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Social Capital and Willingness to Pay for Community Based Health Insurance: Empirical Evidence from Rural Tanzania

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Abstract

This study examines the effect of social capital on willingness to pay (WTP) for health services provided through community based health insurance schemes (Community Health Fund) in Tanzania. The study covered 274 household heads. We use probit regression analysis to model the relationship between the predictors and our outcome variable. Our results have shown that with the exception of religion, all other social capital variables have a positive and significant impact on the WTP for the Community Health Fund (CHF). Specifically, membership in social organisations and networks, trust among community members and trust of community members on scheme management are positively and significantly related to WTP. On the other hand, the age, education level, household size and number of children and participation in health insurance are not predicting WTP for CHF. Taken together, these results suggest that enhancing access to health care services in the rural areas and the sustainability of CHF would require building appropriate forms of social capital at individual and community levels. Specifically, CHF may increase enrolment through the existing social organisations and associations. Similarly, CHFs may well increase their membership if the avenues for trust building are created and nurtured.

JEL Classifications: I1, I3

Keywords: social capital, willingness to pay, community based health insurance

1. Introduction

In the face of shrinking budgets and other institutional hitches in the provision of quality and affordable health care services, governments and donor agencies in a number of developing countries are now implementing Community Based Health Insurance Schemes (CBHIs) as a social protection and an alternative measure to achieving universal coverage for health care. Accordingly, social protection is increasingly becoming a significant component of poverty reduction strategies to reduce susceptibility to socioeconomic, natural and other shocks, especially among the rural dwellers (World Health Organization [WHO], 2005; Gottret & Schieber, 2006).

CBH is a relatively new approach in the provision of health services to the poor. Among other factors, CBHIs emerged from the limitations of the microcredit programmes and conventional health insurance scheme's failure to protect low-income households and vulnerable rural population from

health shocks and non-use of health services (Ekman, 2004; Carrin, Waelkens, & Criel, 2005; Donfouet & Mahieu, 2012). CBHIs are non-profit and voluntary membership health insurance schemes aimed at protecting the poor and vulnerable against the high costs of seeking medical care and treatment. Usually members of the scheme pay on a regular basis a prescribed amount or premium into a collective fund, which is then used to pay for health services when members fall sick (WHO, 2005). In rural areas, payments could also be in the form of crops or other non-monetary payments (Carrin *et al*., 2005).

Proponents of community based health insurance schemes argue that these schemes have numerous advantages. Firstly, they enable individuals and low-income households that often lack access to other financial protections or formal insurance to better able manage their financial risks and reduce vulnerability in the face of financial shocks resulting from high out-of-pocket costs at the time of health care use (Preker & Carrin, 2004). This is because they provide avenues for access to health services by spreading costs and risks over a wide population within a community. In this way, they implicitly redistribute resources from healthy to sick individuals and from wealthier to poorer households; and hence contributing to equitable access and health care financing. In addition, such schemes are locally initiated, financed and managed by the members, and hence they facilitate the involvement of community members in the process of defining and deciding the benefit package to be covered by the schemes (Dror & Preker, 2002). The community management of CBHIs also provides flexibility to arrange payment plans according to income patterns of their members (Carrin *et al*., 2005). Because of community involvement CBHIs have tended to be more responsive to the preferences and demands of the local population (Carrin, de Graeve, & Deville, 1999). Further, community involvement ensures a sense of ownership and financial sustainability of the schemes (Ekman, 2004).

On the other hand, the benefits that accrue tend to remain and benefit the members (Dror & Preker, 2002) but also members are provided with more power that enables them to negotiate for better service quality from health care providers (Ginneken, 1999). Evidence from literature also shows that CBHI schemes they help increase the usage of health care services and the odds of health seeking behaviours among the poor (Gottret & Schieber, 2006). Moreover, CBHIs are purported to significantly contribute to increase in productivity and economic growth and consequently achieving the Millennium Development Goals (MDGs) (Oyekale, 2012).

