The Influence of Socio-Economic Factors on the Membership Status of Health Insurance Schemes: A Case of the Informal Sector in Tanzania

Nasra Khamisi Mapoy[1], Zainabu Hassan Bonza[2], Nyambilila Mbonile Minga[2], Donata Ponsian Kemirembe[2] and Lilian Kabago[3]
[1]Assistant Lecturer, Department of Graduate Studies, Eastern Africa Statistical Training Centre (EASTC) P.O. Box 35103, Dar es Salaam, Tanzania.
[2]Assistant Lecturer, Official Statistics Department, Eastern Africa Statistical Training Centre (EASTC), P.O. Box 35103, Dar es Salaam, Tanzania.
[3]Official Statistics Department, Eastern Africa Statistical Training Centre (EASTC), P.O. Box 35103, Dar es Salaam, Tanzania.
Corresponding author: nasra.mapoy@eastc.ac.tz

Abstract
One of the key factors in the development struggle is the way people in a particular socio-economic setting access their medical care and how affordable this health care is. A healthy population is more likely to translate into an economically sound nation. However, there has been an issue with the membership status of various health insurance schemes across the country. While the importance of having health, coverage is undeniable to almost all households and the way it reduces the hospital costs significantly, it has noted that there is not a matched enthusiasm when it comes to enrolling in the various health insurance schemes. This study was therefore aimed at assessing the influence of socio-economic factors on the membership status of health insurance schemes, particularly in the informal sector in Tanzania. Data for this study had been obtained from a stratified three-stage sample of 15,720 households of the Tanzania Integrated Labor Force Survey 2020/2021. Specifically, the study targeted about 4,483 households which had household heads engaged in the informal sector to determine the influence of sex, age, education, marital status, place of residence and income category on joining health insurance schemes. The results revealed that education level, income category, marital status, age group and gender had a significant effect on the membership status of health insurance schemes. From this study, it is recommended that a balance is restored by encouraging more people to become members. A referral technique could prove useful, whereby members reach out to close family and friends as ambassadors of existing insurance schemes. More effort could also be directed towards the populace from the informal sector, through campaigns that pan out to all educational levels in the community. This can be best achieved through the local government authorities since they are closer to the communities. Needless to say, sensitization campaigns can be done through all major media; that is, radio, TV and major newspapers.

Keywords: *Health insurance scheme, informal sector, employees, health sector*

1.0 BACKGROUND TO THE STUDY

Globally, the social health schemes aim at ensuring quality health services and helping individuals meet health needs with ease, regardless of their financial status (Osei Afriyie et al., 2022). This is in line with the 2030 Agenda for Sustainable Development Goal (SDG) target 3.8 that aims at achieving universal health coverage and is implied in SDG 8 since a healthy workforce is a prerequisite for productive employment (UN, 2015). Being a member of the social health schemes improves quality of health services received (Shahid et al., 2022). The schemes are recognized as a form of financing that pools risks together to deal with health and financial burdens(WHO, 2003). Social health schemes are a means for reaching the Universal Health Coverage (UHC) objective and better provision of health care services with a reduced financial burden (ILO, 2020).However, its implementation in developing and middle-income countries remains a challenge (Jamal et al., 2022). The voluntarily requirement of the informal sector to enroll in Social Health Schemes has been identified a key challenge in developing countries(Dartanto et al., 2020).

The number of individuals registered with social health insurance in low- and middle-income countries is low (7.9%) and in Africa the coverage is 12% with most of health needs being met by paying from individual pockets (Hooley et al., 2022). Despite the low enrolment, the informal sector contribution to employment is approximately 85% and 83% for Sub-Saharan Africa and Africa respectively (ILO, 2022). Major reasons for low enrollment in low- and middle-income countries were revealed by various studies. Factors Influencing Informal Sector Personnel to Join Health Insurance Schemes in Mbarali District in Tanzania identified low incomes and high rates charges by the insurance companies (Chengula & Rose, 2019). Factors influencing implementation of the Community Health Fund in Tanzania showed inability to pay membership contributions and poor quality of care (Kamuzora & Gilson, 2007). However, a systematic review of factors that affect uptake of community-based health insurance in low-income and middle-income countries concentrating on rural population and informal sectors revealed mixed results whereby, in some countries low income levels and lack of financial resources was the reason and in other countries it was the contrary (Adebayo et al., 2015).On the other hand, personal willingness was revealed as a major reason(Dartanto et al., 2020).

