

**INTERNATIONAL JOURNAL OF  
INNOVATIVE RESEARCH AND KNOWLEDGE**

ISSN-2213-1356

www.ijirk.com

**FACTORS INFLUENCING ADOPTION OF HEALTH  
INSURANCE BY PRIVATE COMPANIES IN TANZANIA:  
THE CASE OF PRIVATE COMPANIES IN ARUSHA****JEREMIAH ELISANTE CHAKI****Abstract**

*The study aimed to determine factors influencing private companies' adoption of health insurance in Tanzania. The study specifically aimed to explore the awareness of private companies towards the health insurance policy, to examine the compliance to health insurance policy by private companies, and to identify the challenges towards adherence to the health insurance policy by the private companies in Tanzania. The study was descriptive in nature and used a case study design. The study collected data from 100 selected respondents through a stratified simple random sampling technique. Data were collected through interviews, questionnaires, and documentary reviews. Major findings have shown that awareness of private companies toward health insurance policies could be much higher. An average of 96.3% of respondents disagreed with their working companies' awareness of health insurance policies. This has resulted in low registration for health insurance in private companies involved in the study. However, this finding should not be generalized to other private companies as they may differ in the level of awareness on the significance of accessing employees with health insurance. Hence, it affects their commitment to registering for health insurance. To a greater extent, private companies involved in the study do not comply with health insurance policies. The findings show that 90% of the respondents disagreed that their company operates according to a health insurance policy, 97% percent of the respondents disagreed that their company has the policy to guide the provision of health insurance, 100% of the respondents disagreed that governments guidelines are fair on the provision of health insurance by private companies, and 93% percent of the respondents disagreed on their company's fulfillment of rules and regulations on health insurance provision. Challenges towards adherence to the*

*health insurance policy by the private companies in Tanzania include unaffordable costs, cumbersome procedures, ignorance of clients and company, poor record management of client's registration requirements, limited nature of accessing to health insurance services, English language barrier, limitation of family members registration, lack of commitment among health insurance staff, limitation of age to using health insurance, discrimination of health insurance cards and scheme, and exemption of some medical treatment. The study recommends that private companies have a clear policy to guide health insurance registration. The private company should sensitize employees on the importance of health insurance to increase their awareness. Health insurance schemes should not be restricted to some medical care/treatment. Health insurance companies should have user-friendly procedures for registering clients.*

**Keywords:** Health insurance, Tanzania, NHIF, Registration, Companies, Private

---

## 1.0 Introduction

Health insurance is a contract between a policyholder and a third-party payer or government program to repay the policyholder for all or a portion of the cost of medically necessary treatment or preventive care provided by health care professionals. Health insurance is available to individuals who participate in groups (e.g., employer-sponsored), individual (or personal insurance), or prepaid health plans (e.g., managed care)<sup>1</sup>.

Mkuya (2014) argues that the insurance sector plays an important role in the national economy by providing the national underwriting capacity for risks and contributing towards mobilizing savings for the country's sustainable economic development. The true significance of the insurance sector lies in the fact that it enables the economy to operate efficiently and effectively. A reliable mitigation mechanism would protect most economic activities from risk. A safe and stable insurance industry is vital for underwriting stability and confidence in the country's economic system.

According to the World Health Organization (2003), health financing policy emphasizes that the health system as a financing strategy is a key determinant of population health and well-being. This is particularly true in the poorest countries where health spending must be increased to ensure equitable and universal access to needed health services and interventions. Like many countries in sub-Saharan Africa, Tanzania shares a tight public healthcare budget. It must improve access to health services, especially for low-income people working in rural areas and the informal sector (Kumburu, 2015).