Research has, however, indicated that despite the eulogised benefits, many CBHIs experience low population coverage and sustainability hurdles. Some of these hurdles relate to willingness to pay, information asymmetry, price and quality of services (Dror & Preker, 2002). There are also deficiencies in scheme designs, weak management experience in risking sharing and risk pooling; and the lack of institutional and human resource capacities (Preker *et al*., 2004). Other limitations include the lack of sufficient awareness creation mechanisms (Onwujekwe *et al*., 2010). It is also argued that the benefits of CBHI schemes have not been fully realised because policy designs regarding CBHI schemes and promotional activities have grossly ignored the important role of social capital. Mladovsky and Mossialos (2008) argue that "there is no systematic incorporation of social context into CHBI policies, including a focus on values, goals and power relations". Similarly, Eriksson (2011) argues that despite more than a decade of research on social capital, the theoretical and empirical connections between social capital and health outcomes are still not resolved, but also the implications of social capital for health and health promotion are not exhaustively studied.

Tanzania adopted community based health insurance schemes (also known as Community Health Fund - CHF) as a national strategic approach for improving access to health care services in rural areas in 1996. However, since its inception, to the best of our knowledge the linkage between social capital and willingness to join CHF has not been explored. This is despite evidence from research that the formation and efficient functioning of CHF is largely determined by social capital stocks owned by community members (Balsa, Rossi, & Triunfo, 2009).

Therefore, the main objective of this paper is to examine the effect of social capital on willingness to pay for health services provided through a community health fund in Tanzania. Examining the influence of the social capital on the demand for community based health insurance is important because could provide useful information for informed decision making by policy makers and development practitioners when establishing or promoting community based health insurance in the country. The paper also contributes to the current debate in social capital by providing an empirical evidence of the impact of social capital in influencing the household's decision to purchase a health insurance or join a health insurance scheme.

2. Literature Review

During the past two decades, social capital has featured in a number of academic literature and theoretical debates. Nevertheless, to date, there is no agreed definition of social capital. As a result, its definition remains ambiguous, disputed and vaguely understood. Fukuyama (1999) is of the opinion that many of the definitions given to social capital allude to its manifestations as opposed to social capital itself. Also Lenci (1998, p.24) argues that "the literature on social capital is very confusing, lacking both terminological precision and theoretical ragout". Correspondingly, there is no consensus in the literature on how social capital ought to be measured. Precisely, Fukuyama (1999) suggests that one greatest flaw of the social capital concept is the lack of unanimity on how it should be measured. In essence, this problem arises due to the fact that social capital is multi-dimensional, multidisciplinary and multi-functional in nature, but it also bears a close relationship with other forms of capital, particularly human capital (Hean, Cowley, Forbes, Griffiths, & Maben, 2003).

For example, Bourdieu (1986, p.248), defines social capital as the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition'. Social capital is also defined as those "features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions" (Putnam, Leonardi, & Nanetti, 1993, p.167). On the other hand, Fukuyama (1999, p.4) defines social capital as the existence of a certain set of informal values or norms shared among the members of a group that permit cooperation among them". Lin (2000, p.786) defines social capital as "… investment and use of embedded resources in social relations for expected returns". The World Bank defines social capital as the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions among people and contribute to economic and social development (Grootaert & van Bartelaer, 2001).

In the absence of analogy in its definition and measurement, researchers, such as Grootaert and van Bartelaer (2001) suggest that social capital can be measured in terms of three proxy indicators: membership in local associations and networks, trust and adherence to community norms and collective action. Similar views are shared by Ishida and Yokoyama (2004) who suggest that network and memberships, social trust and collective action are good proxies for social capital. In this paper, memberships in networks and associations; and social trust are used as proxy measures of social capital.

2.1 Types of Social Capital

Given that social capital is a multidimensional concept, scholars have identified different types, characteristics and functions. However, literature recognises two main types of social capital, namely: cognitive and structural social capital (Krishna & Shrader, 2000). Cognitive social capital can be defined as the web of relationships among actors that is built on the foundation of shared norms and values; attitudes, reciprocity, trusts, and beliefs (Krishna & Uphoff, 2002). Cognitive social capital can also be defined as "the relationship embedded in mental processes and resulting ideas that are

reinforced by culture and ideology, including norms, values, attitudes, and beliefs that contribute to cooperative behaviour" (Uphoff, 2000, p.218). According to Nahapiet and Ghoshal (1998) cognitive social capital develops when individuals through language, codes and narratives are able to develop reciprocal informative structures. On the other hand, structural social capital can be viewed as the established roles and social connections based on a network of relationships among individuals that is supplemented by rules, procedures and precedents (Hitt, Lee, & Yucel, 2002; Uphoff, 2000). In principal, structural social capital underscores the relationships between human behaviour and organizations, whereas, cognitive social capital centres more on the psychological aspect of the individual (Krishna & Uphoff, 2002).