Tanzania like other low- and middle-income countries is dominated by the informal sector, especially in urban areas where its contribution accounts for 52% in the total employment (NBS, 2022). The contribution of the informal sector to Gross Domestic Product (GDP) is 39%(DTDA, 2018). In complying with UHC,

various initiatives have been taken to increase the enrolment rate in social health services. The Community Based Health Insurance (CBHI) for the rural community and Tiba Kwa Kadi (TIKA) for the urban population were put in place (Kigume & Maluka, 2021).In addition to these initiatives, the National Health Insurance Fund (NHIF) was introduced to increase the enrollment and reduce financial hardships. However, it works on a mandatory basis for public servants and voluntary for the informal sector (Magaria et al., 2023).Despite these initiatives, the enrollment rate in health insurance is still low (32%) (USA, 2022).

The country is dominated by the informal sector and the basis of the informal sector enrollment in the social scheme is on voluntary basis (Magaria et al., 2023). Studies have shown that the reasons for low enrollment in SHI in low- and middle-income countries varies from country to country and within a country (Adebayo et al., 2015; Chengula & Rose, 2019; Dartanto et al., 2020; Kamuzora & Gilson, 2007). Additionally, studies conducted in Tanzania according to the authors' knowledge are area-specific and those that covered the whole country were done more than 10 years ago(Chengula & Rose, 2019; Kamuzora & Gilson, 2007). This study considers the dominance of informal sector employment in the country, time lapse and area specificity of previous studies that showed mixed and contradicting findings.

Several studies have been conducted on factors influencing employees in the informal sector to join health insurance schemes in Tanzania, but focus was region and district specific rather than the whole informal sector in Tanzania. Minuka et al. (2023) conducted a study on Barriers of accessibility to Health Insurance among Informal Sector Workers in Dar es Salaam Tanzania; Mnally(2013) conducted a study on Determinants of Health Insurance Participation among Informal Sector Workers in Rural Tanzania; Abraham et al., (2021) conducted a study on Barriers and Facilitators to Health Insurance Enrolment among People Working in the Informal Sector in Morogoro, Tanzania; Chengula (2019) conducted a study on Factors Influencing Informal Sector Personnel to Join Health Insurance Schemes in Tanzania, a Case of Mbarali District. The present study assesses the influence of socio-economic factors on the membership status of health insurance schemes, particularly in the informal sector in Tanzania.

The study contributes to the understanding of the influence of socio-economic factors on the membership status of health insurance schemes in Tanzania. The results from this study will also inform the health sector and other health related

stakeholders on the appropriate actions to be taken in regard to joining of Health Insurance Schemes by the informal sector in Tanzania.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 The Consumer Theory

The theory is about how a rational consumer can make consumption decisions given budget constraints. It was developed by H. A. John Green in 1976. The theory states that; "A rational consumer decides to spend his resources to buy goods and services with the objective of maximizing his utility."A consumer is more likely to get the most out of a product or service if they know where it is. Consumers can be influenced in a positive or negative way by changes in the price of a product or service. For example, if premiums are lower, consumers are more likely to purchase insurance, whereas if premiums are higher, consumers are less likely to purchase insurance (Baker, 1995). In a similar vein, customers may opt to enroll in insurance plans in order to avoid paying a significant amount if they become ill, and the user fee is anticipated to increase.

The theory attempts to predict people's spending given their budget constraints and individual preferences. It has a challenge of developing a practical formula because the situations are numerous with different settings.

Mathematically

Let $U(X)$ be the individuals' utility function of non - negative commodity Vector $X = (x_1, x_2)$, subject to budget constraints$P_1x_1 + P_2x_2 \leq I$, where I is Income and $P = (P_1, P_2)$ is a vector of commodity prices.

Also, we can define $U = V(I, P)$ be the utility attained by solving the problem. Let $x = D(I, P) = [D^1(I, P), D^2(I, P)]$ be the commodity vector that achieves maximum utility subject to budget constraints. The function $D(I, P)$ is called consumer's market demand function. Since the function maximizes utility subject to budget constraints $V(I, P) = U[D(I, P)] = U\{[D^1(I, P), D^2(I, P)\}$, this theory is of relevance to this study because the voluntary joining of people in the informal sector is based on the rational decisions. Additionally, the theory is important because it directs government policies and plans, also business entities on how to allocate resources basing on peoples' preferences. However, the theory makes an assumption that people will always make rational choices which is not always the case.

