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Economic Benefit of Savings and Credit Cooperative Societies on the Well-being of the Individual: Evidence from Mbeya District, Tanzania

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Abstract

Savings and Credit Cooperative Societies (SACCOS) are registered organization that are formed to impart a saving spirit and extend loans to the members based on individual requirement and society rules and regulations in relation to their savings. They are societies that mobilize savings and speed up investment by allowing its members to access loans and invest for income generation and thereby contributing to poverty reduction. The poor living condition of the people is associated with little or inadequate capital for investment purposes. This paper investigates the economic benefits of SACCOS on the well-being of the individual. The study used regression analysis and descriptive statistics, where collected data were analyzed using ordinary least square (OLS) regression, cross tabulation and independent t-test. In the independent t-test, the means of the investment capitals for both SACCOS members and non-members were compared. The results indicate that the means of the investment capital employed in the business enterprises are not the same between SACCOS members and non-members. The average investment capital was higher for the members and lower for non-members. The results from t-test were supported by Eta squared estimates that show the magnitude of the effect of investment capital on the business enterprises of both SACCOS members and non-members. The results from the cross tabulation reveal that SACCOS members possess a significant higher amount of properties as opposed to non-members. The findings from the regression analysis concluded that SACCOS members own more assets due to acquisition of credit and thus stands in a better position for accumulation of wealth than the non-members. The study recommends that more people should join in SACCOS in order to save in a pool and access loans at low cost and with little or no collateral at all for investment and hence reducing poverty and improves their well-being. As a policy implication, the study calls for the formation of more SACCOS where people can acquire capital for investment purposes and thereby contributing to industrial economy; which is the focus of the Nation of Tanzania today.

Keywords: SACCOS, Economic benefits, well-being of SACCOS members, investment capital.

1. Introduction

Availability of credit to the rural people was seen as a major problem to rural people both in developed and developing countries (see Neifeld, 1931; Emmons and Mueller, 1997; Guinnane, 2001). Credit cooperatives were established to provide access to credit to individual who were inaccessible to formal sources. The reasons associated with lack of opportunity for utilization of

formal credit vary mainly depending on the location and wealth status of the individual. In many rural areas, both in developed and developing economies formal banks were very few or even none existed at all. Wealth affects access to formal bank credit because most of the rural people and the poor in cities could not afford physical collateral demanded by the formal sector such as titled land and buildings. Therefore, lack of collateral significantly exclude the rural and the poor in cities from credit acquisition, limiting the growth and expansion of their business enterprises.

Studies of SACCOS to date have provided evidence that SACCOS can serve many different functions. Their importance has been experienced in durable goods acquisition (Besley and Levenson, 1996); they allow individuals to acquire durable properties earlier than the time through self-saving. SACCOS permits individuals to reap the gains from intertemporal trade, which leads to increased capital (Huppi and Feder, 1990). These studies provide evidence on the importance of SACCOS, even in an economy that has undergone significant modernization such as Germany (Guinnane, 2001), and which is a choice of even relatively wealthy population.

These credit cooperatives did not disappear with the economic development in the industrialized countries, instead they have become among the fastest growing groups of financial institutions in some advanced nations today (Emmons and Mueller, 1997). The findings show that most American credit unions concentrate on consumer lending and do very little business lending (Delbrouck, 1994). The National Credit Union Administration, the body that charters and supervises federal credit unions, reinforces this historical pattern, strongly discouraging business lending. The situation is quite different in developing countries where a large proportion of credit is directed into financing business enterprises.

Understanding the economic benefit of credit from SACCOS is a panacea for not only improving people's participation in SACCOS but also in influencing the formation of more SACCOS; which has a multiplier effect toward employment creation, income generation and improvement in the well-being of the individuals. This is because loan acquisition improves income level and such an income can further be used to create employment and thus contribute to poverty reduction. Aspiration to nurture social and economic progress in the economy motivates the engagement into this specific minute source of credit to allow the dissemination of the valuable significance of participating in SACCOS for imparting positively on the industrial economy; a slogan devoted by the current President of Tanzania Hon. Dr. John Pombe Magufuli.