Social capital is also categorised into bonding, bridging, and linking social capital (Putnam *et al*., 1993). Bonding social capital is characterised by strong ties within a network or a homogenous group, such as a relationship between an individual and his family, friends and relatives or ethnic group. These ties underpin common characteristics and function as a source of help and support among members. Bridging social capital on the other hand, can be defined as bonds of connectedness that are formed across diverse social groups or across multiple groups, such as business associates, acquaintances, people from different ethnic groups and former co-workers (Woolcock & Sweetser, 2002). Bridging social capital enables individuals to take advantage of the outside world resources including associations and organisations. Linking social capital refers to the vertical ties between people in different formal or institutionalized power hierarchies or agencies in higher influential positions, such as political leaders, financial managers and experienced business owners (Woolcock & Sweetser, 2002). Despite their differences and functions, these types of social capital are commonly connected, mutually reinforcing and complementary (Uphoff & Wijayaratna, 2000) including the possibilities for the promotion of mutually beneficial collective action (Krishna & Uphoff, 2002).

2.2. The Functions of Social Capital

Increasing evidence from prior research shows that higher levels of social capital facilitate improved socioeconomic development outcomes at individual, household, enterprise and national levels, both in low-income and developing countries (see for example, Narayan & Pritchett, 1999). The World Bank considers social capital as an important poverty alleviation tool and the 'missing link' between natural, financial and human capital; and economic growth and development (Grootaert, 2001). Yokoyama and Ishida (2006) also argue that social capital through collective actions may improve the quality of life in rural settings through improved productivity in agriculture, diversification of rural economic activities and improved rural resource management.

Specifically, research suggests that social capital helps to reduce transaction costs and other operational difficulties, including the cost of access to useful information in a business environment that is characterised by information asymmetry and incomplete contracts (Alesina & La Ferrara, 2002). Among entrepreneurs, social capital can contribute to enterprise growth through reductions in transaction costs between actors, in terms of information, bargaining and decision costs (Landry, Amara, & Lamari, 2002).

In exploring the impact of social capital on agricultural commodity traders in Madagascar, Fafchamps and Minten (1999) found that through their social networks, traders were significantly able to reduce their business transaction costs and earn higher profit margins despite operating in a business environment that was characterised by information asymmetry. Evidence from Japan also shows that through their social capital in the form of networks, individuals engaged in agribusiness activities were able to exchange information and establish linkages among them, but also share information of mutual benefit. In particular through their networks, farmers were able to negotiate with travel agencies with a view to improving customer management of agribusiness facilities related to local foods (Sakurai, 2006).

Social capital through social networks is also assumed to provide the possibilities for the exchange, access and rapid diffusion of the latest technological innovations (Grootaert & Narayan, 2004). Evidence from rural Tanzania by Narayan and Pritchett (1999) shows that village level social capital in the form of membership and social trust was able to encourage greater use of modern agricultural inputs and hence improvement in the overall household incomes. Their study also found that the impact of social capital on household welfare was even higher than that of education and physical assets owned by the households. Moreover, in their study that investigated the effect of social capital on farmers' choice to use sustainable agricultural practices among Georgian farmers, Munasib and Jordan (2011) also found that involvement in farmer associations had a positive effect on the decision to adopt sustainable agricultural practices. Specifically, they found that a one unit increase in membership (one more membership involvement) was able to raise the odds of adoption of pest control and grazing practices by 2.6% and 1.9% respectively.

Research also suggests that social capital helps to increase the possibilities for collective action among community members which in turn enhance their effectiveness in solving their common problems (Putnam *et al*., 1993). Social capital is also assumed to provide avenues for monitoring performance efficiency of government institutions; and strengthening democracy and transparency in public administration (Putnam *et al*., 1993; Narayan & Pritchett, 1999). In addition, social capital expedites efficient functioning of labour markets through channelling information about jobs and job applications (Granovetter, 1995).