2.1.2 Empirical Literature Review

Namuhisa (2014) conducted a study on determinants of uptake of National Hospital Insurance Fund scheme by the informal sector in Kenya. The target population was the informal sector participants at Laini Saba Market, Kibera Division, Nairobi County with a population of approximately 350 traders. Descriptive study design was adopted while stratified random sampling method was applied to select the respondents according to the different enterprises they operated in and the sample size was 97 respondents. At univariate level, descriptive analysis using frequencies and percentages was carried out while at bivariate level, multinomial logistic regression was carried out to determine the association between the dependent and independent variables at 0.05 level of significance. The findings indicated that 32% of respondents were enrolled in NHIF scheme, while 7.1% were enrolled in another type of health scheme. The logistic regression model found that NHIF uptake was significantly associated with income level (P=0.049 95% CI -1.172- -0.003), awareness of NHIF benefits (P=0.013 95% CI -6.366 - -0.744) and access to NHIF outlets (P=0.011 95% CI -6.470- -0.852), since their p-values were < 0.05 indicating that all the variables were statistically significant.

Another study was conducted by Muketha (2016)on Determinants of the Uptake of National Health Insurance among Informal Sector Workers in Kenya. The study used secondary data collected from the Kenya Household Health Expenditure and Utilization Survey collected by the Kenya National Bureau of Statistics in 2013. Descriptive statistics and the probit model were used in explaining the variables and in the estimation process respectively. The findings indicated that only14% of the informal sector workers had NHIF. Therefore, most of the informal sector workers did not have NHIF cover. All the independent variables namely age, level of education, marital status, gender, household size, place of residence, behavioral factors, wealth index and belonging to an alternative community-based health insurance scheme were found to be significant. A big household size, belonging to an alternative community-based health insurance scheme, being male and smoking negatively affected the uptake of NHIF among informal sector workers. However, a higher wealth index, being married, being educated, an increase in age and awareness positively affected the uptake of NHIF among informal sector workers.

Macha et al., (2014) conducted a survey on determinants of Community Health Fund (CHF) membership in Tanzania in 2008. The study was done in four districts that is, Singida, Mbulu, Kigoma rural and Kilosa and it covered 524 members of CHF and 701 non-insured households and 7,959 individuals.

Logistic regression and thematic analysis were used to assess the determinants of CHF membership and qualitative data analysis respectively. Results revealed that the poorest and richest households were less likely to join CHF as compared to middle income earners. The study recommends awareness raising, and making the health insurance appealing to all groups of people.

Isaya (2018) conducted a study to determine which factors influence workers in Tanzania's informal sector to enroll in health insurance schemes. The study employed descriptive cross-sectional design and gathered data from six Ilala Municipal Council wards using a multistage cluster sampling strategy. The sample size was 322 and all respondents from this study were male with average age of 29.8 years, a greater part (62.4%) had essential instruction and 48.2% were single. The majority of respondents (31.4%) were aware of NHIF, with radio serving as the primary source of information. While only 12.2% of respondents were enrolled in one of the health insurances plans, approximately 40% were aware of the advantages of health insurance and concepts associated with it. The most prominent factors that prevent people from enrolling in health insurance programs are a lack of awareness of the plans and how they work, the poor quality of service in public facilities, and the inability to pay the premiums. People will be more likely to enroll in health insurance plans if they are made aware of them, the premiums are lower, and the quality of health services has improved. The study recommends consideration of awareness for both the availability of health insurance schemes and their operations, and the quality of health services.

Chengula (2019) examined factors influencing informal sector personnel to join health insurance schemes in Mbarali District in Tanzania. A cross-sectional design was employed for the research. A sample of 144 informal sector personnel was included in the study. The study employed both purposive and probability sampling techniques to obtain study participants. The study findings indicated that the factors that most influence informal sector personnel to join Health Insurance Scheme (HIS) and demand for health insurance services were the type of insurance services offered, family size and nature of chronic illness. The study recommended awareness campaigns as a strategy to increase knowledge among workers in the informal sector about the value of joining the health insurance schemes, and for health insurance institutions, they should set premium charges that are affordable and reflective of the economies and markets of the informal sector personnel.

Magaria etal., (2023) conducted a study on Household’s Ability to Afford Health Insurance Packages in Tanzania. The study employed data from 2017/18

Household Budget Survey. Descriptive analysis techniques were employed for data analysis. The results revealed that households with low and moderate income were required to spend more than 10% of the recommended SDG 3.8.2. threshold in attaining the health services. The study recommended provision of subsidies by the Government to the health insurance providers in order to accommodate the poor households who cannot afford the services.

