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Effect of Cooperative Society Membership Type on Participation Willingness in Community Based Health Insurance Scheme:

[1]Ahmed, Musa Ciroma, [2]Dr sule Bello, [3]Mustapha Makama, [4]Mustapha Ibrahim, [5]Abubakar Aliyu
[1,2,3,4&5] Department of Business Administration and Management, ATAPOLY, Bauchi

Abstract

This study examined the effect of cooperative society membership type on participation willingness in community-based health insurance in some selected local government areas of Bauchi state. A cross sectional double bounded contingent valuation survey of 379 respondents was conducted. Data was collected anonymously and analyzed using partial least square structural equation model PLS SEM. Results showed that 76.5% of the respondents were willing to participate in the scheme. More so, for the initial premium bid of 500 Naira, 88.7% consented to pay the bid. When premium was increased to 600 Naira, 81% were also willing to pay. However, the effect of belonging to a particular cooperative society type did not influenced participation even when almost all the cooperative society members have the desire to join the scheme. It was recommended that CBHI scheme promoters should prioritize targeted interventions addressing individual level barriers. More so, marketing strategies should emphasize some other benefits of the scheme rather than cooperative society specific advantages. Given that this study was conducted in one geographical area i.e. Bauchi state, a comparative study across different contexts might find different result.

Key words, rural cooperative society type, community-based health insurance, participation willingness, contingent valuation.

1.1 Introduction

Globally, one of the greatest challenges to healthcare access and utilization is high and unexpected out of pocket spending on healthcare services. Out of pocket expenses defined as medical care expenses that are not covered by any health insurance plan can also have dual and causal relationship with access to health services and poverty (Gina, 2022). This relationship can also run in other directions. For instance, when care is needed but delayed or not obtained, people's health worsens, which in turn leads to loss of income and higher healthcare cost, both of which contribute to catastrophic health expenditure, impoverishment and poverty (David *et al*., 2022). As a result of these and other weaknesses in the health financing system in developing countries. The World Health Assembly 2005 and WHO World Health report 2010, called on all health system to move toward universal coverage, defined as "access to adequate healthcare for all at an affordable

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price". However, a crucial aspect of achieving universal coverage is the development of a financial risk pooling mechanism that provides cross-subsidies in health systems where ability to pay determine financing contributions and the use of services is on the basis of need for care (Hong& Nancy, 2012; Inke, Priyanka & Joe, 2019; Getasew, Ashenafi & Birhanu, 2020). Therefore, one risk pooling mechanism that was proposed and seen to reduce user fees and out of pocket payment was Community Based Health Insurance Scheme CBHIs. In 2005, the Nigerian government officially launched its first national health insurance scheme. The scheme recommends the use of rural member-based organizations such as cooperative societies. Cooperative socities are social institutions where divergent groups of individuals, regardless of their political, social, racial or religious differences come together to promote their social and economic development based on the values of self- help, self-responsibility, democracy and equality, equity and solidarity (Islam, Azim & Karim, 2014). These characteristics help in facilitating and enhancing universal health coverage via health insurance (International labour organization [ILO], 2021). cooperatives were found to have played a significant role in helping their members' access health care services particularly CBHI scheme in many countries around the globe (Yu, 2015).

Several studies have gauged and reported the demand for and factors influencing participation willingness in CBHI scheme among member based associations across the globe. Aggardwal (2010); Osakede et al, (2016) believe that membership in an association is among the key factors influencing individuals to participate in CBHI scheme. Similarly, Petro, Felix and Somo, (2023) discovered that, being a cooperative society member was a determining factor in enrolling in and paying for CBHI scheme. Similarly, Mebratu & Desu (2022) further indicated that, membership in member based association was a significant determinant of CBHI scheme membership. While these studies underscored the important of the broader cooperative society membership in the promotion of CBHI scheme however, no studies were found to have investigated the effect or link rural cooperatives society membership type on the demand for and participation willingness in CBHI scheme in literature in this context. Therefore, the main objective of this study was to examine the effect of cooperative society membership type on the demand for and participation willingness in community based health insurance scheme.