Health Insurance is vital for safeguarding the health of the population. This notion prompted the government of Tanzania, through the National Health Insurance Fund Act of 1999, to establish a body that would safeguard the registration of individuals for health insurance services. The Act provides the regulation on how the Fund would operate. Currently, various stakeholders are providing health insurance packages through the liberalization of the economy and the inclusive insurance sector. Despite the effort of the government to ensure that most of the population is issued with the health insurance policy through liberalization and establishment of NHIF, there still needs to be a higher response regarding registration.

As of December 2017, NHIF and CHF had registered only thirty-one percent of the population (31%). The situation was worse in the private sector as less than one percent (1%) of the total population had been registered. This trend differs from the established target of ensuring that 50% of the population is registered by 2020. Logically, some

---

<sup>1</sup> Delmalearning.com

factors hinder the registration of the population. Against this background, this paper assesses the factors influencing the adoption of health insurance by private companies in Tanzania.

## 2.0 Literature Review

This section presents the theoretical and empirical discussion of the study.

In terms of the theory, Kim *et al.* (2013) argue that there is an urgent need to help consumers understand health insurance and to help optimize decision-making for their particular situation during open enrollment periods. They further argue that Consumers think choosing a health insurance plan is important. Still, might need to make more optimal health insurance choices for reasons such as low health insurance literacy, lack of information or misinformation, information overload, and time constraints.

As quoted by Kim *et al.* (2013), Fox, Bartholomae, & Lee (2005), and Lusardi (2008), in the United States of America, many Americans lack the knowledge and skills to make financial decisions and manage their assets such as managing risk through health insurance. Thus, low health insurance literacy, misinformation, and information overload may hinder people's willingness to buy the insurance policy. Also, from the companies' point of view, some companies may hesitate to buy the insurance policy due to a lack of information and the lack of willingness to buy the insurance policy.

Farley Short *et al.* (2002); Hanoch & Rice (2011); Hibbard, Slovic, Peters, & Finucane (2002); Quincy (2011); Wroblewski (2007), as quoted by Kim *et al.* (2013) argue that make health insurance decisions consumers need: clarity of financial aspects of available plans; reliable and easy-to-understand information; an effective way to navigate through the myriad options available to them in the health insurance marketplace; and sources they can trust. Lack of the said items may affect the behavior of buying an insurance policy.

Empirical-wise, the health sector reforms in Tanzania widened the range of financing options; in stark contrast to the pre-reform era, the private sector became increasingly seen as a complementary partner rather than an opponent. This increase in private sector activity led to a natural concern for the role of regulation in achieving and structuring positive benefits. Indeed, the reform documents stress the need for a 'strong regulatory authority' to monitor the supply, quality, and geographical distribution of health services and associated industries such as pharmaceuticals (URT, 1994). In Tanzania, much of the regulation tends to be legally based; much of the recent legislation concerning the 'privatization' of the health sector reflected the need to regulate private hospitals and facilities. Thus, two key pieces of regulation are the passage of the Private Hospitals Act (1991) and the Amendments to the Pharmaceuticals and Poisons Regulation in 1990. Both changes essentially legalized private practice for pharmacists, hospitals, and medical practitioners. Legislation also restricts registering new private pharmacies in areas with adequate distribution, but it is unclear whether this happens in practice. The various pieces of legislation are described in more detail below. A summary of the main policy architecture in place follows this.

According to Kumburu (2015), in Tanzania, health insurance and related legislations are technically sound, with the various enactments and their respective regulations adequately covering the different forms of health insurance and health service delivery in the country. However, as in any other dynamic country, principal laws and their more detailed regulations must be adjusted to changing policies, considering societal developments, new or evolving international treaties, and jurisprudence (Bultman *et al.*, 2012). Laws developed over time, sometimes without reference to one another, and dealing with particular issues such as health financing and health insurance, can easily devolve into a regulatory patchwork that may no longer reflect the actual policy objectives of a national Government. Current legislation codifies existing policies, as it should, but if policies change, legislation needs to change with them, reflecting current policy objectives (Bultman *et al.*, 2012). Health insurance policy was also

introduced in Tanzania in 1993 (MoHSW 2007); hence, the National Health Insurance Fund as a public institution was established by Act No.8 of 1999 (CAP 395 R.E 2002).