This study differs from other studies in the sense that it covers the whole country of Tanzania, using the current data of 2020/2021 Integrated Labour Force Survey. Therefore, the study provides the national overview of the factors that should be considered in developing policies and plans as a way of influencing membership in the health insurance schemes.

3.0 METHODOLOGY AND MODELLING

3.1 Data and Variables

The analysis of this study was conducted through the use of secondary data from the NBS survey (NBS,2022). NBS is the national statistical agency with the mandate of producing and coordinating statistical activities in the country. The survey employed a stratified three-stage sampling design. The first stage involved selection of 655 EAs within each stratum which were grouped by geographical locations with Probability Proportion to Size (PPS). The second stage involved selection of 24 households within each selected EAs, resulting to a sample size of 15,720 households. And the third stage involved selection of respondents for the Time Use Module. The survey questions with regard to the study were responded by people aged 15 years and above through CAPI (NBS,2022). The overall response rate of the survey was 99.84.

Specifically, the study involved 4,483 households which had household heads engaged in the informal sector. The study had one dependent variable (membership status on health insurance) and five independent variables (age group, income category, marital status, education level, sex). The data were cleaned and analyzed by using STATA16. The data process involved removing households which were not part of the study and imputation of some missing variables. Data were analyzed by using both descriptive and inferential analysis. Cohen's kappa and Chi – Square test was performed for data reliability and validity.

Table 1: Study Variables and their levels of Measurement

Type of variables	Name of variables	Scale of Measurement
Dependent variable	Membership status on HIS	Binary 1.Yes 2.No
Independent variable	Sex	Binary 1.Male 2.Female
Independent variable	Income category	Interval 1=less than 270000 (lower income) 2=270000 up to760000 (Medium income) 3=760000 and above (higher income)
Independent variable	Age group	Ordinal 1= 15 - 35 2= 36 - 64 3= 65+
Independent variable	Marital status	Nominal 1=Single 2=Married 3=Cohabit 4=Widowed 5=Divorced 6= Separated
Independent variable	Education level	Ordinal 1=Never Attended 2=Primary Education 3=Secondary Education 4= Vocational Training 5=Tertiary non-University

3.2 Model Specification

Binary logistic model was performed to examine the effect of independent variables on dependent variable. The response variable Y is Membership status on HIS. Membership status on HIS was grouped into two categories coded as 0 for 'no' and 1 for 'yes'.

The Binary Logistic Model is given as

Log it $(\pi) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$

Where;
Log it (π) =$\log(\frac{\pi}{1-\pi})$
π is the probability of informal sector employees to join health insurance scheme β_0, β_1, β_2, β_3, β_4, β_5 are the regression coefficients and X_1, X_2, X_3, X_4, X_5, are predictor variables which are age group, gender, marital status, education level, income category. The odds of an event are the ratio of the probability of an event occurring to the probability of the event not occurring. The Odds Ratio is mathematically expressed $\frac{\pi_1/1-\pi_1}{\pi_0/1-\pi_0}$ where $\pi_0/1-\pi_0$ is the odds of the event when predictor variable is at the reference level and $\pi_1/1-\pi_1$ the odds at the level of interest.

Chi – Square test of dependency was performed before running the model to check if there is any significant relationship between dependent variable (membership status) and the independent variables. Only independent variables which showed significant relationship with dependent variable were included in the model.

3.3 Diagnostic for the Logistic Regression

The Hosmer-Lemeshow goodness-of-fit test was used to assess the accuracy of the binary logistic regression model at 5% level of significance. The hypotheses for the test are:

$$H_0: \text{Themodelisagoodfit}$$
$$H_1: \text{Themodelisnotagoodfit}$$

4.0 RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Descriptive analysis techniques were used to describe the socio-economic, and demographic characteristics of the household heads in the informal sector who responded to the ILFS of 2020/21, and to determine the distribution of membership status of household heads who were engaged in the informal sector. The descriptive statistics used were frequency, total and percentage.

4.1.1 Socio-economic characteristics of the respondents

Table 4.1 presents distribution of respondents according to sex, age group, marital status, educational level, area of residence and income category. Results show that majority of the employees (55.25%) were female. About half (50.97%) of the respondents were aged below 36 years and only 2.45% were elderly (65 years and above). Moreover, results show that about ((65%) of the respondents were either married or cohabiting (married 56.64%, or cohabiting 8.59%) and the

remaining part (34.79) were not in any union (single 20.19%, widowed 5.69%, divorced 6.63% or separated 2.28%). With regard to educational level, results show that the informal sector is dominated by people with primary level education which accounts for about 71%. In addition, results show that the informal sector prevails more in urban areas (77.09%). Lower income earners (74.86%) are the majority in the sector while high income earners (5.64%) are the minority in the sector.