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It is hypothesized that, belonging to a cooperative society type does not significantly affect participation willingness in CBHI scheme. Result from this study can shed more light on the type of cooperative society to target in the promotion of CBHI scheme thus, enhancing better decision making, increase efficiency and inform process improvement.

2.1 Literature review

Conceptual and empirical review

Participation and Payment Willingness [P&PW] for CBHI:

Participation willingness concept has been used for long as a proxy for assessing willingness to join/ pay for CBHI in several studies (Mulunel, *et al*., 2020). However, while many authors view it as being concerned with behavioral aspects of the concept, willingness to participate deals with both the economic as well as the behavioral aspect. Participation willingness is defined as the motive of rural household heads to enroll in voluntary health insurance regardless of the amount of payment. It is closer to price judgment (reference price, acceptable price) and is linked to other variables that influence decision-making (satisfaction, loyalty and culture) (Mulunel, *et al*., 2020).

In the past two decades, several studies have been conducted to explore P&PW for CBHI scheme in multiple geographical areas across the globe with varying degree of probabilities (Simegnew, Takele, Berhanu,Tolesa & Getachew, 2023; Woreta, Getachew & Biks 2017; Aishat 2013; Martin et al, 2011; Dong, Mughisa, Gbangou, Kouyete, & Saureborn, 2004; Wang, Licheng, Winnie, &Hsiao, 2006;). For instance, in a survey study of 450 respondents in rural communities of plateau state Nigeria, it was discovered that 93.6 % of the respondents were willing to participate and pay for community based health insurance (Banwat, et al., 2023). Similarly, in a cross sectional survey of 497 respondents in Tanzania it was found that 98.99% were willing to participate and pay for community based health insurance (Petro, Felix & Somo, 2023.

Similarly, in a household survey to elicit household's heads P&PW for CBHIs and using two stage cluster sampling technique on 800 households in both rural areas of Nouna district and Nouna town Dong et al., (2014) revealed that it is feasible to implement CBHI in Nouna district, Burkina Faso. More so, Wang et al., (2006) in their study to empirically assess the relationship between level of social capital and individual demand for the newly established voluntarily based CBHI as measured by the probability of P&PW under different scenarios of government subsidies and using contingent valuation method to elicit individual's

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demand discovered that the probabilities of participation ranged between 43.1% to 75.9%. However, they remarked that participation might be increased by enhancing social capital in rural China.

Additionally, in study to determine P&PW for health insurance among rural and urban residents of Enugu and Imo states in south eastern Nigeria, Onwujekwe et al., (2011) also discovered that less than 40% were willing to pay for CBHI membership for themselves or other household members. However, the proportion of people who are willing to participate and pay were much lower in the rural communities less than 7%. A study conducted in north central Nigeria to determine rural households' heads willingness to participate and pay also found 87% of the respondents willing to participate and pay for CBHI (Babatunde, et al, (2012). Again Aishat (2013) while conducting a comparative descriptive cross sectional study among rural and urban household in Osun state and using econometric model (tobit model) concluded that only about 52.0% of the urban household were willing to participate and pay for CBHI as compared to 83.0% of rural household P&PW for CBHI. Hence, given the high P&PW observed it was further concluded that CBHI is feasible in the area studied.

Melaku, Shimles and Berhane (2014) in their cross-sectional study to assess willingness to participate and join CBHI among rural households in Debub South West Ethiopia also discovered that the probability of their respondents joining the CBHI was 78%.

Conceptualization of cooperative society

A cooperative (also known as cooperative, co-op, or coop) is an autonomous association of person united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise (International Cooperative Alliance, 2022). Cooperative society are people centered enterprises owned, controlled and run by and for their members to realize their common economic, social and cultural needs and aspirations (ICA 2023).

