Factors Influencing Uptake of Health Insurance Schemes in Karatu District, Tanzania

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Abstract

Strengthening health systems require a focus on six essential pillars of any health infrastructure system. This study focused on health financing pillar with an aim of promoting risk pooling. Tanzania subscribes to the global efforts of eradicating poverty. By 2016, only 20% of the Tanzanian total population were enrolled in health insurance systems. Little is known concerning the low registration of Tanzanians to health insurance systems despite the growing number of health insurance schemes over the past years. The objective of this study was to investigate factors influencing uptake of health insurance among the residents of Karatu District in Arusha, Tanzania. A cross sectional descriptive survey research design was used in this study. The study population consisted of 45,065 households from which 381 households were drawn using stratified systematic sampling. Data was collected from the heads of households using a structured questionnaire. Uptake of health insurance in Karatu District was low, with only 109 (32.7%) being enrolled into health insurance. Results show that there was a significant association between status of marriage, gender, age, education level, size of house unit, source of income, monthly income, affordable premiums of Tsh10,000 and uptake of health insurance at a p value<0.05. Results obtained from binary logistics regression analysis indicated that knowledge of benefits (p <0.05, OR=1.5, 95% CI [.417-2.37) had a significant association with uptake of health insurance. The conclusion is that a plethora of elements that motivate the decision of house units to take up health insurance schemes include; house unit size, education level, status of marriage and age, source of income, monthly income, affordable premiums of Tsh10,000. The study recommends enhanced health insurance awareness initiatives, specifically insurance benefits, registration processes, communication mechanisms, and how to access health services from health facilities who have contract with the health insurance service provider.

Keywords: *Insurance uptake, health care financing, health insurance, insurance coverage*

1.0 Introduction

Transition of the global health goals from Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs) in 2016, was noted as an outstanding transition for limited resource countries that have struggled for a long time to improve the quality of healthcare (Tebbutt et al., 2016). To strengthen health systems, World Health Organization (WHO) has formalized the framework for systems of health, founded on six key pillars including healthcare financing. According to WHO, healthcare financing system entails raising adequate funds to invest in health system. Healthcare financing enables individuals to make use of the required health services, thereby safeguarding from poverty (WHO, 2007). Every individual needs to enjoy equal rights regarding treatment and access to necessary health care when they are in need. Indeed, since 1981, when healthcare insurance was endorsed on a global and national level in a number of countries, "health for all" has remained an unmet aim (Wang, 2011). Nevertheless, health care access is a major area of interest within most countries in developing countries.

One of the most pressing health policy issues confronting many countries today is the provision of inexpensive, accessible, and high-quality health care. It was estimated that 1.3 billion individuals in developing nations lack access to affordable and adequate health services (WHO, 2005). Social health insurance scheme was introduced as a useful approach to increasing the number of resources available for enhancing health, offering equitable access to healthcare for the needy and offering the best health services (Carrin et al., 2007). Health insurance is a strategy of funding medical care in the event of illness. It lowers the cost of healthcare through risk sharing and pooling finances to cater for unforeseen medical events. Its appeal stems from sharing risk among the healthy and the sick, as well as lower out-of-pocket costs (Xu et al., 2003).

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Most developing countries suffer severe crises in funding health services leading to lack of affordable services and poor quality of services, particularly for the poor, Africa has the world's highest disease burden (World Health Statistics, 2010). Annually, an estimated a hundred million individuals are pushed into destitution due to unsustainable health-care costs, (WHO, 2005). Health insurance may be a viable option for increasing health-care access. In Sub-Saharan Africa, where most countries devote limited resources to health care, risk sharing methods are especially significant. These actions have led to stock outs and households financing healthcare out-of-pocket. Millions of people are hindered from pursuing and acquiring required health services each year

because of out-of-pocket payments. Many people who do pursue and pay for treatment are faced with financial ruin and destitution (Evans et al., 2003; Hjortsberg, 2003; Xu et al., 2003).

Tanzania National Health Insurance Fund (NHIF) officially started operation in 2001. The fund is compulsory for workers in formal sector. Tiba Kwa Kadi (TIKA) membership covers individuals within a house unit, whereas Community Health Fund (CHF) membership is for the entire household. However, very few Tanzanians still enrolled in community, social or private health insurance. Penetration of health insurance in Tanzania has remained low at 0.54% by 2021. The rest of population, such as workers from informal sector or who are very poor and are dependent on the public sector, t have not enrolled in any health insurance scheme (Tanzania Health Financing Profile, 2016).