Kumburu (2015) argues further that the main objective of NHIF is ensuring health care services to employees in the public, private, and other groups are available, accessible, and affordable to contributing members and their respective legal dependants. NHIF is the largest alternative health financing option (scheme) that commenced operations in July 2001 as a driving force towards implementing the Health Sector Reform Policy (1993/4). The coverage of the National Health Insurance Fund (NHIF) in Tanzania as of July 2013 was about 6.6% (NHIF 2013). This health financing mechanism requires monthly subscription premiums. However, more formal health funding mechanisms are needed to solve the challenge of financing health services for over 70% of Tanzanians residing in rural areas who are also involved mainly in the informal economic sector (NHIF 2013).

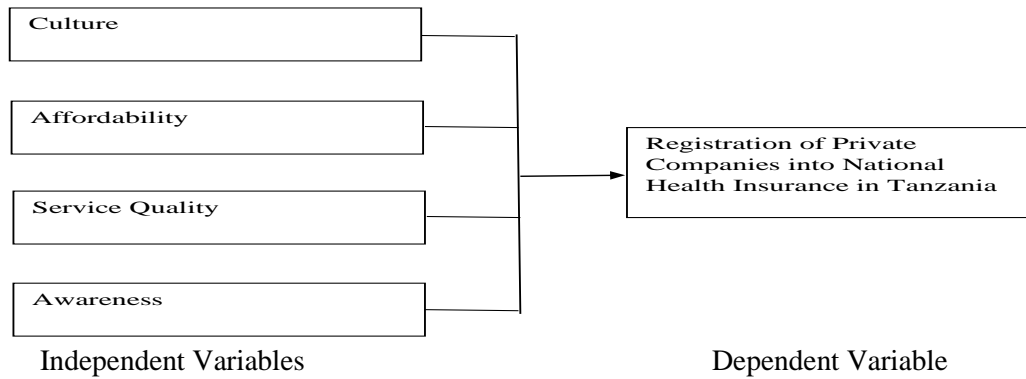
The literature notes that there are serious problems of why most people don't have health insurance. For example, Kumburu (2015) argues on the general perception of the population at large about health insurance registration. Most of the population has the culture of registering until old age or when someone is terminally ill. This generally is a negative perception as far as health insurance is concerned. It was argued that registering among the individuals the terms and conditions of membership are difficult. Furthermore, completing good health insurance registration requires the involvement of various stakeholders such as hospitals, other health facilities, fund providers, development partners, and many others.

Similarly, the corruption problem. It was commented that corruption is at peoples' fingertips. Corruption activities prevail among the office staff as some of the money is being reallocated for other activities by corrupt officers. Also, some individuals are groomed to provide a particular amount of money before registering. Other problems identified include problems related to the health system and infrastructure itself that limit the funds' operations, the limited scope of coverage, operating in an unregulated environment, low awareness by the public on how these different schemes operate, preference for cash payments against cards; absence of set basic package by Health and Social Welfare; nonadherence by some health service providers on the standards set by Ministry of Health and Social Welfare and the fraud to mention but a few.

Mteiand Mulligan (2007) argues that Institutions, sectors, and councils could consider consolidating the community health fund with existing community initiatives and leave the control of the scheme to the existing management or encourage group membership, as was the case of Rungwe CHF. This would promote transparency, accountability, and tackling issues of technicalities in simple measures. For instance, the scheme could be decentralized, delegated to local administrative authorities, and regulated and monitored often to ensure quality and effectiveness. This requirement aligns with objective three of the CHF in the Community Health Fund Act of 2001, which wants community members to have the power to decide matters affecting their health (URT,2001). This would bring out willingness and the likelihood of high desire to join these schemes, hence solving existing problems.