Cooperative allows people to take control of their economic future and, because they are not owned by shareholders, the economic and social benefits of their activity stay in the communities where they are established. The cooperative movement is an extensive phenomenon with at least 12% of humanity is a cooperator. There are about 3 million cooperative societies on earth (ICA 2023). Given the extensive number of cooperatives in the world its typical typology substantially varied across the globe.

Thus, the most common types of cooperative societies are consumer cooperative, worker cooperative, purchasing cooperative, producer and financial cooperative societies. While these

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type of cooperatives can be found in most locations however, the most prevalent cooperative found in rural areas is rural farmer's cooperative/agricultural cooperative society. Farmer's cooperative society also known as agricultural cooperative is an organization of farmers residing in the same locale that is established for their mutual benefit in regard to the cultivation and harvest of their products, the purchase of farm equipment and supplies at the lowest possible cost and the sales of their product at the maximum possible price (National Open University [NOUN], 2023).

Scholars are not unanimous on the classification of farmers' cooperation thus; a broader classification can be found in literature. Some cooperatives were classified according to the nature and characteristic of farmer's area of engagement while others were based on the problems or an opportunity in the sector that can be addressed through the formation of cooperative society. Such problems could be lack of access to input, market, finance, processing of farm produce, purchasing, efficiency etc. (Farmsquare, 2023).

For this study, six classes of cooperatives were studied and they include multipurpose, produce marketing, livestock, fishery agro industrial and other cooperatives. The selection was based on the prevalence and dominance of these cooperatives in the study area.

Theoretical Framework

Several theories have been suggested in an effort to measure the effect of many community variables on participation and payment willingness for CBHI scheme. While some studies have employed single theory, in this study two theories were used. Researchers have discovered that using a single theory may omit some important explanatory variables which might be misleading particularly if one is using multivariate analyses (Ulf, Peter& Jürgen, 2011). Thus, the two theories used were the rational utility maximization theory or better known as the neo classical theory of welfare economic and the social capital theory.

The first theory is rational utility maximization theory. This theory was incorporated because of the study's determination to also measure the variable of payment willingness or better known as willingness to pay for community-based health insurance scheme. Utility maximization theory was developed by utilitarian philosophers Jeremy Bentham and John Stuart Mill in 1748 – 1832 (Saros, 2023). This theory is an important concept in consumer theory as it shows how consumers decide to allocate their income (Gregory, 2018). It bases it beliefs upon individual preferences. It is a

theory postulated in economics to explain behavior of individuals based on the premise that people can consistently rank order their choices depending upon their preferences. The basic tenants or assumption are (1) completeness- that is individuals can rank order all possible bundles. By so doing individual can somehow compare any bundle with any other bundle and rank them in order of the satisfaction each bundle provides (2) more is better –meaning that a hidden property allows for costless disposal of excess quantities (3) mix is better – that is preferences are convex (4) rationality – it assume that innate preferences are fixed regardless of context and time (Schmitz, 2021). However, despite its importance, this theory was criticized severally. For instance, its underlying assumptions were unreasonable, and some assumptions were based on experimental or empirical evidence and that behavior did not conform to its prediction (Princeton.edu, 2023). This study is also anchored by social capital theory (SCT). Researchers of social capital theory have come to believe that instrument of social ties mediate interaction among individuals, group and community. It was found that instrument such as trust, reciprocity and solidarity can strongly influence interaction among people or communities. They can also influence an individual way of thinking, ultimate decision making and involvement in many social interaction issues (Petro, Felix & Somo, 2023).