2.0 Materials and Methods

This study which conducted in Karatu District. The study adopted cross-sectional descriptive research design. Karatu District has 1 hospital, 10 health centers and 45 dispensaries. The choice of Karatu District was informed by the large proportion of population not enrolled into health insurance. It is estimated that only 15.8% of entire population is enrolled into health insurance. Furthermore, Karatu District is largely occupied by rural setting, yet health insurance in Tanzania has largely targeted those living in urban settings. Many health insurance companies have only established themselves in big urban settings where the population is perceived to be able to afford

their services. The study targeted 230,166 residents; 117,769 males and 112,397 females in 45,065 households (NBS, 2012) within 14 wards.

The sample size was calculated using the Krejcie and Morgan table. According to the table, for a study population of 45,065 households, an optimum sample size of 381 house units was appropriate. Data was collected using structured questionnaires that were pre-tested in the neighboring Meru District because it has similar in social, demographic and economic characteristics as Karatu District. Statistical program for social sciences, SPSS v23 was used to analyze the data and the results presented in tables. Research approval was obtained from Arusha Regional Commissioner and Karatu District Commissioner, and the consent of the respondents was sought before issuing the questionnaires.

3.0 Results and Discussion

A total of 381 questionnaires were administered to household heads in the fourteen Wards in Karatu District, out of which 333 were completed and returned. This represented a response rate of 333(87.4%). The registered response was good for enabling an analysis as pointed out by Mugenda and Mugenda (2009).Majority, 240 (72.1%) of the respondents were males and 156 (46.85%) were aged 30-39 years. The largest group of respondents fell within the 30 and 49 age category. This is the family bearing, and one that represents people who are in active employment; hence, have the financial capacity to enroll in a health insurance scheme.

Mhapa, Wanja and Mwangi

Table 1

Respondents Demographic Characteristics

Characteristics (n=333)	Frequency	Percent
Gender		
Male	240	72.1
Female	93	27.9
Age		
20-29 Years	3	0.9
30-39 Years	156	46.85
40-49 Years	118	35.44
50-59 Years	52	15.62
60 Years and Above	4	1.2
Marital Status		
Married	285	85.6
Single	27	8.1
Separated	14	4.2
Divorced	7	2.1
Level of Education		
No Formal Education	9	2.7
Primary	115	34.5
Secondary	105	31.5
College	65	19.5
University	39	11.7
Place of Residence in Karatu		
Baray	29	8.7
Mangóla	9	2.7
Mbulumbulu	33	9.9
Oldeani	12	3.6
Qurus	22	6.6
Rhotia	40	12.0
Buger	12	3.6
Daa	13	3.9
Endabash	17	5.1
Endamaghang	23	6.9
Endamarariek	30	9.0

Mhapa, Wanja and Mwangi

Characteristics (n=333)	Frequency	Percent
Ganako	25	7.5
Kansay	17	5.1
Karatu	51	15.3
Number of people in a household		
One	21	6.3
Two	11	3.3
Three	62	18.6
Four	76	22.8
Five	67	20.1
Six	54	16.2
Seven and above	44	13.2
Children (below 18 years) in a household		
One	154	46.2
Two	129	38.7
Three	25	7.5
Four	2	0.6
Five and above	1	0.3
Source of Income		
Salaried Employed	99	29.7
Small scale Business	69	20.7
Small scale Farming	164	49.2
No source	1	0.3
Households' Income Per Month		
Tsh Below shillings 100,000	31	9.3
Tsh 200,000 -500,000	250	75.1
Tsh 510,000 – 1,000,000	40	12.0
Tsh Above 1,000,000	12	3.6
Able to pay Tsh10,000 premium and above per Month	326	97.9
Yes	7	2.1
No		

Mhapa, Wanja and Mwangi

Majority 285 (85.6%) of the respondents were married. 115(34.5%) house heads had attained primary level education. These results imply low rate of illiteracy since majority of respondents have attained basic education, and hence would be expected to understand health insurance messages. Majority 51(15.3%) of the respondents were from Karatu Town. These results imply that the population density was higher in areas close to town. The first five wards in Karatu District were situated near or in town setting implying that they can access information regarding health insurance scheme because they are close to town.