2. Literature Review

Experience shows that external financing is the preeminent way of easing the financial difficulties encountered by entrepreneurs in their struggle to increase capital for investment. Other sources of finance for investment at the individual level include retained earnings, equity finance, thrift savings, asset based financing and suppliers' credit (Hofstrand, 2013). Financing through suppliers is common in large firms including those with high sales growth and investment (Garcia-Teruel and Martinez-Solano, 2010).

Retained earnings and equity financing could have been an alternative source of capital for individuals. However, a large proportion of poor people fail to invest in big businesses that can yield significant earnings to enable them to re-invest (Chandler, 2009; Vaidya, 2011; Chan and Ghani, 2011; Hernandez-Canovas and Koeter-Kant, 2011). Asset based financing has been

commonly used by entrepreneurs to acquire credit especially from the formal sources, where an individual pledge assets as marketable securities such as inventories, fixed assets (plant, real estate) and account receivable as collateral for long-term loans (Berger and Udell, 2005). However, poor people tend to have limited assets to facilitate acquisition of loans from formal sources (McKernan, 2002; Felsenstein and Fleischer, 2002; Komicha, 2007; Bertocco, 2008; Kahraman *et al.*, 2009)

Thrift saving involves saving where an individual stores part of the disposable income, often practiced by poor individuals in the least developing countries. Even though it has not been easy for the poor people to maintain adequate savings to be able to finance new investment, it is argued that relying on saving destructs potential entrepreneurs from taking part in more productive investment opportunities (Besley, 1995).

Studies (e.g., Kasambala, 2017; Mavimbela *et al.*, 2010 and Neifeld, 1931) have shown that SACCOS as one form of the external sources of finance has significant positive effect on the well-being of the individual. They (SACCOS) influence resource allocation, mobilizes local savings and offers loans with low enforcement and operating costs. The members' confidence is reflected in the cooperative's ability to mobilize savings and encourage loan repayment. The willingness to loan repayment that exists in SACCOS is linked with better credit terms, in particular, the mode of repayment and the use of social sanctions that are typically not available in the conventional banking but are available in the cooperatives (Huppi and Feder, 1990). The cost of processing a loan is relatively low because these organizations can easily assess the creditworthiness of members by relying on the group's collective experience. Hence, they can in most instances quickly and without much paperwork, process a loan application (Miracle *et al.*, 1980). Bearing this advantage, SACCOS have been able to serve even poor members who could never be covered by formal financial institutions such as the banks.

These SACCOS are considered to be a reliable opportunity for entrepreneurs to access investment capital and safe deposit; both of these services do speed up the investment level (Huppi and Feder, 1990). They (SACCOS) are institutions that help members to meet even education and health needs. These institutions are thus seen as essential ingredients for developing business enterprises in many parts of the world (Yankson, 1979; Adenkule and Henson, 2007) because obtaining credit add to investment capital, which imparts positive effect to one's wealth status. When the ability to accumulate wealth is enhanced, it means that even the economic wellbeing of the individual entrepreneur is significantly uplifted. The study concentrates on individual loans taken from SACCOS and makes major contribution to the existing body of literature on the benefits of SACCOS credit. It (the study) uses "wealth" as the outcome variable to measure the effect of SACCOS credit on the individual member. The study uses wealth, which has not, being used before as a proxy for the effect of credit, which is more stable and less likely to be affected by fluctuation of income.