3.1 Methodology

This research study was carried out using cross-sectional quantitative design. It was conducted among rural cooperative society members in three selected local government areas of Bauchi State, Nigeria. Bauchi State is one of the states in the North-East geo-political zone of Nigeria. The entire registered population of rural cooperative societies operating in Bauchi State constitute the population of the study numbering about Seven hundred fourteen 714 according Bauchi State Ministry of Cooperative and Poverty Alleviation, 2023. Sample size calculation was done using the formula for infinite proportion based on the suggestion of Lwanga & Lemeshow (1991) as $N = Z^2 * P (1-P)/d^2$. Thus, based on previous study findings where prevalent of participation willingness was 48.4% Onwujekwe (2009) and the required precision desired by the researcher is 5 and an alpha level of 0.05, the sample size was calculated as three hundred and eighty-four point six 384.6 which was rounded to three hundred and eighty-five 385. More so, given that an attrition rate of 10% was expected to be lost in the research therefore the sample size was increase by a factor of 1/ (1- 0.1) as suggested by Columbia.edu (2022). Thus, 11% more subjects were added to take care of nonresponse and incomplete questionnaires. The sample size therefore became Four hundred and twenty-seven 427respondents. Seven members where reduced making the final sample size as 420 which facilitated the sharing of the sample equally among the fifteen cooperative societies. Given that Bauchi

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State is divided into three geopolitical senatorial districts i.e. Bauchi North, Bauchi South and Bauchi Central Senatorial Districts, a multi stage sampling technique was employed as proposed by Lwanga & Lemeshow (1991). To collect relevant information, a pretested administered structure questionnaire was used. The questionnaire was prepared in English translated into Hausa and back translated into English to check for consistency. More so, to collect data pertaining to payment willingness, a double bounded contingent valuation approach was used. The items in the questionnaire were a combination of dichotomous as well as seven (7) point likert scale types questions designed to answer the research objectives. The selection of these questionnaire design was supported by (SPSS 2022; Hair et al.2014). To achieve validity of the research instrument, experts were presented with the questionnaire and were asked to further reviewed its content. This was to ensure that a comprehensive set of indicators that fully exhausts a construct domain are included. The structure and language of the instrument were modified in light of their corrections. In addition, a proper structuring of the questionnaire and a pretesting of every question contained in the questionnaire was carried out to ensure that they are valid. Finally, the design of the questionnaire was done in such a way as to facilitate easy understanding by the respondents to tick their preferred choice from the options provided without difficulty. Contingent valuation was also used to illicit respondents' willingness to pay a price premium. Reliability was tested using a pilot sample of 10% (42 respondents) as suggested by (Ganesh, 2017). All constructs had reliability of more than 0.600 of cronbach's alpha value. Pallant (2001) suggested that a cronbach's alpha value above 6 is considered an acceptable index. Both descriptive and inferential statistics was used to analyze the collected data. Logistic regression was used to determine the effect of the independent variables on the dependent one. This was achieved by using spss software version 21.

4.1 Result

Information regarding respondents' demographic characteristics and response rate is very vital in any research. This is because response rate determines if a survey has successfully engaged with the target audience thereby indicating interest or lack of interest by the sample group. Even though response to a survey among cooperative society members has not been impressive Henry, Ellen, & Nicholas (2022); Laura (2022), in this study a response rate of 90% was achieved. This finding falls short of what was achieved by (Kebebush 2023; Wakuma & Shimeles 2022); Muhammad, Muleken, & Negaligh 2022 and Getaneh, 2023). However, in community where data collection

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process has been viewed with a lot of skepticism obtaining this response rate is a great achievement.

Demographic analysis of the respondents shows that the majority 290 (76.5%) were willing to participate in to CBHI scheme should their coop society set up one in their community. The majority of the respondents 107 (28.2%) fall within the age range of 25-34 years, where males 296 (78.1), belongs to multipurpose cooperative society 99 (26.3), educated up to secondary school level 143 (37.7) and had a very good self-assessed health status 122 (32.2).