Table 4.1: Percentage Distribution of Socio-economic characteristics of the Respondents

	N (4483)	Percent
Sex		
Male	2006	44.75
Female	2477	55.25
Age Group Level		
15-35	2285	50.97
36-64	2088	46.58
65+	110	2.45
Marital status		
Single	905	20.19
Married	2539	56.64
Cohabiting	385	8.59
Widowed	255	5.69
Divorced	297	6.63
Separated	102	2.28
Education Level		
Never Attended	9	0.2
Primary Education	3201	71.4
Secondary Education	1094	24.4
Vocational Training	74	1.65
Tertiary non-University	59	1.32
University	46	1.03
Area		
Rural	1027	22.91
Urban	3456	77.09
Income Category		
Lower Income	3356	74.86
Medium Income	874	19.5
Higher Income	253	5.64

4.1.2 Membership status on Health Insurance Scheme

Table 4.2 presents distribution of informal sector employees according to membership status in HIS. Results show that 4,189 (93.44%) of informal sector employees were not members of any health insurance scheme while only 294 (6.56%) of informal sector employees were members of a health insurance scheme. This implies that majority of employees in the informal sector were not in the health insurance schemes.

Table 4.2: Summary on membership status on Health Insurance Scheme

Membership status on HIS	Frequency	Percent
No	4189	93.44
Yes	294	6.56
Total	**4483**	**100**

4.2 Association between membership status on health insurance and independent study variables

The Chi-square test was carried out to test the association between the dependent variable membership status (with two categories, Yes and No) and the independent variables (sex, age group, marital status, education level, area of residence and income category) at 5 % level of significance. The observed association with p – value of the Pearson chi-square test statistics less than 0.05 was statistically significant at 5% level of significance.

The results in Table 4.3 show that the variables sex, age group, marital status, education level and income category of employees have a statistically significant association with membership status of health insurance schemes at 5% level of significance. However, results show that the place of residence (rural or urban) of employees has no statistically significant association with membership status of health insurance schemes at 5% level of significance.

Table 4.3: Cross tabulation showing association between membership status and independent variables

Variable	Membership Status		Chi2	P - Value
	No (4189)	Yes (294)		
Sex				
Male	1920	86	30.55	0.000
Female	2269	208		
Age Group Level				
15-35	2175	110		
36-64	1923	165	30.11	0.000
65+	91	19		
Marital status				
Single	864	41		
Married	2345	194		
Cohabiting	373	12	28.89	0.000
Widowed	227	28		
Divorced	284	13		
Separated	96	6		
Education Level				
Never Attended	9	0		
Primary Education	3027	174		
Secondary Education	1009	85		
Vocational Training	64	10	82.75	0.000
Tertiary non-University	50	9		
University	30	16		
Area				
Rural	962	65	0.11	0.736
Urban	3227	229		
Income category				
Lower Income	3141	215		
Medium Income	822	52	7.64	0.022
Higher Income	226	27		

4.3 Logistic Regression Analysis

This section presents the use of logistic regression model to determine the effect of sex, age group, education level, marital status and income category on membership status on health insurance. Variables included in the model are those that showed association with membership status on health insurance. Binary logistic was applied since the dependent variable, membership status on health insurance was measured as binary factor (contains two levels).

Table 4.4presents results of the binary logistic regression model analysis. The overall model was statistically significant (Chi-square value = 176.872, and p-value is 0.0000). Sex, age group and education level have significant influence for an employee in the informal sector to join health insurance scheme while place of residence had no significant effect at 5% level of significance. The significance for marital status and income category was found in some categories. Results show that, the odds ratio of female employees is 2.491. This indicates that, when other factors are kept constant, female employees in the informal sector were 2.491 times more likely to join health insurance schemes compared to men. The odds ratio of employees aged 35 – 64 years is 2.093. This means that when other things remain the same, employees in age group 35 – 64 years were 2.093 times more likely to join health insurance schemes compared to those aged below 35 years. Moreover, results show that employees aged 65 years and above are 6.967 times more likely to join health insurance schemes than those aged below 35years.