Most of the respondents, 77 (22.8%) were from house units containing four members. The results revealed that house units were mainly constituted of more than seven family members, stressing the need to take health insurance so as to minimize out of pocket expenses. 154 (46.2%) of the respondents had one child. This outcome reveal that a big percentage of respondents had between 1 and 3 children below 18 years, a revelation that there is a high dependent ratio at family level;

hence, the need for health insurance. Almost half of the respondents 164 (49.2%) were farmers; 99 (29.7%) were employed, 69 (20.7%) were running small businesses; while 1 (0.3%) had no source of income. The results imply that most respondents drew their income from informal sources. This may have a negative effect on uptake of health insurance due to inconsistent income. Majority 250 (75.1%) had an income of between Tsh. 200,000 and 500,000 per month. This implies that majority of households can afford health insurance premiums. The results point to the need to expand insurance coverage to rural settings as people from those areas can afford health premiums of Tsh. 10,000 per month.

Social Demographic Characteristics and Uptake of Health Insurance

Influence of Gender on Uptake of Health Insurance

Cross-tabulation was performed between the respondent's gender and taking up of medical insurance. These outcomes are presented in Table 2.

Table 2
Influence of Gender on Uptake on Health Insurance

Gender	With Health Insurance		Without Health Insurance		Total	
	N	%	N	%	N	%
Male	81	74.3	159	71	240	72
Female	28	25.7	65	29	93	28
Total	109	100	224	100	333	100

Mhapa, Wanja and Mwangi

Table 4.3 shows that majority, 224 (67.3 %) of the respondents had no health insurance cover, while 109 (32.7%) had health insurance cover. These results depict low uptake of health insurance scheme. This calls for deliberate efforts to enhance uptake of health insurance scheme among the residents of Karatu District. Of those with insurance, more male heads of households 81 (74.3%) were enrolled to a health insurance scheme. The study's outcomes agree with Cerceau (2012) who found out that there was more male enrolment into health insurance, and that the low enrollment of women was attributed to their disadvantaged position in the household.

Respondents Age and Uptake of Health Insurance

A cross tabulation was carried out between the participants age and medical insurance uptake. The outcomes are presented in Table 3.

Table 3

Influence of Age on Uptake of Health Insurance

		With Health Insurance		Without Health Insurance		Total	
		N	%	N	%	N	%
Age in years	20-29	3	0.9	0	0.0	3	0.9
	30-39	70	21.0	86	25.8	156	46.8
	40-49	36	10.8	83	24.9	119	35.7
	50-59	0	0.0	52	15.7	52	15.7
	≥60	0	0.0	3	0.9	3	0.9
Total		109	32.7	224	67.3	333	100

Results show that majority 106 (31.8%) of the respondents with health insurance were between the ages of 30-49 years. This represents the group of household heads who are in their productive age and who have social responsibilities in their young families. A similar study by Harmon and Finn (2006) concluded that age can be an essential factor in determining the tendency to insure, since increasing in age is attributed to indirect susceptibility, increased health demand and the likelihood of higher wealth stock. Low uptake was likely as individuals became older.

Marital Status and Uptake of Health Insurance

A cross tabulation was carried out between marital status of the respondents and taking up medical health schemes. These results are presented in Table 4.

Mhapa, Wanja and Mwangi

Table 4

Influence of Marital Status on Uptake of Health Insurance

		With health Insurance		Without health Insurance		Total	
		N	%	N	%	N	%
Marital	Married	90	82.6	195	87.1	285	85.6
Status	Single	15	13.8	12	5.4	27	8.1
	Separated	4	3.7	10	4.5	14	4.2
	Divorced	0	0.0	7	3.1	7	2.1
Total		109	100	224	100	333	100

The result shows that 109 had health insurance cover, and majority of them 90 (82.6%) were married, followed by 15 (13.8%) who were single. This tendency may be explicated by the knowledge that married couples are highly likely to have dependents whose healthcare requirements must be met by health insurance. It was revealed by Bourne and Kerr-Campbell (2010) that enlistment into medical insurance was affected by the status of marriage of the participants hence a high likelihood of acquiring health insurance.

Household Size and Uptake of Health Insurance

To assess the influence of household size on health insurance uptake, house unit size was cross-tabulated against health insurance uptake. The results were presented in Table 5.

