The correlation coefficient between the income levels in dollars and the total government and nongovernmental contribution towards the improvement of the health insurance schemes in Ghana is approximately 0.41 which represents a positive association between the variables. This implies that the government support affects the income levels due to the effective acceptance of improved health insurance schemes. The correlation coefficient between total GO and NGO contribution and the health insurance schemes improvement levels is approximately 0.24 which indicates positive significant association between the two variables which means that the support from government and other organizations to the health insurance schemes have a great impact on the overall objectives of this research. The income levels seems to have significant impact on the health insurance schemes in Ghana because the Ghana citizens are able to subscribe to different health insurance policies that fit their levels of income. The levels of community participation and the income levels produce a negative correlation coefficient which implies that the two does not have a significant effect on each other.

Table 3

Regression analysis results corresponding to the first econometric model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.239ᵃ	.057	.044	3.7690

a. Predictors: (Constant), Total GO and NGO contribution

Table 4

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.945	1	62.945	4.431	.039ᵇ
	Residual	1037.002	73	14.206		
	Total	1099.947	74			

a. Dependent Variable: improvement levels in units
b. Predictors: (Constant), Total GO and NGO contribution

Table 5

Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	10.647	.787		13.529	.000
	Total GO and NGO contribution	.007	.003	.239	2.105	.039

a. Dependent Variable: improvement levels in units

The ANOVA table represents an F-value of 4.43 with corresponding p-value 0.04 which is less than the significance level 0.05 meaning that the model is significant in explaining variation. The coefficients results indicate that the regression equation is given by the following econometric equation;

Total health insurance schemes improvement = 10.65 + 0.007GO&NGO$_{it}$+ ε_{it}

The equation above gives the prediction that when the coefficient corresponding to GO&NGO is 0, the total health insurance schemes improvement levels is 10.65 and when it is not equal to 0, GO&NGO levels increases by 0.007 units.