There is also evidence that social capital is an important tool in combating numerous social maladies in communities, for example, reducing crime levels, tax evasion and corruption (Halpern, 2001). Social capital also enables individuals to accumulate and gain access to other forms of social capital (Coleman, 1990; Basargekar, 2010). Coleman (1990) adds that social capital is also able to augment the effects of physical, human and financial capitals.

Further, social capital is an important variable in educational attainment (Israel, Beaulieu, & Hartless, 2001). Arguably, social capital provides opportunities for exchanges that arise through the interactions between students and their teachers/professors and among students as they work together in the learning processes. Social capital can also contribute to educational attainment when through social networks, community members and other stakeholders are able to mobilize resources needed to support educational development and strengthening education institutional capacities (Francis *et al*.,1998). Social capital is particularly important in education attainment when parents are able to connect with resourceful persons who can provide access to resources that can assist them to support their children's education, such as information and money (Fasang, Mangino, & Brückner, 2010).

2.3. Social Capital and Health Outcomes

In recent years, researchers have explored the role of social capital on health outcomes. The adage behind these efforts is that individual's health outcomes and behaviour are to a large extent determined by social capital attributes than by the rational choices of the individual (Eriksson, 2011). It is also argued that social capital influences the importance that people ascribe to their health (Putnam *et al*., 1993; Wilkinson, 1996; Portes, 1998).

Precisely, research posits that social capital through social cohesion can promote the transmission and diffusion of relevant health information, including shared social norms that discourage health damaging behaviours, such as drinking and smoking (Chuang & Chuang, 2008; Takakura, 2011). This is particularly the case where the health care market is characterised by asymmetric information between health suppliers and consumers (Rocco & Suhrcke, 2012). Social capital through social cohesion can also produce the so called "buffering effect (De Silva, Huttly, Harpham, & Kenward, 2007; Fujisawa, Hamano, & Takegawa, 2009). Important outcomes of the buffering effect include the promotion of social cohesion and prevention of depression and mental disorders that result from social isolation or loneliness (Hendryx, Ahern, Lovrich, & McCurdy, 2002). Similarly, the buffering

effect contributes to improving patients' ability to recover, increased life satisfaction and self-esteem (Borgonovi, 2008).

Social capital may also affect health outcomes through the establishment of informal insurance and mutual assistance mechanisms that supplementing formal health insurances. Similarly, social capital enables individuals to easily access social or moral support and healthcare related assistance services, for example, financial assistances and helps in contacting doctors (Giordano & Lindstrom, 2010). Social capital has also been observed to influence health outcomes through the influence of peers on health behaviours (Merzel & D'Afflitti, 2003). This is because peers may function as role models for good health behaviours (Eriksson, 2011).

Further, social capital may serve to coordinate people's efforts to work together with a view to solving their collective health problems and but also facilitate efficient allocation of resources for a mutual health benefit (Eriksson, 2011). Also McNeill, Kreuter, and Subramanian (2006) argue that members through their social capital can form a bond of attachment and connectedness to one another which in turn enables them access health enhancing resources and material goods. Likewise, through collective action communities may demand public authorities to provide health-promoting public goods, for example, health infrastructure and other support services (Rocco & Suhrcke, 2012). However, research suggests that the positive health outcomes resulting from the inertia of social capital are more vivid among women than men (Eriksson, 2011). It is therefore argued that mobilizing collective social capital may be more health-enhancing for women than for men (Eriksson, 2011).