Results show that employees with some education background are more likely to join health insurance schemes compared to those with no education, when other things remain constant. The likelihood increases as the education level of a person increases (primary education 0.065, secondary education 0.143, vocational training0.236 and tertiary non-university 0.341). The odds ratio of married employees is 1.798, indicating that the employees who are in marriage are 1.798 times more likely to join health insurance schemes than those who are single when other things remain constant. With respect to income category, the odds ratio of higher income category is 1.646, indicating that employees who are in higher income category are 1.646 times more likely to join health insurance schemes than those in low-income category when other things remain constant.

Table 4.4: Binary logistic regression showing the effects of socio-economic and demographic factors on membership status on health insurance

Variable	Odds Ratio	SE	t-value	p-value	OR 95% CI Lower	Upper
Sex: base Male	1	.	.	.	.	.
Female	2.491	0.361	6.3	0.000	1.875	3.308
Age Group Level: 15- 35	1	.	.	.	.	.
36-64	2.093	0.309	5	0.000	1.567	2.795
65+	6.967	2.104	6.43	0.000	3.855	12.593
Education Level: base No Education	1	.	.	.	.	.
Primary Education	0.065	0.023	-7.83	0.000	0.033	0.129
Secondary Education	0.143	0.05	-5.56	0.000	0.072	0.284
Vocational Training	0.236	0.114	-2.98	0.003	0.091	0.609
Tertiary non-University	0.341	0.169	-2.17	0.030	0.129	0.902
Marital status: base Single	1	.	.	.	.	.
Married	1.798	0.349	3.02	0.003	1.229	2.629
Cohabit	0.839	0.288	-0.51	0.609	0.428	1.644
Widowed	1.688	0.488	1.81	0.070	0.958	2.976
Divorced	0.799	0.275	-0.65	0.514	0.407	1.568
Separated	1.194	0.553	0.38	0.702	0.481	2.96
Income category: base low income	1	.	.	.	.	.
Medium Income	0.978	0.165	-0.13	0.894	0.702	1.361
Higher Income	1.646	0.379	2.16	0.031	1.047	2.586
Constant	0.206	0.079	-4.12	0	0.097	0.436
Mean dependent var	0.066	SD dependent var			0.248	
Pseudo r-squared	0.082	Number of obs			4474	
Chi-square	176.872	Prob> chi2			0.000	
Akaike crit. (AIC)	2024.176	Bayesian crit. (BIC)			2126.673	

4.4 Goodness of Fit Test

Hosmer-Lemeshow goodness-of-fit test was used to test if the model has effectively described the outcome variable. The value of the Hosmer-Lemeshow goodness-of-fit statistic computed from the frequencies is 22.70 and the corresponding p-value computed from the Chi-square distribution with 16 degrees of freedom is 0.1220. Since the p - value (=0.1220) is greater than 0.005, the null hypothesis “the model is a good fit” is not rejected. This indicates that

the model effectively describes the outcome variable. Therefore, the model is a good fit of the data.

Table 4.5: Statistics of Goodness of Fit

Statistic	Value
Number of observations	10162
Number of groups	18
Hosmer-Lemeshow chi2(16)	22.70
Prob> chi2	0.1220

4.5 Discussion of Results

The findings of the study show that the female employees were more likely to join health insurance schemes than male employees. This could be due to the fact that since childhood, a girl child is nurtured to be a family care-taker, and therefore it is easy for them to join insurance schemes compared to men, who are more focused on earning income rather than taking care of their health. Similar results were reported by Muketha (2016) that being male decreases the probability of joining health insurance scheme by 1 percent. Results are contrary to Adebayo etal., (2015) who found that male headed households are more likely to join health insurance schemes as compared to female headed households. The contradicting findings suggest that both sexes are equally important in influencing membership in health insurance schemes.

In this study, age of employees revealed significant influence on joining health insurance schemes. According to the findings of the study, the employees who are aged 65 years and above were more likely to join health insurance scheme than those aged below 35 years. This could be due to the fact that aged people are more affected by chronic diseases which need frequent medical consultation. Results are consistent with Kagaigai et al.(2021) who found that respondents in the age category of 18 to 49 are less likely to join health insurance schemes as compared to those aged 60 years and above. This suggests that the mindset of the youth pertaining to the vital role of membership to health insurance schemes should be changed. This is because the youth constitute the largest proportion of the current population in Tanzania and the prevalence of diseases has now changed unlike in the past where frequency of illness was commonly observed among the elderly. Hence the youth being members of a health insurance scheme is indispensable.