### **3.0 Methodology**

The following conceptual framework guides this paper. As presented in Figure 1 below, the factors identified as responsible for low adoption are culture, affordability, service quality, and awareness.



**Figure 1: Conceptual Framework**

The study used a descriptive research design. According to Cooper and Schindler (2008), a descriptive study involves discovering a phenomenon’s what, where, and how. It also focused on the National Health Insurance Fund (NHIF) and selected private companies in Arusha City, situated in the northern part of Tanzania mainland in East Africa. The convenience of accessing study units determined the choice of the study area, the place where the researcher is familiar. The study population involved staff at NHIF- Arusha, Sun Flag, A-Z Unga Ltd, A-Z Kisongo, and Steel Centre, totaling 1615.

**Table 1: Total Populations**

S/No	Category	Population
1	Staff at NHIF- Arusha	24
2	Sun flag	302
3	A-Z Unga Ltd	623
4	A-Z Kisongo	651
5	Steel Centre	317
3	<b>Total</b>	<b>1615</b>

Source: Field

The study used structured interviews with a combination of semi-structured interviews, while the analysis adopted quantitative and qualitative analysis tools. Content analysis was adopted for qualitative data, while quantitative data was analyzed using descriptive statistics. and were as follows;  $\log(p/1 - p) = \alpha + \sum \beta_i X_j$  ..... (i)

eds;  $(p/1 - p) =$  is the odds ratio

$\sum \beta_i X_j =$  is the vector of dependent variables ( $X$ 's) with coefficients ( $\beta$ )

All the statistical computations were done using Statistical Package for Social Sciences (SPSS) version 26, which is comprehensive and offers extensive data handling capacity. The findings are presented in Tables.

**4.0 Findings**

The findings show that 44% (44) of the respondents were female, while 56% (56) were male. The results imply that the majority of respondents who took part in the study were male, implying that most of the companies are with male employees.

The findings show that 44% (44) of the respondents were female, while 56% (56) were male. The results imply that the majority of respondents who took part in the study were male, implying that most of the companies are with male employees. Also, it should be noted that 70% (70) of the respondents were staff, while 30% (30) were students doing practical training from colleges and universities.

The findings show that 30% (30) adopted health insurance through their working company, while 70% (70) of the respondents adopted it through family arrangements. Based on these data, sensitization on health insurance through family arrangements is highly needed to increase the number of insured people. On the other hand, 53% (53) of the respondents strongly disagreed that the health insurance system is irrelevant in Tanzania contexts. In comparison, 38% (38) disagreed that the health insurance system is irrelevant in Tanzania contexts. And 9% (9) of the respondents agreed that the health insurance system must be more relevant in Tanzania. From the findings, it can be concluded that the health insurance system is relevant in Tanzania's health financing arrangements despite being denied by most of its usage. Though the majority of the respondents acknowledge the relevance of the health insurance system in Tanzania, there is a minority (9%) who do not. Therefore, it implies the public's need for more education on health insurance issues to attract more to join health insurance funds.

The findings also show that 19% (19) of the respondents strongly disagreed that the traditional way of health services is better than the formal health system, 27% (27) of the respondents disagreed that the traditional way of health services is better than formal health system and 54% (54) of the respondents agreed that traditional way of health services is better than formal health system. The study findings indicate that the traditional way of health services is better than the formal health system, which is still dominant as an alternative to financing the health system. This may have been an impending factor in health insurance registration in most private sectors. It also implies that people, especially in rural areas, still need to be educated on the suitability of formal health services.

The study also shows that 13% (13) of the respondents disagree on the availability of other alternative ways of dealing with health issues than health insurance, 26% (26) of the respondents strongly agree that there have been other alternative ways of dealing with health issues than health insurance. On the other side, 61% (61) of the respondents agreed that there have been other ways of dealing with health issues than health insurance. Further, the findings indicate that the majority (61%) of individuals in private companies still need to be registered with health insurance. Therefore, access to health services is mainly based on direct cash payments. This finding is attributed to the low registration rate of private companies' health insurance funds.