2.4. Social Capital and CBHI

Regarding the impact of social capital on the demand for CBHI, prior research suggests that social capital is an important asset that contributes not only to success but also to the increased demand and WTP for CBHI at the community level (Donfouet & Mahieu, 2012). This is because social capital facilitates the effective functioning and sustainability of CBHI (Donfouet, Essombè, Mahieu, & Malin, 2011a; Zhang, Wang, Wang, & Hsiao, 2006). Earlier studies, for example, Hsiao (2001) have also reported that people are more willing to pay for CBHI in communities that have sufficient stocks of social capital. Zhang *et al*. (2006) in their quest for the effect of social capital on demand for CBHI among farmers in rural China also found that social capital measured by trust and reciprocity had a positive and significant effect on the demand for CBHI. Moreover, in exploring the effect of social capital on willingness to pay for community-based health insurance in rural Cameroon, Donfouet *et al*. (2011a) found that willingness to pay and demand for CBHI services were higher among communities with sufficient stocks of social capital than otherwise. Also, in a review of recent developments that address the link between CBHI and social capital, Donfouet and Mahieu (2012) found that higher levels of social capital in the form of social ties at the community level have positive and significant impacts on household's decision to join a CBHI. However, Donfouet and Mahieu, also suggest that although social ties among community members could benefit CBHI, may as well be detrimental to CBHI if members hold negative perceptions towards the scheme.

3. Methodology

The data for this study were collected from Kilosa District Council in Morogoro region in Tanzania. The district has nine (9) divisions and 46 wards. The district was selected for the study because of being one of the pilot districts for CHF in the country.

The study involved the use cross-sectional study design. We employed multi stage sampling in combination with a systematic sampling technique to choose the sample. Firstly, three wards and two villages in each ward were chosen randomly based on their size and availability of a public health facility. Secondly, in each village, interviewed households were also selected randomly using

systematic sampling from the village list. In systematic sampling, the interviewed household heads were selected randomly from a population of 4026. These were selected at every kth term by skipping every 10th household in the village list. While a total of 400 household heads was sampled for the study, only 274 respondents had complete information that could be used for the analysis.

Table 1. Demographic and social characteristics of the respondents

Variable	Category	Frequency	Percent
Age in years(binned)	20 – 35	72	26.30
	36 – 42	74	27.10
	43 – 53	62	22. 60
	54 and above	66	24.10
Education level	Never attended school	66	24.10
	Primary school	200	73.00
	Secondary school	8	2.90
Marital status	Single	16	5.80
	Married	218	79.60
	Divorced	4	1.50
	Widowed	36	13.10
Number of household members	1-3	30	10.90
	4-6	206	75.20
	7-9	38	13.90
Number of children	0-2	112	40.90
	3-5	134	48.90
	6-9	28	10.20
Sex	Female	106	38.70
	Male	168	61.30
Economic activity	Unemployed	2	0.70
	Self-employed/business	26	6.60
	Paid employees	4	0.70
	Farmers	236	86.10
	Others	8	2.90
Income level (TZS)	Less than 30,000	64	23.40
	30,001 - 50,000	74	27.00
	50,001 -100,000	77	28.10
	100,001-150,000	28	10.20
	Above 150,000	31	11.30

Data for this study were collected using a questionnaire. Before undertaking the survey, focus group discussions were held and pre-test of the questionnaire was done to fine-tune the questionnaire. The information collected focused on social capital variables, the socioeconomic characteristics of the households and willingness to pay. The study was conducted between the 16th and 28th of March 2012. Demographic and socioeconomic characteristics of the sampled respondents are given in the table 1.

3.1. Study Variables

3.1.1. *Dependent Variable*

For the purpose of this article, our dependent variable is a willingness to join the Community Health Fund (CHF) or purchase a CHF card. We used contingent valuation method (CVM) to determine willingness to pay. This method elicits what individuals would be willing to pay for a hypothetical benefit package or value, in this case a CHF insurance benefit package. Literature shows that the CVM approach has been used in a number of previous studies, for example, Dror, Radermacher, and Koren (2007). Particularly, we used the Single-Bounded Dichotomous Choice (SBDC) approach. In the SBDC surveys, respondents are usually presented with one bid amount to which they can respond with either a yes or no to show their willingness to pay or not to pay (Dror & Koren, 2012).

The bids used in the final study were TZS 5000, 8000, 10,000 and 15,000. These were firstly established during the pilot study. To arrive at these bids, respondents were presented with a health insurance benefit package and then asked whether they are willing to pay the specified amount. We used unidirectional bidding game. We started with the highest bid; the bid was then lowered until respondents accepted the specified amount. We then used the lowest bid; the bid was then raised until respondents could no longer accept the specified amount. During the main study, the bids were randomly assigned to the respondents. Hence, our response variable carries a value of 1 and 0 when respondents are willing or not willing to pay for the CHF card or join the CHF scheme.