The p-value corresponding to GO&NGO contribution is approximately 0.039 which is less than the significance level 0.05. Therefore, the null hypothesis is rejected and it is concluded that there exists significant differences and association between the total government and nongovernmental organization and health insurance schemes improvement levels. The following are the plots corresponding to the regression analysis;
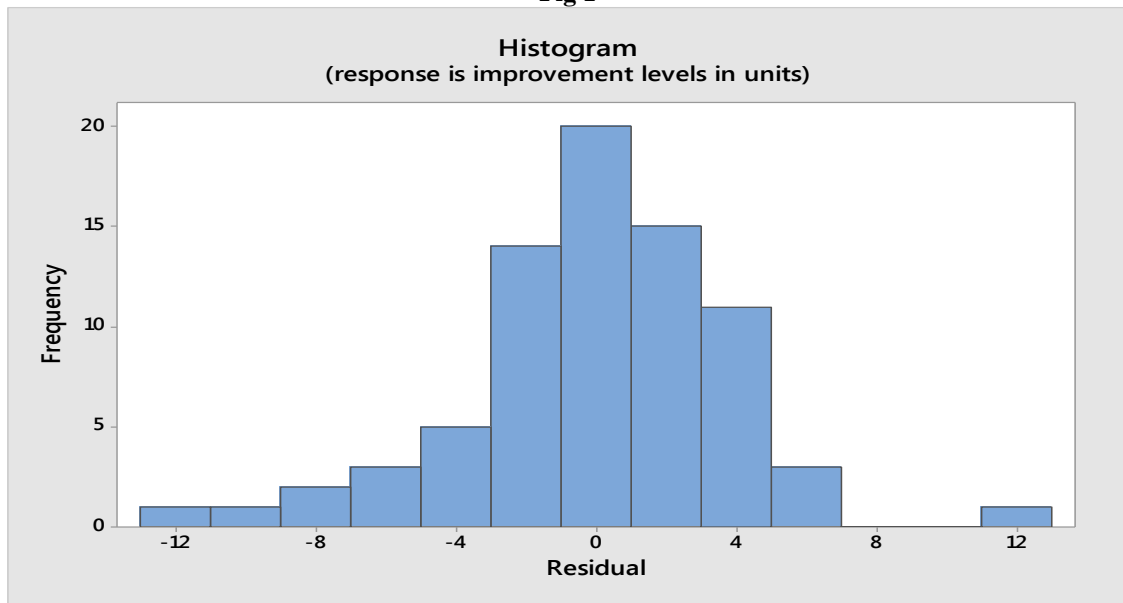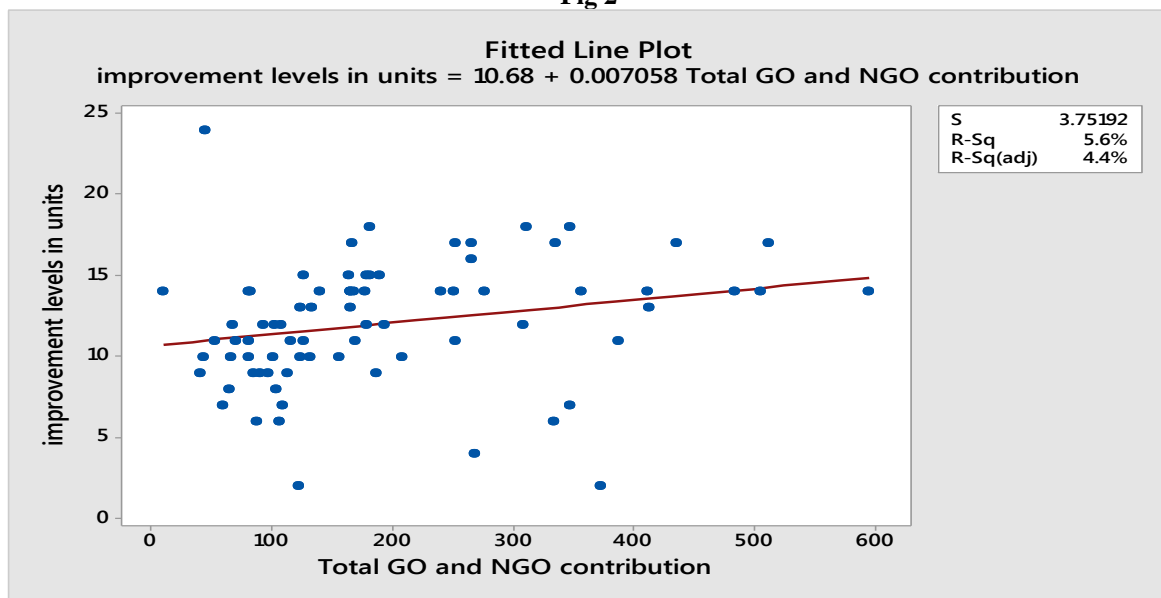
Fig 1

Fig 2

The plots show a distribution that assumes the normal distribution and linear association is clearly verified between the variables in the model.

Regression model 2 results:

Table 6

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.437[a]	.191	.156	119.1805

a. Predictors: (Constant), Income levels in dollars, levels of community Participation, improvement levels in units
b. Dependent Variable: Total GO and NGO contribution

Table 7

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	237407.645	3	79135.882	5.571	.002[b]
	Residual	1008483.102	71	14203.987		
	Total	1245890.747	74			

a. Dependent Variable: Total GO and NGO contribution
b. Predictors: (Constant), Income levels in dollars, levels of community Participation, improvement levels in units

Table 8

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	61.660	48.230		1.278	.205
	improvement levels in units	5.216	3.695	.155	1.411	.162
	levels of community Participation	-.009	.283	-.003	-.030	.976
	Income levels in dollars	.977	.286	.375	3.417	.001