Regarding feeling secure with health insurance, the findings show that 63% (63) of the respondents strongly agreed that they feel secure if they have health insurance, and 37% (37) agreed that they feel secure if they have health insurance. The presented data imply that respondents understand the importance of health insurance. Therefore, health insurance services must be improved to meet their needs beyond their expectations.

Further, the findings show that 73% (73) of the respondents strongly agreed that someone with health insurance affords health services compared with someone without health insurance; 27% (27) of the respondents agreed that someone with health insurance affords health services compared with someone without health insurance. The findings imply that health insurance is important to access health services. However, one respondent believed that *"Because some people in Tanzania still live under one dollar per day. Hence insurance payment is expensive as it ranges up 1.5 million to some health insurance schemes"*, which is not affordable by most Tanzanians.

Accordingly, Msuya *et al.* (2004) low income and income un-reliability are other reasons for low enrolment. They found that 60% of richer households in Igunga district joined the scheme compared to 33% of the poorest households. Other reasons cited include lack of information due to insufficient sensitization/education of the

community; introduction of NHIF, which took out public servants who were previously members of CHF, non-coverage of referral care; perceived poor quality of health care services at public facilities (drug in availability and inadequate service provision); poor staff attitudes; and broad exemption policies which leave a limited number of people contributing to the CHF (Mwendo, 2001; MOH, 2003; Mhina, 2005; MOH, 2006). Bonu *et al.* (2003) argue that the poor enrolment rates in many CHFs may be linked to a perception of poor quality of care. Thus, those who register initially into the scheme may only drop out quickly if the care quality meets expectations.

On the other hand, 46% (46) of the respondents strongly agreed that their company understands well its role of providing health insurance to staff; 38% (38) of the respondents agreed that their company understands its role of providing health insurance to staff, and 16% (16) of the respondents disagreed. This implies that companies are aware of health service insurance. According to one respondent, *“health insurance is affordable to those are under employment contract while the unemployed do not have direct access to it.”* Furthermore, 65% (65) of the respondents strongly disagreed that the focus of the private company is on paying less for health services rather than benefiting from health insurance; 31% (31) of the respondents disagreed that the focus of the private company is on paying less for health services rather than benefiting from health insurance; 4% (4) of the respondents agreed that the focus of the private company is on paying less for health services rather than benefiting from health insurance. The analysis and presented data indicate that the majority (96%) of respondents disagreed that the focus of private companies is on paying less for health services rather than benefiting from health insurance.

Moreover, 81% (81) of the respondents strongly disagreed on trust in the health insurance services provision; 7% (7) of the respondents disagreed on the trust of the health insurance services provision; and 12% (12) agreed. The analysis of the data shows that clients have trust in health insurance services provision. In addition, 65% (65) of the respondents strongly disagreed with being aware of the National Health Insurance Fund Act, 20% (20) of the respondents disagreed with being aware of the National Health Insurance Fund, and 15% (15) agreed. The presented data indicate that most (85%) respondents must be aware of the National Health Insurance Fund Act. Besides, 56% (56) of the respondents strongly disagreed with a health insurance policy being favourable to private health insurance providers; 29% (29) of the respondents disagreed with a health insurance policy being favourable to private health insurance providers; and 16% (16) of the respondents agreed. The data analysis shows that most (84%) respondents disagree that the health insurance policy favours private providers.

Finally, on the service influence in health insurance registration, the findings indicate that 90% of the respondents disagreed that companies operate strictly according to the provided health insurance policy, and 10% agreed. This implies that private companies do not comply with health insurance policies. Further, the findings show that 97% of the respondents disagree that the company has a policy to guide the provision of health insurance, and only 3% of the respondents agreed. Also, 100% of the respondents disagreed that government guidelines on providing health insurance by private companies are fair. Likewise, 93% of the respondents disagreed that their companies fulfill all rules and regulations on health insurance, and 7% agreed. Conversely, 74% of the respondents positively agreed about the quality of services at health facilities registered by health insurance. Lastly, all respondents (100%) disagreed that there should be a ceiling on health services given by health insurance.