With respect to Contingent valuation result of willingness to pay a price premium for CBHI scheme. It was observed that, for the opening bid of 500 naira the majority 336 (88.7%) agree to pay 500 naira while 43 (11.3%) indicates that 500 naira was expensive. Those who intend to pay 500 naira were further asked to answer if the premium was to be increase to 600 naira will they pay. The majority 272 (81%) answer yes while 64 (19.0%) still maintain their stand of paying only 500 naira. For those who agree to pay both 500 and 600 naira were further asked to indicate the maximum amount they will pay given that they have answer yes to both 500 and 600 naira, it was discovered that the maximum amount they were willing to pay was 1500 naira. While the minimum amount was 650 naira. The mean maximum amount was 1291.23 ± 212.152 naira. For those who said 500 naira was expensive were further asked if the premium were to be reduce to 400 naira will they pay, all answer yes.

Analysis of respondents according to types of cooperative society revealed that majority 170 (44.9%) belongs to multipurpose cooperative society. A third 127 (33.5%) belongs to agro industrial cooperative society. Less than 5% belongs to livestock coop society. The result indicates that most cooperative members belong to an association that engages in a variety of activities even as they live in rural settings.

Result of participation willingness in CBHI scheme among different types of cooperative societies shows that producer marketing, livestock, fishery and agro- industrial cooperatives have 100% desire to participate in CBHI scheme. However, only 81(47.4%) among multipurpose cooperative members agree to participate.

Table 1 Distribution of Participation Willingness according to Type of Cooperative Society

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Participation willingness	Type of cooperative society					
	Multipurpose	Produce marking	Livestock	Fishery	Agro industrial	Total
NO	89 (52.4%)	0 (0%)	0 (0%)	0(0%)	0(0%)	89(23.5%)
Yes	81 (47.4%)	58(100%)	9(100%)	14(100%)	128(100%)	290(76.5)
Total	179(100%)	58(100%)	9(100%)	14(100%)	128(100%)	379(100)

Source: Field survey, 2023. P value < 0.05

Given that the dependent variable i.e. participation willingness in CBHI scheme is a dichotomous type variable, logistic regression test was performed. However, prior to reporting logistic regression statistic result, evaluation of certain assumption and analysis of the model goodness of fit was performed and the following required parameters were checked. Since, Hosmer-Lemeshow statistic indicates a poor fit if the significance value is less than 0.05, in this study, the model adequately fits the data. Hosmer & Lemeshow chi square X^2 was (.00).4. P > .05, The model explained 56.4% (Negelkerke R^2) of the variable participation willingness as shown in table 2 below and correctly classified 76.5% of cases i.e. both model sensitivity and specificity was very good (Spss, 2023). The result of the logistic regression test was reported from Spss output table "variable s in equation table" as shown in table 3. It was observed that all the cooperative society membership types entered in to the model had a higher odd of joining CBHI scheme. However, except for producer cooperative society Wald statistics .007, none has any Wald or statistical significance effect on participation willingness in CBHI scheme. It was further discovered that, all the variables or all the cooperative societies entered have a lower limit LL of the confidence interval of less than one [LL<1] and the upper limit greater than one [UL>1]. Thus, indicating that cooperative society type in this study are protective. Therefore, the null hypothesis is accepted. Thus, belonging to a cooperative society type does not significantly affect participation willingness in CBHI scheme

Table 2: Model Goodness of fitness test

Hosmer and Lemeshow Test		
Chi-square	Df	Sig.
.000	4	1.000
Model Summary		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square

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235.293[a]	.375	.564		
Classification Table				
Observed	Predicted			
		Participation willingness		Percentage correct
		No	Yes	
	No	0	89	.0
	Yes	0	290	100.0
Overall percentage				76.5

Table 3 Variable in the equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP (B)	
Cooptype			.512	5	.992		Lower	Upper
Producer coop(1)	-.046	.567	.007	1	.935	.955	.315	2.899
Fishery coop(2)	-.185	.490	.143	1	.705	.831	.318	2.172
Livestock coop(3)	-.260	.467	.309	1	.578	.771	.309	1.927
Multipurpose coop(4)	-.163	.443	.135	1	.713	.850	.357	2.025
Agro industrial coop(5)	-.260	.454	.326	1	.568	.771	.317	1.879
Constant	1.358	.374	13.205	1	.000	3.889		

a. Variable(s) entered on step 1: cooptype.