a. Dependent Variable: Total GO and NGO contribution

The model represents approximately 19% amount of variation between the variables affecting the improvement levels of the health insurance schemes. The regression equation for the coefficients of the model is given by the following econometric expression;
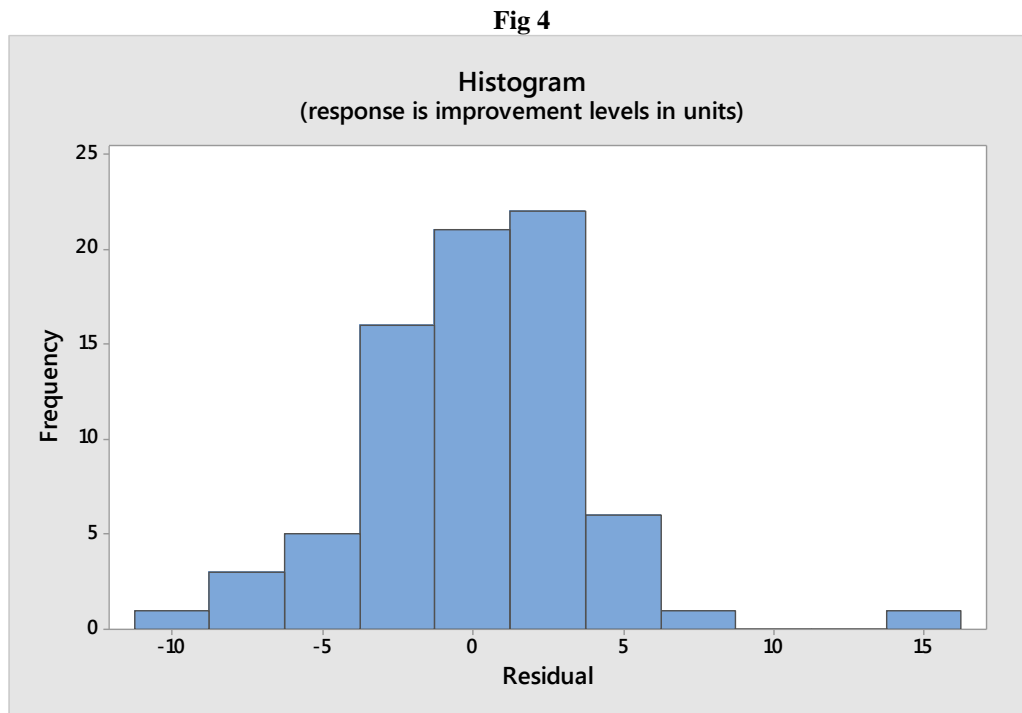
Total health insurance schemes improvement = 61.66 + 5.216 ILD_{it}-0.009$GO\&NGO_{it}$ + 0.977 LCP_{it}+ ε_{it}

The p-value corresponding to the income levels is the only one less than the significance levels which implies that the null hypothesis is rejected and it is concluded that there exists significant differences between income levels and health insurance schemes improvement levels.

Fig 3

The corresponding plots:

Fig 4

Histogram
(response is improvement levels in units)
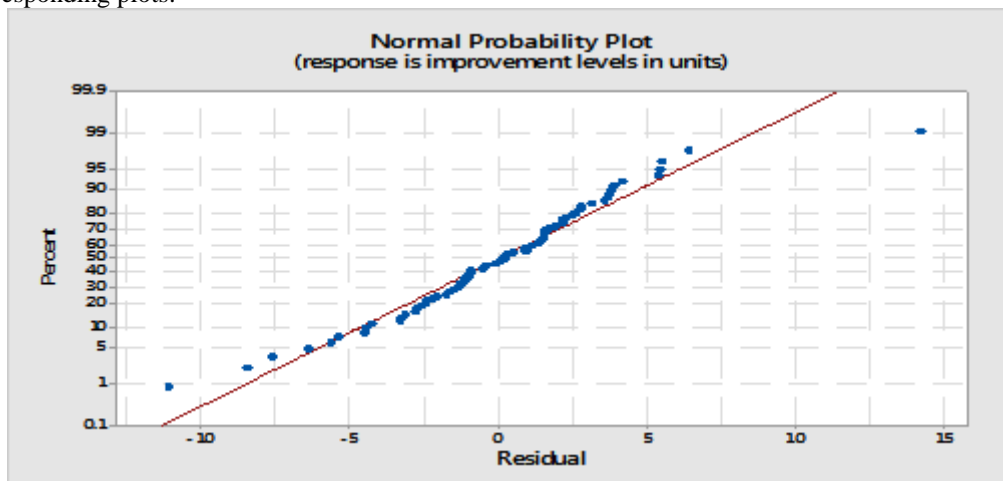
The corresponding plots also indicate a perfect relationship between the factors such as the income levels which affects the health insurance schemes improvement in Ghana.
The process results of the run matrix:

Model: 1
Y: improvement levels
X: Income levels
W: Total goals
Sample Size: 75

Table 9

	coeff	se	t	p	LLCI	ULCI
constant	10.1178***	1.3826	7.3180	0.0000	7.3610	12.8746
Incomele	0.0123	0.0171	0.7229	0.4721	-0.0217	0.0464
TotalGOa	0.0055	0.0069	0.8006	0.4260	-0.0082	0.0192
Int_1	0.0000	0.0001	-0.0412	0.9673	-0.0001	0.0001