Another finding is that the likelihood of an employee in the informal sector joining the health insurance scheme increased with the education level. This

could be due to the fact that education enhances understanding the important role of being a member of the health insurance schemes. The results are similar to those of Muketha (2016) whose study of Determinants of the Uptake of National Health Insurance among Informal Sector Workers in Kenya revealed being educated positively affected the uptake of NHIF among informal sector workers. A systematic review of literature by Adebayo et al. (2015) found that all studies conducted reported that becoming a member of a health insurance scheme was associated with higher education. Contrary to Kagaigai et al. (2021) in the study of "Do household perceptions influence enrolment decisions into community-based health insurance schemes in Tanzania?" where the findings revealed that education level had insignificant influence on enrolment decision into community-based health insurance schemes in Tanzania. This suggests that having high level of education enhances comprehension of the benefits of being a member to the health insurance scheme.

With regard to marital status, findings revealed that employees who are in marriage are more likely to join health insurance schemes than those who are not in marriage. This could be due to the fact that people in marriage have more responsibilities than those who are not in marriage. People in marriage have to take care of expenses of the members of the family and sometimes relatives, a practice common in most African countries. It becomes more convenient for them to join health insurance schemes to cater for unforeseen health shock in their families. The results are in agreement with Muketha (2016) that being married increases the chances of health insurance scheme uptake.

Furthermore, results revealed that people who are in the high-income category are more likely to join health insurance schemes than those with low income. This could be due to the fact that people with low income have hand-to-mouth income implying that, the income which they earn is enough for daily expenses only, no surplus for saving. Unlike employees in the formal sector whereby it is mandatory for them to join health insurance schemes, employees in the informal sector have a voluntary setup. Therefore, given the meagre amount they earn, it is difficult for them to fit their expenses for daily needs and monthly/yearly contribution of the health insurance schemes. Similar results were reported by Muketha (2016) in a study of Determinants of the Uptake of National Health Insurance among Informal Sector Workers in Kenya whereby higher wealth index positively affected the uptake of NHIF among informal sector workers. Results are also supported by Kagaigai et al. (2021) where results showed that the odds of being insured by CHF are 76% lower for households with income between 0 and 49,999 Tshs, relative to households with income of 1,000,000 TZS

or higher. This is contrary to Mnally (2013) who found that income was not a good predictor of willingness to join health insurance. The findings of the income categories support the consumer theory that consumption is constrained by the budget.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The study set out to determine the influence of socio-economic factors on the membership status of health insurance schemes in the informal sector of Tanzania. This study has identified that becoming a member to the Health Insurance Scheme is dependent on sex, age group and education. The findings of this study suggest that sex, age and education have great influence on one becoming a member of the Health Insurance Scheme. The variables of income and marital status were not found to significantly influence Health Insurance Scheme (HIS) membership. However, the categories of high income, married and widowed were found to significantly influence membership to HIS.

The results of this study indicate that any measures and actions taken to influence HIS membership status should pay special attention to the variables of sex, age group and education and specific categories of high income and married. This study has provided insights on the socio-economic factors influencing membership to Health Insurance Scheme of the informal sector at national level. The reported findings shed light on the current status of informal sector membership to Health Insurance Scheme.

5.2 Recommendations

The study recommends the following:

Health insurance services can implement a referral or ambassador program, where they can reach out to the women who have joined these health insurance schemes and see if they can reach out to their closest male friends, relatives, neighbors etc. so that they can encourage them to also be members of these health insurance schemes. This is because word-of-mouth recommendation is more effective compared to other types of awareness/promotional programs.

More awareness campaigns can be conducted by the government especially local government, since they are closer to the community, and health insurance services, targeting households where majority of members don't have formal schooling. The census data can be a good source of this information.

As a way of increasing the number of single/unmarried people so that they become members of health insurance schemes, groups such as youths and young adults can be targeted at all levels of schooling, and other places of employment. In the case of schooling, it can be integrated through the Ministry of Education, whereas for other areas health insurance services can conduct the outreach activities.

To increase public awareness, various stakeholders such as the government and health insurance companies can conduct an aggressive public awareness campaign through various channels e.g., TV & Radio advertisements and learning programs, religious leaders, social media, magazines, newspapers, public gatherings etc. so as to reach the widest number of people as possible.

6.0 LIMITATIONS OF THE STUDY AND AREAS FOR FURTHER STUDIES

The study is limited to socio-economic factors of households' heads in Tanzania. This implies that decision making may be narrowly inform of the significant influencers of membership status and hence affect effective design of necessary measures and actions to be taken. Since factors that influence membership status go beyond socio-economic factors, a similar study including other factors like family size, quality of health care services, awareness on social health services, premium packages are recommended to better inform policy and other development decisions.