3. Theoretical Framework

The Demand theory is a principle relating to the association between consumer demand for goods and services and price. The Demand theory relates consumer desire to purchase and the ability to pay for goods available. the demand for good is determined by several factors such as

the price of the commodity, the taste and desires of the consumer for a commodity, income of the consumer, future expectations of the consumers and the price of related goods, substitutes or complements (Ahuja and Ahuja, 2011). This paper connects the desire to purchase and hold wealth (wealth status) with independent factors that include investment capital, expected returns, years of schooling, household size, and access to credit. The explained variable is expected to be positively influenced by the amount of capital investment possessed by the individual, expected returns from the business, years of schooling and access to credit. While household size is expected to affect negatively wealth status of the individual entrepreneur. This is because with an increase in household size, the funds available for investment purposes can be utilized into consumption of non-durable goods. The likelihood of income generation and hence possession of wealth is likely to be affected by household size and access to credit. This paper integrates the demand theory to determine the relationship between the identified explanatory variables on the explained variable “the wealth status.”

4. Research Methodology

The study population comprises SACCOS members and nonmembers in Mbeya District. The district was chosen due to enormous number of economic activities undertaken in the area. The area is located at the border of Zambia and Malawi, this prompts majority of the people to be involved in business activities. The motive of conducting business has increased the desire of acquiring sufficient funds for investment purposes and that have resulted into increasing number of sources of finance in search for investment capital.

Simple random sampling was used to select the study units, where 480 respondents were collected during the first stage of data collection of a longitudinal research design. Out of 480 respondents, 239 were SACCOS members and 241 non-members obtained from the areas where the sampled SACCOS are located. Based on the purpose of the study data were collected using pre-coded structured questionnaire. A comparison of the benefits accrued due to investment undertaken by the SACCOS members and the nonmembers was done via cross tabulation. The study used cross tabulation, where a chi- square test is normally used to study whether the distribution of categorical variables differ from one another.

To compare the means of investment capital recorded for SACCOS members and non-members, an independent t-test was used. The independent t-test compares the means of the two groups, which are not related in some known or meaningful way. The t-test is applicable when there is a dichotomous independent variable and interval / ratio scaled dependent variable. Eta squared was computed in order to determine the magnitude of the mean difference in terms of the capital invested in the business for both SACCOS members and non-members in the study area. The Eta squared was computed by employing Cohen (1988) formula, which ranges from 0 to 1 measure the magnitude of the explanatory variable on the dependent variable, where a value of Eta squared of 0.14 indicates large effect, 0.06 moderate and 0.01 small effect (Cohen, 1988).

$$Eta\ Square = \frac{t^2}{t^2 + (N_1 + N_2 - 2)} \dots\dots\dots (1)$$

Where;

t = calculated t –statistics

N₁ and N₂ = number of sampled SACCOS members and non-members

The following model was employed to analyse the economic benefit of SACCOS at the individual level using the outcome variable of wealth status “ **LNwealth1**” to determine the well-being of the entrepreneurs. The model has been built and embedded in the light of the theory of demand.

$$Y_{ij} = \alpha X_{ij} + \delta LM_{ij} + bC_{ij} + v_{ij} \dots\dots\dots (2)$$

Where, *Y_{ij}* is the wealth status that reflect the desire and ability to possess assets for individual *i* in village *j* in accordance to the theory of demand and *v_{ij}* is the error term. **LM_{ij}** is the variable that measures the effect of SACCOS credit. *X_{ij}* is the vector of demographic characteristics, which encompass household size, years of schooling, business returns from investment per month. In addition, *C_{ij}* is the amount of investment capital used in the business enterprise.

Table 1: Variables used in the OLS regression

Variable name	Definition
Dependent variable	
LNwealth1	wealth status for individual <i>i</i> in village <i>j</i> ; Calculated based on the deflated price of assets to get the real wealth status
Independent variables	
Years of schooling	Number of years spent in schooling
<i>C_i</i>	capital invested in the business
Initial earnings	Earnings per month
LM _{ij}	Membership dummy variable; 1 for members and 0 for non members
Household Size	Number of individuals living in a given house

5. Results and Discussion

4.1 Investment Capital

The findings (Table 2) show that the t-value of 3.775 was significant at P<0.01, providing substantial evidence that the means of the investment capital employed into the business enterprises are not the same between SACCOS members and non-members. The average investment capital was higher (1312900) for members and lower (379000) for non-members.