Table 5

Influence of Household Size on Uptake of Health Insurance

Household size	With health insurance		Without health insurance		Total	
	N	%	N	%	N	%
One	14	12.8	7	3.1	21	6.31
Two	4	3.7	7	3.1	11	3.30
Three	31	28.4	31	13.8	62	18.62
Four	29	26.6	47	21.0	76	22.82
Five	24	22.0	43	19.2	67	20.12
Six	5	4.6	49	21.9	54	16.22
≥ Seven	2	1.8	40	17.8	42	12.61
Total	109	100	224	100	333	100

Mhapa, Wanja and Mwangi

Results revealed that majority of individuals who have enrolled for health insurance at 31 (28.4%) had a household size of three, followed by 29 (26.6%) with a household size of four, and 24 (22%) with a household size of five people. The households with members above six had few people enrolled for health insurance. These results imply that the households with fewer individuals may not realize why they need an insurance cover, while house units with several members lacked adequate income to cater for daily subsistence, hence lacked resources to take

up medical cover. This study is in agreement with Fang et al. (2012) which revealed that smaller house units with few members and more income had a higher likelihood of acquiring a health cover within private and public insurance schemes.

Number of children and Uptake of Health Insurance

Cross tabulation of the number of children and taking up of medical scheme was done. The outcome are presented in Table 6.

Table 6

Influence of Number of Children on Uptake of Health Insurance Scheme

Children below 18 years in household	With health insurance		Without health insurance		Total	
	N	%	N	%	N	%
One	41	43.2	113	52.3	154	49.52
Two	46	48.4	83	38.4	129	41.48
Three	7	7.4	18	8.3	25	8.04
Four	0	0.0	2	0.9	2	0.64
$\geq$ Six	1	1.1	0	0.0	1	0.32
Total	95	100	216	100	311	100

Table 6 shows that out of 109 respondents', majority 46 (48.4%) had two children, 41 (43.2%) had one child, 7 (7.4%) had three children and only 1 (1.1%) had above six children. These results imply that people with one or two children were more likely to enroll to health insurance than those with more children. This is because more children in the family raises competition for resources available for the family's subsistence, hence the inability to afford the insurance premiums. Savage et al. (2008) found that

women who planned to deliver within the coming years had a high chance of acquiring medical insurance compared to females who had no plan of adding the number of their children.

Source of Income and Uptake Health Insurance

The results in Table 7 shows that out of the 109 who had enrolled for health insurance, majority 92 (84.4%) were salaried employees, 11 (10.1%) were small scale

65

businesses and only 6 (5.5%) were small scale farmers. This implies that having a

consistent source of income increased the likelihood of taking up health insurance.

Table 7
Influence of Source of Income on Uptake of Health Insurance

Main source of income	With health insurance		Without health insurance		Total	
	N	%	N	%	N	%
Salary Employed	92	84.4	7	3.1	99	29.73
Small scale Business	11	10.1	58	25.9	69	20.72
small scale Farming	6	5.5	158	70.5	164	49.25
No source	0	0.0	1	0.4	1	0.30
Total	109	100	224	100	333	100

These outcomes had agreed with many studies which revealed that the index of wealth, level of employment and income were essential influences in the acquisition of health insurance. Kiplagat et al. (2011) and Kimani et al. (2010) revealed that insurance scheme uptake and a high index of wealth have a direct positive relationship.

Average Monthly Income and Uptake of Health Insurance

In order to assess the influence of household monthly income and uptake of health insurance in Karatu District, cross-tabulation was carried between the respondent's average monthly income and uptake of Health Insurance scheme. These outcomes were revealed within Table 8.

Table 8
Influence of Average Monthly Income on Uptake of Health Insurance

Household's income per month	With health insurance		Without health insurance		Total	
	N	%	N	%	N	%
≤ Tsh 100,000	2	1.8	29	12.9	31	9.31
Tsh 200,000 -500,000	76	69.7	174	77.7	250	75.08
Tsh 510,000 – 1,000,000	27	24.8	13	5.8	40	12.01
≥ Tsh 1,000,000	4	3.7	8	3.6	12	3.60
Total	109	100	224	100	333	100.00

Mhapa, Wanja and Mwangi

Table 8 shows that of the 109 who had the health insurance cover, majority, 76 (69.7%) had an average monthly income of between Tsh 200,000-500000. The findings of this study are in agreement with Pinilla and Lopez (2020) who found an existing positive association between medical health uptake and income.