REFERENCES

Abraham E, Gray C, Fagbamigbe A et al. (2021). Barriers and facilitators to health insurance enrolment among people working in the informal sector in Morogoro, Tanzania. AAS Open Res 2021, **4**:45 (https://doi.org/10.12688/aasopenres.13289.1

Adebayo, E. F., Uthman, O. A., Wiysonge, C. S., Stern, E. A., Lamont, K. T., & Ataguba, J. E. (2015). A systematic review of factors that affect uptake of community-based health insurance in low-income and middle-income countries. BMC Health Services Research, 15(1). https://doi.org/10.1186/S12913-015-1179-3

Chengula, & Rose. (2019). Factors Influencing Informal Sector Personnel to Join Health Insurance Schemes in Tanzania. http://scholar.mzumbe.ac.tz/handle/11192/3300

Dartanto, T., Pramono, W., Lumbanraja, A. U., Siregar, C. H., Bintara, H., Sholihah, N. K., & Usman. (2020). Enrolment of informal sector workers in the National Health Insurance System in Indonesia: A qualitative study.

Heliyon, 6(11), e05316. https://doi.org/10.1016/j.heliyon.2020.e05316

DTDA. (2018). Labour market profile Tanzania and Zanzibar 2021/2022. Danish Trade Union Development Agency, 1–42. https://www.ulandssekretariatet.dk/.

Hooley, B., Afriyie, D. O., Fink, G., & Tediosi, F. (2022). Health insurance coverage in low-income and middle-income countries: progress made to date and related changes in private and public health expenditure. BMJ Global Health, 7(5), e008722. https://doi.org/10.1136/BMJGH-2022-008722

ILO. (2020). Social Protection Spotlight.

ILO. (2022). Concept Note Informal Economy in Africa : Which Way Forward ? Making policy responsive , inclusive and sustainable.

Jamal, M. H., Abdul Aziz, A. F., Aizuddin, A. N., & Aljunid, S. M. (2022). Successes and obstacles in implementing social health insurance in developing and middle-income countries: A scoping review of 5-year recent literatures. Frontiers in Public Health, 10. https://doi.org/10.3389/FPUBH.2022.918188/FULL

Kamuzora, P., & Gilson, L. (2007). Factors influencing implementation of the Community Health Fund in Tanzania. Health Policy and Planning, 22(2), 95–102. https://doi.org/10.1093/HEAPOL/CZM001

Kigume, R., & Maluka, S. (2021). The failure of community-based health insurance schemes in Tanzania: opening the black box of the implementation process. BMC Health Services Research, 21(1), 646. https://doi.org/10.1186/S12913-021-06643-6/FIGURES/1

Magaria, B. R., Shauri, N. E., Masanyiwa, Z. S., Magaria, B. R., Shauri, N. E., & Masanyiwa, Z. S. (2023). Household's Ability to Afford Health Insurance Packages in Tanzania. Open Journal of Social Sciences, 11(4), 59–73. https://doi.org/10.4236/JSS.2023.114005

Munene, D. (2016). Determinants Of The Uptake Of National Health Insurance Among Informal Sector Workers In Kenya.

Namuhisa, A. (2014). Determinants of Uptake of National Hospital Insurance Fund Scheme by the Informal Sector in Nairobi County, Kenya. Interdisciplinary Journal of Contemporary Research in Business, 2(4), 56–60.

Osei Afriyie, D., Krasniq, B., Hooley, B., Tediosi, F., & Fink, G. (2022). Equity in health insurance schemes enrollment in low and middle-income countries: A systematic review and meta-analysis. International Journal for Equity in Health, 21(1), 1–12. https://doi.org/10.1186/s12939-021-01608-x

Shahid, S., Jha, N., Khanalid, V. K., Gurung, G. N., Sharma, B., & Shrestha, M.

(2022). Utilization of social health security scheme among the households of Illam district, Nepal. PLoS ONE, 17(5). https://doi.org/10.1371/journal.pone.0265993

UN. (2015). Transforming our World: The 2030 Agenda for Sustainable Development | Department of Economic and Social Affairs. UN. https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981

USA. (2022). Tanzania - Healthcare. International Trade Administration. https://www.trade.gov/country-commercial-guides/tanzania-healthcare

WHO. (2003). SEA-HSD-265 Distribution: General Social Health Insurance. https://apps.who.int/iris/bitstream/handle/10665/206364/B3457.pdf?sequence=1