3.1.2. *Independent Variables*

Among the key features of social capital that contribute to health outcomes is the trust between members (Donfouet & Mahieu, 2012). This is because trust is a minimum requisite for the formation of any social connections and interactions (Ghosh & Ray, 1996). Trust also enhances the exchange and diffusion of health related information, eases cooperation among individuals and inspires risk adverse members to share their resources for a common use (Dror & Preker, 2002). Moreover, in an environment where people trust each other, healthy norms are more easily spread (Eriksson, 2011). Trust has been yet considered to bring positive health outcomes only if it is reciprocal (Eriksson, 2011). In their study that explored the impact social capital on health outcomes from a European perspective, Rocco and Suhrcke (2012) found that social capital stocks owned by the community were a significant predictor of individuals' health. Specifically, this was observed in regions that experienced high trust levels among individuals. They found that an increase in individual's trust by one unit (on a scale of 0 to 10) was matched a corresponding increase in the probability of being in good health by 2.8%.

Therefore, to determine the impact of social capital on willingness to pay for a CHF card or join the CHF, we firstly asked respondents whether they participate in community organizations, such as lending and savings groups (SACCOs) or any other informal, tribal associations and their religious affiliations. Respondents were also asked regarding their level of trust in each other in the village, including the degree of trust in the management of the CHF or the people that manage the fund.

We also considered other variables influencing willingness to pay for the CHF insurance cover. This is because studies have shown that willingness to join community based health insurance schemes is influenced by a myriad of factors. Such factors include, among others, household, or

individual characteristics and scheme related factors such as the size of the premium, frequency of payment and coverage of household members and institutional factors (Donfouet, Makaudze, Mahieu, & Malin, 2011b). Study variables are presented in the following table 2.

Table 2. Variables description and measurement

	Variables Description	Measurement/Coding
	Dependent variable	
	Willingness to pay	1= Yes, 0 = No
	Independent variables	
	Social capital variables	
1.	Membership in social associations (formal and informal)	1= Yes, 0 =No
2.	Participation in CHF	1 = Yes, 0 = No
3.	Trust for each other among community members	1= Yes, 0 = don't trust
4.	Trust in the CHF Management	1= Yes, 0 = don't trust
5.	Religion	1= Christian, 0= otherwise
	Other variables	
6.	Age of household head in years	Continuous (transformed into ln)
7.	Education level of household head	1= if the highest level of education completed is secondary, 0= otherwise
8.	Sex of household head	1= Male, 0= otherwise
9.	Number of members in a household	Contiguous (transformed into ln).
10.	Number of children in a household	Continuous (transformed into ln).
11.	Economic activity	1= farming, 0= otherwise
12.	Monthly average income	Categorical
13.	Perception regarding CHF	1= in favour, 0= otherwise

3.3. Multivariate Analysis

To analyse the social capital variables influencing households' willingness to pay for a health insurance, we used probit regression analysis. This is because our response variable carries a value of 1 and 0 when respondents are willing or not willing to pay for the insurance cover. We used the STATA statistical package to analyse our data. Our probit regression model produced a good fit of the data with the Chi square value of the regression being statistically significant ($p<0.01$).

4. Results and Discussion

The objective of this paper was to examine the impact of social capital on willingness to pay for health services provided through community based health insurance schemes in Tanzania. Results from the probit model are presented in table 3.

Table 3. Probit regression analysis results: WTP as a dependent variable

Variables	DF/dx	Std.Err	Z	P>z
Membership in associations and networks	0.2219	0.0774	2.66	0.008
Participation in CHF	0.1245	0.0830	1.47	0.143
Trust on each other(reciprocity trust)	0.2186	0.0691	3.05	0.002
Trust in scheme management	0.1924	0.0871	2.08	0.038
Religion of household head	-0.1199	0.0809	-1.48	0.140
Income 1: less than Tshs.30,000 (ref)	0.5117	0.1289	2.62	0.009
Income 2: Tshs.30,000 - 50, 000	0.5307	0.1275	2.85	0.004
Income 3: Tshs.50,001-100,000	0.5669	0.1244	3.00	0.003
Income 4: Tshs.100,001-150,000	0.3912	0.1248	2.07	0.039
Income 5: Above Tshs.150,000	0.4827	0.0877	3.07	0.002
Bid amount	-0.2985	0.0710	-4.20	0.000
Sex of household head	0.1594	0.0783	2.02	0.044
Perception regarding CHF	-0.2691	0.1168	1.90	0.058
Education level of household head	0.0230	0.0889	0.26	0.796
Economic activity	-0.2370	0.0980	-2.13	0.033
Age of household head	0.5300	0.0949	0.56	0.576
Number of members in a household	0.1593	0.8440	1.89	0.059
Number of children in a household	-0.0551	0.0910	-0.61	0.544
N = 274				
LR chi^2 = 100.41				
Prob > chi^2 = 0.0000				
Log likelihood = -139.36				
Pseudo R^2 = 0.2648				