Product terms key:
Int_1 :   Incomele x   TotalGOa

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0000	0.0017	1.0000	71.0000	0.9673

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.2764	0.0764	14.3083	1.9583	3.0000	71.0000	0.1281

*** denotes statistical significance at 5% level

The model above indicates that the p-value corresponding to the interaction between the variables is also significant implying that there exists immense interaction and association of the variables in consideration of the mediation and causation effects. The amount of variation exhibited is approximately 8%.
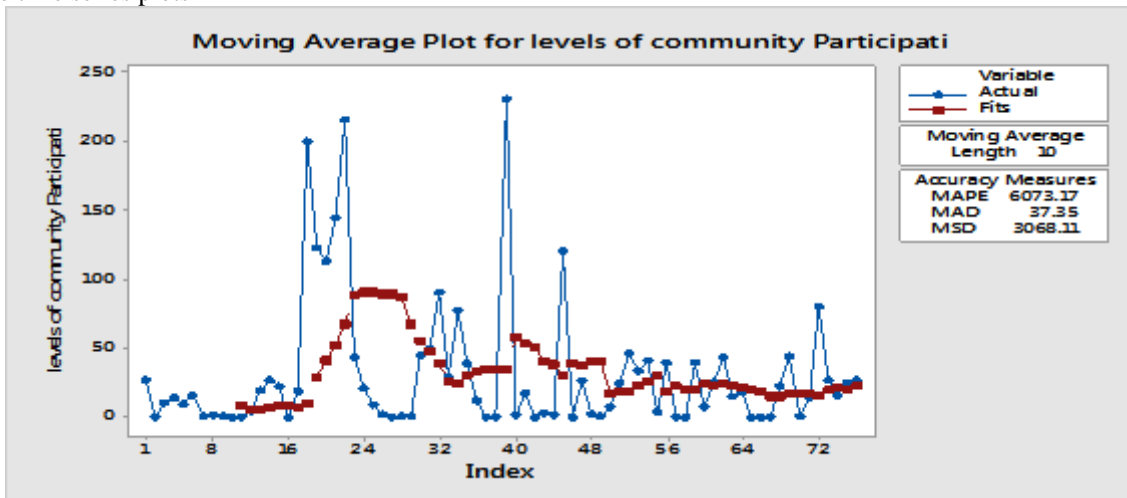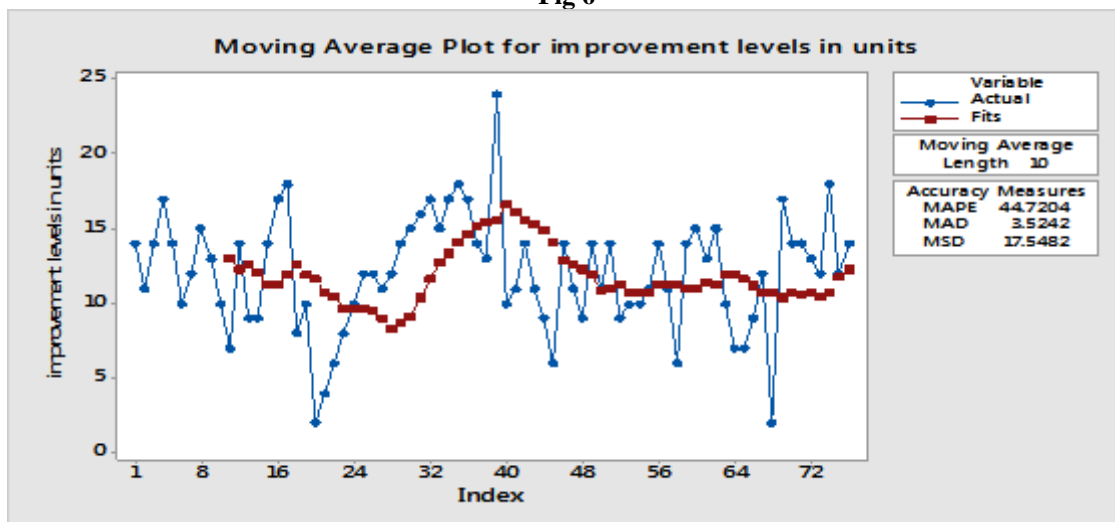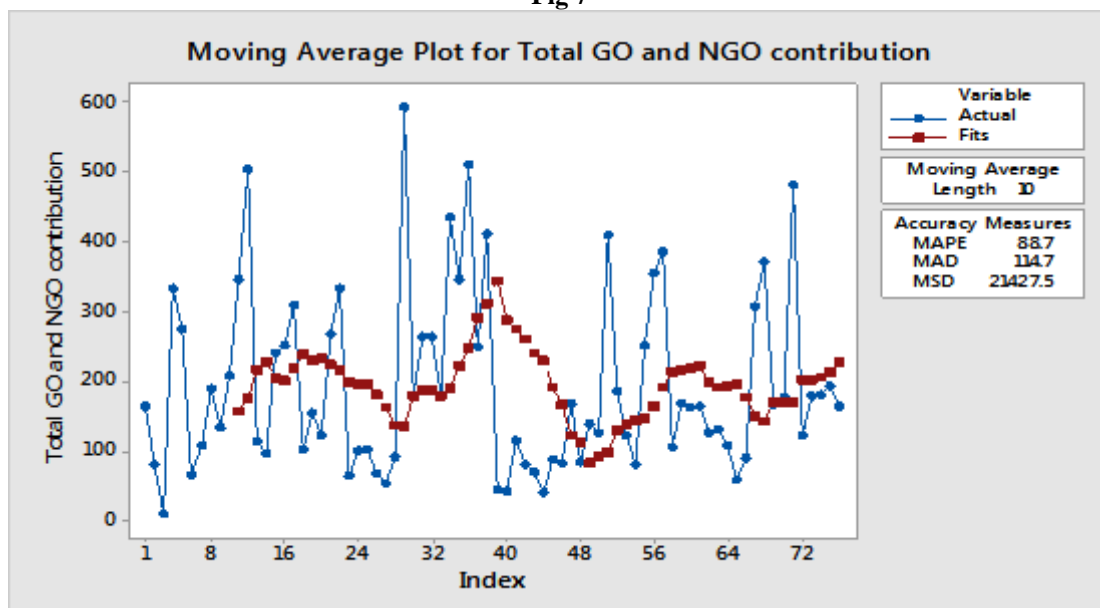
Fig 5