Further, the study revealed that 61% of respondents indicated that the quality of health insurance services is good, giving reasons such as it enables people to have good health. In comparison, 39% of the respondents said it is not encouraging, giving reasons such as the exclusion of some diseases in the national health insurance list and bureaucratic procedures of health insurance treatments. Also, health service quality depends on the type of health insurance scheme. Besides, some medical centers provide services to those with cash rather than health insurance cards.

## Regression Analysis

The study conducted a regression analysis to help establish the influence of the independent variables: culture, affordability, service quality, and awareness of health insurance registration by private companies in Tanzania.

**Table 2: Logistic regression results**

Variable	Coef.	Std. Error	p-value	Odds ratio
Constant	-2.847	0.218	0.000	-
Gender	0.935	0.935	0.857	2.547
Nature of Respondents	0.383	0.042	0.000	1.466
Cultural aspects	-1.580	0.028	0.000	0.853
Affordability	-1.061	0.032	0.002	0.346
Registration	0.762	0.762	0.333	2.142
Awareness	0.867	0.069	0.034	2.379
Model fit summary:				
$R^2 = 0.705$				
Hosmer and Lemeshow Test: $\chi^2$ (p - value) = 8.47 (0.252)				

From the results in 2, factors such as the nature of the respondents ( -2.847,  $p = 0.000$ ), cultural aspects (-1.580,  $p = 0.000$ ), affordability (-1.061,  $p = 0.002$ ), and awareness (0.867,  $p = 0.034$ ) significantly affect the adoption of health insurance in private companies. This result suggests the administrative group has 1.466 times more likes to have health insurance than the students' groups. In the case of cultural aspects, the majority who disagreed would prioritize the cultural aspects, such as traditional herbs usage, with a 0.853 higher probability of having health insurance than those who agreed. However, the affordability of health insurance has inversely affected the adoption of health insurance as those private companies with fairly affordable insurance have a 0.346 higher probability of adopting health insurance than those with very affordable policies. However, those companies with awareness of health insurance policies were 2.379 more likely to adopt health insurance than those without. Overall, the model fit well as these factors explained 70.5% of the variance of the adoption of health insurance.

## 5.0 Policy Recommendation

Based on the study's conclusion, the following are recommendations. The study indicated that cultural traditions and beliefs contribute to low health insurance adoption by private companies. Therefore, people should be educated to change their mindsets by informing them of the advantages of formal health services over traditional ones to attract them to register for health insurance schemes. Regarding affordability of insurance health services, it is recommended that Once the rate of payment is made friendly for people to afford since the majority of Tanzanians are poor, two the modal of payment can also be made affordable through installments rather than a lump sum, three insurance health services should be brought near rural areas to cut off transport costs as most of these services are at the level of the hospital rather than dispensary and health Centre level.

Furthermore, it is recommended that services quality of health insurance should be improved in terms of supply, accessibility, and geographical distribution to capture wide population coverage. In addition, the government, under the Ministry of Health and Welfare, ensures regular evaluation and assessment. Besides, red tape procedures for registration to health insurance should be minimized. Still, it is recommended that people be sensitized through education campaigns to maximize awareness of health insurance services and their benefits. Finally, there is a need



for NHIF to have deliberate awareness and mobilization programs to encourage private companies to register. In addition, the government should make it mandatory for private companies to register with NHIF.

## 6.0 Conclusion

This study set out mainly to assess the factors influencing the adoption of health insurance by private companies in Tanzania, specifically focusing on the influence of culture, affordability of health insurance, service quality, and awareness. High costs of services provided by private health insurance companies impend registration to health insurance by the majority. The costs include transport, especially for clients from rural areas. This is because the majority of health insurance services are in urban areas. This makes it difficult for poor individuals and families to register for health insurance.