Table 3 above shows that there is a positive and statistically significant impact between social capital variables and willingness to pay for the CHF. Precisely, results have shown that participation in social associations and networks is positively impacting the willingness to pay for the CHF. This suggests that participation of the household head in associations and social networks increased their probability to pay for CHF. In particular, those who were members of social organisations or

associations were 22 per cent points more willing to pay for a health insurance than those who were not ($p<0.01$). This result also supports a finding by Zhang et al. (2006) and Donfouet *et al*. (2011a) who report a positive relationship between social capital and willingness to pay for a community based health insurance. From these results we infer that CHF could increase enrolment and membership through the existing social organizations and associations.

Similarly, trust on the CHF management is a significant predictor of willingness to pay. This suggests that when community members trust scheme management, individuals are more willing to pay or join the scheme than when they do not trust the scheme management. Those who trust CHF management were 19.2 per cent points more willing to pay for a health insurance than those who do not trust the CHF management ($p<0.05$). Evidence from other studies in Tanzania also shows that trust in the CHF management is among the key factors determining enrollment in CHF (Macha *et al*., 2012). This further suggests that CHFs could increase their membership if the avenues for trust building or building a positive image of the schemes are created and nurtured. Similarly, the level of trust among community members seems to be a significant predictor of willingness to pay. Results have shown that those who have trust in others were 21.9 percent points more willing to pay for a health insurance than those who were not ($p<0.01$). Our results also agree with the findings by Zhang *et al.* (2006) who reported a positive impact of trust among community member with their probability of willingness to join a community based insurance in rural China.

Our study also sought to explore the impact of the participation experience in insurance schemes on the respondents' willingness to pay for the randomly assigned bid amounts. Results have demonstrated that there is a negative relationship between participation in insurance schemes and WTP. This suggests that respondents who were insured were less likely to pay for the insurance than uninsured ones because they already had a better understanding of the schemes' benefits package. However, their experience with the scheme could not produce a significant impact on their WTP ($p =0.143$).

We also find that only 8.4% of all the studied household heads were in favour of the scheme. Of these, only 15.2% (11of 72) of the insured respondents were in favour of the scheme. These results may suggest that CHF's product and service designs were perhaps not meeting customers' expectations and needs. This could further imply that if prudent measures are not designed and instituted, the schemes are more likely to suffer declining membership but also face sustainability problems in the future. However, their perception about the scheme had a weak impact on their willingness to pay ($p=0.058$). Accordingly, this suggests that public awareness campaigns could be increased to better inform the rural communities as regards the benefits of these schemes and redesign their products to meet member demands.

The main economic activity of the respondents was farming (86.1%). This is followed by self-employed/business (6.6%). The remaining respondents were involved in other activities. The coefficient for economic activity is significant and negative ($p<0.05$). This suggests that compared to other economic activities, respondents that were involved in farming were less willing to purchase a health insurance, possibly because the majority of rural dwellers have low incomes. Our results also agree with the findings by Donfouet *et al.* (2011a) who report that household heads who are involved in farming are less willing to pay for CHF than those who are self-employed or involved other economic activities. In addition, income distribution shows that about 50% of the respondents were earning an average monthly income of TZS 50,000 (US$ 30)[1] or less. This is equivalent to one dollar per day. This shows the scale of poverty, but also supports the notion that poverty is mainly a rural phenomenon in developing countries. We also find that the coefficients for income levels are positive and significant. This implies that respondents at higher income categories were more willing to pay