Education Level and Uptake of Health Insurance

The level of education was cross tabulated against health insurance uptake. The outcomes were presented in Table 9. Results reveled that out of 109 participants who had health insurance cover, majority, 49 (45.0%) had college education qualification, followed by 36 (33.0%) who had university qualification, 20 (18.3%) who had secondary education, 1 (0.9%) with primary education, and only 3 (2.8%) who had no formal education

Table 9

Influence of Education level on Uptake of Health Insurance

Highest level of education	With health insurance scheme		Without health insurance scheme		Total	
	N	%	N	%	N	%
No Formal Education	3	2.8	6	2.7	9	3
Primary	1	0.9	114	50.9	115	35
Secondary	20	18.3	85	37.9	105	32
College	49	45	16	7.1	65	20
University	36	33	3	1.3	39	12
Total	109	100.0%	224	100	333	100

These data reveal that there are gaps in access to higher education in the region since only 104 (31.2%) of the respondents had attained college and university level education. Low attainment of education was negatively implicating the ability to access quality jobs and future high incomes; thus enabling them individuals to remit insurance premiums. It can therefore be concluded that education had a significant effect on health insurance uptake. Panda et al. (2015) demonstrates that level of education determines people's health investment since education gives knowledge on general ideas on how people should invest on health via protection and prevention tools.

Chi Square Measure of Association

Cross tabulations were done to establish whether there was an association linking either of the social demographic characteristics and the dependent variable. The Chi-Square statistic was used to evaluate tests of independence of the categorical variables. The results are presented in Table 10. Results show that there existed a considerable relationship linking status of

67

Mhapa, Wanja and Mwangi

marriage and age, house unit size, education level, source of income, monthly income, affordable premiums of Tsh10, 000 to uptake

of health insurance. At p0.05, the results were significant.

Table 10
Chi-Square Measure of Association of Social Demographic Characteristics and Uptake of Health Insurance

Variable	Sample Size (N)	χ^2	Df	*p*-value
Gender	333	0.404	1	0.328
Age	333	68.201	31	0.001
Marital Status	333	10.530	4	0.032
Level of Education	333	178.527	4	0.001
Place of Residence in Karatu	333	2.782	13	0.999
Household with children below 18years	311	5.936	4	0.204
Number of people in a household	333	49.321	7	0.001
Source of income	333	235.210	3	0.001
Monthly income	333	32.303	3	0.001
Affordable premiums of Tsh10,000	333	6.544	2	0.038

The findings are consistent with those of previous investigations which established a positive influence of age (Harmon & Finn, 2006), status of marriage (Kirigia, et al., 2005), size of house unit (Fang et al., 2012), women with a plan of adding children (Savage et al., 2008), income (Pinilla & Lopez, 2020), employment (Gius, 2010), rising income (Kirigia et al., 2005) to uptake of health insurance.

4.0 Conclusion

Nine socio-economic areas were considered as prerequisites for strategic uptake of health

insurance scheme. These were status of marriage, gender, age and residential area, household size, source of income, income per month, affordability of coverage, and level of education. This study discovered a plethora of elements that motivate house units' decision on uptake of health insurance scheme; namely, house unit size, education level, status of marriage and age, source of income, monthly income, affordable premiums of Tsh10,000.

Being an adult person, married and educated with small family size influence the uptake of health insurance scheme. Moreover, having

Mhapa, Wanja and Mwangi

more than five members, living in rented houses, lack of severe ailments in the households, believing in a good status of health, access to a private medical care institution as a first priority, not using the benefits of the services, limited availability of medicine, and provider's unfriendly behavior are considerable elements related to uptake of health insurance scheme. We argue that health insurance scheme providers, medical centers, and other players such as local governments focus more on the importance of health insurance scheme uptake in their communities. Likewise, all future policy decisions about benefit package design and premiums payable must consider potential contributors' ability to pay the established

rates. Extensive actuarial studies should therefore be carried out before any review of benefits and annual premiums.

5.0 Recommendations

Based on the findings, the study recommends that health insurance companies should consider allowing members to submit their premiums in smaller deposits to accommodate those with a low income in embracing insurance. Individuals and households should be encouraged to join some form of health insurance, considering that each is packaged to suit particular households depending on their socio-economic situations.

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