5. Discussion

Earlier it was stated that the objective of this study was to examine the effect of cooperative society membership type on the demand for and participation willingness in community based health insurance scheme. The result indicates that the majority were willing to participate in CBHI scheme. The result was in line with the finding of Petro and Felix, (2023); this empirical result also is in line with the findings of previous studies. For instance, Mebratu and Desu (2022), in their study to determine willingness to pay for CBHI scheme and factors associated with it among

household heads in rural community of Southwest Shoa zone of Ethiopia, found that, about 65% of household heads were willing to pay for CBHI scheme. The result also was in line with the findings of Kado, Merga, Aden, Dessie & Geda 2020; Amare, Measho & Yalemzewd, 2019; Kadek & Satibi, 2020; Lazarus, Lloyd, Samuel, Victoria, David & Burgani, 2017; where they both discovered substantial number of respondents willing to participate in CBHI scheme from their studies, The increasing number of people willing to participate in CBHI scheme can be explained by the fact that, poor people particularly in rural agrarian communities have experienced what experts term catastrophic health expenditure, because of their inability to pay for health services at the point of health care, better appreciate the benefits of CBHI scheme and are willing to join in the CBHI scheme (Benjamin, Ishmael & Tondor, 2021). The result may suggest the impact of global increase in advocacy for CBHI scheme in low- and middle – income countries (Ramadhani & Stephen, 2021).

It was also observed that multipurpose coops were the majority in aspiring to participate in CBHI scheme. Given that, multipurpose cooperative society offers diverse services, engages in multiple sectors and provides a wide range of benefits including social welfare it is likely that they may have members that have experience in various social welfare programmes that might have inform their decision to participate in CBHI scheme. This finding was in line with that of Nwanko, Ogbodo and Ewuim, (2016) were they found that farmers' multipurpose cooperative was a cardinal element in the participation of many businesses and an even a driver in financial performance of the cooperative when compared with other cooperative societies. It was further discovered that all the variables entered exhibited the characteristics of a protective effect of negative coefficient, odd ration of less than one and a confidence interval (ci) for odd ratio of less than one. This means that their presence is associated with a decreased like hood of participation willingness in CBHI scheme. This finding contradict that of Otaokpukpu and Ogba (2017) where they found a statistically significant weak relationship between cooperative type and financial performance of their respondents.

6.1 Implications

The main implication of this findings is that being a member of a particular cooperative society does not influence participation in CBHI scheme, thus, other factors may play a more significant role in determining participation willingness. More so, promoters' of CBHI scheme should focus on universal benefits and incentives rather than specific cooperative society type. The finding further challenges the assumption that cooperative society influence health insurance participation. It also shows that joining CBHI scheme depends to large extend on broader contextual factors. The findings also expose the notion that individual level factor outweigh organizational nature and characteristics.

7.1 Conclusion and recommendations

Earlier, it was stated that, the main objective of this study was to examine the effect of cooperative society membership type on the demand for and participation willingness in community based health insurance scheme. It was found that the majority of the respondents were willing to participate thus, indicating demand for CBHI scheme. However, the effect of belonging to a particular cooperative society type does not influence participation even when almost all the cooperative society members have the desire to join the scheme.

Therefore, it was recommended that CBHI scheme promoters should prioritize targeted interventions addressing individual level barriers. More so, marketing strategies should emphasize some other benefits of the scheme rather than cooperative society specific advantages. Given that this study was conducted in one geographical area i.e. Bauchi state comparative study across different context may find different result.

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