[1]Exchange rate: US$1 =Tanzania shillings 1650

for an insurance cover than respondents in lower income categories. This result is consistent with findings by Dror *et al*. (2007), Oriakhi and Onemolease (2012) and Bonan, Lemay-Boucher, and Tenikue (2013) who found a positive relationship between income levels and respondents' willingness to pay for a health insurance. However, Dror *et al.* (2007) also found that the relationship between WTP and household income is less than linear. Our results also show that the coefficient of the bid amount is negatively related to willingness to pay. This could suggest that as the CHF premiums increased, households were less willing to pay for CHF. This finding is consistent with the conventional demand curve, which shows that as price increases less and less of the services or goods are demanded.

Results have shown that of the studied household heads, 61.3 were males and 38.7% were females. We also find that the coefficient for sex is positive and significant. The implication is that male respondents were more willing to pay for a health insurance cover than females. This result agrees with findings by Dror *et al*. (2007), Ying *et al*. (2007) and Kuwawenaruwa, Macha, and Borghi (2011) who also found that males are more willing to purchase a health insurance than the female headed households.

We also observe that 73% of respondents had attained primary level education, and only a fraction had attended secondary education. However, the educational level is not a statistically significant predictor of WTP for health insurance. This suggests that for the sampled respondents, education level did not influence their decision on whether or not to purchase a health insurance. This finding also agrees fairly well with finding by Binam, Nkama, and Nkendah (2004) and Bärnighausen, Liu, Zhang, and Sauerborn (2007) who reported a non-significant impact of education on the WTP for community based health Insurance in Cameroon and China respectively. On the other hand, our finding contradicts those of Dror *et al*. (2007) and; Oriakhi and Onemolease (2012) who found a significant relationship between education of the household head and WTP.

The respondents' age distribution shows that the minimum age was 20 years, whereas maximum was 90 years with the mean age of 45.7 years. Nonetheless, the age of the household head bears no statistically significant impact on WTP for a health insurance. This finding shows that for the studied respondents, their age categories could not have an influence on their WTP for the health insurance. Our result also supports earlier results by Onwujekwe *et al.* (2010) who found a non-significant relationship between age and WTP for health insurance.

Households had a minimum of one (1) and a maximum of 9 members with a mean of 5. Similarly, the minimum number of dependent children in a household was zero (0) and maximum was 9 with an average of about 3 children. However, the influence of the household size on WTP is weak ($p=0.058$), whereas the number of children ($p=0.544$) was not predicting respondents' WTP for the specified health insurance benefit package. This result also confirms findings from earlier research that household size does not necessarily predict WTP (see, for example, Gustafsson-Wright, Asfaw, & van der Gaag, 2009; Onwujekwe *et al*., 2010).

4. Conclusions and Policy Recommendations

This study examined the impact of social capital on willingness to pay for health services provided through community based health insurance schemes in Tanzania. We used probit regression analysis to determine the relationship between the predictors and our outcome variable. Our variables of interest were social capital variables. These include membership in community organizations, such as lending and savings groups (SACCOs) or any informal and tribal associations, the level of trust in each other in the communities, including the degree of trust in the management of the CHF scheme or the people that manage the fund. Another variable was the religion of the respondent. Results have

shown that with the exception of religion, all other social capital variables had positive and significant impacts on the willingness to pay for the community based health fund. We also studied non-social capital variables. Of these, the income of the household head, sex, economic activity and perception regarding CHF had significant impact on households' willing to pay for the health insurance. On the other hand, age, education level, household size and number of children and participation in health insurance were insignificant predictors of the willingness to pay.

Our study findings suggest that while there could be potentials for up scaling and expanding community health fund penetration and coverage in rural areas in the country, these partly depend on the social capital stocks owned by community members. From these findings, we gather that any attempts to enhance access to health care services in the rural areas would require building appropriate forms of social capital at individual and community levels. CHF could also increase enrolment and membership through the existing social organisations and associations. Similarly, CHFs may well increase their membership if the avenues for trust building or building a positive image of the schemes are created and nurtured. On the other hand, promotion of access to health care services provided through CHF would also require improvement in household incomes. This may possibly be achieved through the provision of support and other extension services needed to fuel, expand and grow household sources of incomes in the rural areas.

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