## References

- Bonu, S., R. Manju. (2003). "Using willingness to pay to investigate repressiveness of user fees in health facilities in Tanzania." *Health Policy and Planning* 18: 370-382.
- Cooper, R.D., & Schindler, P.S., (2003). *Business Research Methods*, Tata McGraw – Hill Edition.
- David K. Pharr, J. Alexander P, and Weinert K.S (1992) *WHO IS THE INSURED?* Tata McGraw – Hill Edition
- Finnerty, J. D. (2007). *Project financing: asset-based financial engineering*. John Wiley and Sons.
- Fisher, R. A. (1995). *Statistical methods, experimental design, and scientific inference*. J. H. Bennett (Ed.). Oxford University Press.
- Hermansyah A, Sainsbury E. Krass I. (2018) *Investigating the impact of the universal healthcare coverage program on community pharmacy practice*. *Health Soc Care Community*; 26(2): e249-e260. doi: <https://doi.org/10.1111/hsc.12506>
- Kamuzora, P. and L. Gilson (2007). "Factors influencing implementation of the Community Health Fund in Tanzania." *Health Policy Planning* 22: 95-102.

- Kumburu P.N (2015), *National Health Insurance Fund in Tanzania as a tool for improving Universal Coverage and Accessibility to health care services Case of Dar es Salaam*, Mzumbe University
- Jinheen Kim, Bonnie Braun, Andrew D Williams; *Understanding Health Insurance Literature; A Literature Review*, Family and Consumer Sciences Research Journal, Vol.42 1, September 2013.
- Mhina, L. G. (2005). Factors contributing to high drop-out of CHF members in Nzega District, University of Dar es Salaam. Master of Public Health: xiv, 59p.
- Ministry of Health and Social Welfare. 2015. *Health Sector Strategic Plan July 2015 – June 2020*. Dodoma, T.Z.: United Republic of Tanzania.
- MOH (2003). Assessment of CHF in Tanzania: Factors Affecting Enrolment and Coverage. Dar es Salaam.
- MOH (2005). *Health Sector PER update*, United Republic of Tanzania.
- MOH (2006). *The Community Health Fund Facilitative Supervision Report*. Dar es Salaam, Ministry of Health.
- Mugenda, O., & Mugenda, A.G. (2003): revised. *Research Methods; Quantitative Qualitative Approaches*: ACTS Press, Nairobi.
- Stephen Musau, Grace Chee, Rebecca Patsika, Emmanuel Malangalila, Dereck Chitama, Eric Van Praag, and Greta Schettler(2010). *Tanzania Health System Assessment 2010-Draft Report*. AbtAsociates, USAID. July 2011.
- Musau, S. J. (2004), *The Community Health Fund: Assessing Implementation of New Management Procedures in Hanang District*, Tanzania. Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates Inc.
- Mwendo, H. M. (2001). *Accessibility and sustainability of health services Iramba District: Three years after community health fund implementation*, University of Dar es Salaam. Master of Public Health.
- Noel G. (2017). *On the growth of the financial sector after liberalization in Tanzania; evidence from the insurance industry: the case of the selected general insurance companies in Tanzania*; Coventry University
- OECD (2011) *OECD Guidelines on Insurer Governance: Volume 2011*, OECD Publishing, 28<sup>th</sup> Nov 2011- 92 Pages.
- WHO (2015). *A new report shows that 400 million need access to essential health services*. [<http://www.who.int/mediacentre/news/releases/2015/uhc-report/en/>] Site visited on 2/3/2018
- World Health Organization (WHO) (2005). *Secretarial Report of 2005*: Geneva
- Yamane, T. (1967). *Statistics, An Introductory Analysis, 2nd Ed.*, New York: Harper and Row.