The time series plots

Fig 6

Fig 7

IV. CONCLUSION

In conclusion, different aspects contribute to the acceptance or rejection of development aspects such as the insurance industries especially the ones that are concentrating on solving the problems facing Ghana such as high disease burden hence proving very vital towards securing a healthy future for every Ghana citizen.

The results from the analysis show the appropriateness of the set of hypotheses set for this research. The factors such as the governmental and nongovernmental organization's support and the income levels have proved to cause an immense influence on the improvement of health insurance schemes in Ghana. The government and other well-wishing organizations that foster the well-being of the Ghana citizens is clearly elucidated by the results of this study especially in the medical improvement by supporting the health insurance schemes that assists in proper treatment of individuals of difference living standards. This is very impressive because the individuals are encouraged to embrace the upcoming health insurance schemes that help secure a healthy present and future at standardized costs. The income levels have proved to have a great effect on the acceptance and improvement of health insurance schemes in Ghana and this means that the policies are set in ways that favor the income levels of Ghana citizens. The time series plots on the moving averages indicate the continually varying variables overtime corresponding to health insurance improvement levels in Ghana.

Most governments in different countries have different attitudes towards different factors facing the communities and their support to development organizations especially on health improvements encourage the citizens to accept the new improvements in different sectors of the economy of the country. The levels of community participation towards different matters affecting the whole country does not indicate significant results which is quite surprising and the individuals should be encourage to get involved in accepting the health insurance schemes for an assured future health.

V. LIMITATIONS OF THE STUDY

The main limitations of the study is that some of the variables considered for the study do not depict significant results as per the expectations of the research on the acceptance and the improvement of health insurance services in Ghana. The main variable is the levels of community participation which is believed to foster the general decisions of the country towards the development projects but in this case it has no effects on the improvement of health insurance schemes in Ghana. Further studies can look at other variables which were not considered in this study.

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