Table 2: Comparison of Means Using Independent t-test Statistics

Investment capital	N	Mean	Standard deviation
Members	239	1312900	3743770
Non members	241	379000	855000

t-value = 3.775 Df = 478 significance = 0.000

Source: own survey, 2012

The results from the independent t-test were supported by the value of Eta Square of 0.03, which indicates moderate effect of investment capital on the business enterprises of members and nonmembers of SACCOS. The results from the t- test and Eta square enable us to confirm that the level of investment between the SACCOS members and non-members differ significantly.

5.2 Economic Benefit of SACCOS Credit

In order to identify the benefit obtained by the individual entrepreneurs, the respondents were asked to mention the benefits they have obtained as a result of using credit from SACCOS. For non-members the idea was to discover the broad economic changes in the absence of credit. The results are presented in Table 3:-

Table 3: Benefits Experienced by the Sampled Entrepreneurs

Benefits	Members		Non-members		Total	
	N	%	N	%	N	%
Spends in clothing, feeding and educating children	53	22.2	126	52.2	179	37.3
Establish new business and acquire family house	54	22.4	42	17.4	96	20.0
Expand business and returns increases	119	49.7	49	20.4	168	35.0
Purchase new land	6	2.5	8	3.4	14	2.9
Deposits as revolving fund	0	0.0	11	4.6	11	2.3
Purchase a vehicle	7	3.2	5	2.0	12	2.5
Total	239	100.0	241	100.0	480	100.0

$\chi^2 = 107.214$ Significance = 0.000.

Source: own survey, 2012

The survey results (Table 3) reveals that a large proportion of SACCOS members (49.7%) expand their business and business returns increases as a result of participating in SACCOS. Moreover, a substantial higher percent (22.4%) of members as opposed to nonmembers (17.4%) despite investing into other new enterprises were able to build a family house. A smaller percent (2.5%) and (3.2%) of SACCOS members reported that participating in SACCOS has enable them to acquire new plot of land and vehicle respectively. While for the case of non-members a slightly higher percentage of them (SACCOS members) (3.4%) mentioned that they have been able to buy a plot of land. A slightly higher percentage of nonmembers in this category is brought about by the type of business activities undertaken, especially on-farm business which necessitates to own land for farming activities. Other 52.2 percent of nonmembers reported that the only benefit so far they have realized is the ability to pay for children education, clothing, and feeding them and nothing else. Similar observation is reported by few SACCOS members (22.20%). The findings show that SACCOS members are economically better off compared to

non-members. In consistent to these findings, Morduch (1998) also observed that the children of borrowers were substantially better off compared to the children of non-borrowers.

In addition, the results indicate that those who participate in revolving funds were the nonmembers amounting to 4.6 percent of the respondents; have their money kept in revolving funds. The phenomenon, which is widespread to non SACCOS members and commonly, found in urban areas. The finding indicates further that few respondents in particular 3.2 percent of SACCOS members bought vehicles. An additional asset is an indication of the presence of significant returns from their investments.

The results were significant at 1 percent level of significance, implying that the participation in SACCOS has improved the well-being of the members. The results also signify the worth of joining in SACCOS in order to improve the livelihood of the members in terms of wealth status and the level of investment and thereby contributing to poverty reduction in the economy.

3.3 Wealth effect of the respondent under study

From the results (Table 4), the explanatory variables accounted for 51.69 percent of the variation in the outcome variable, the model was significant at $P < 0.001$ level of significance, implying that the explanatory variables have successfully explained the response variable. The Durbin-Watson value of 1.664, which is closer to 2, shows that the stochastic is serially independent meaning that the disturbance occurring at one point of a set of observations is not correlated with any other disturbance occurring at another point of the set of observations. Thus, successive values of the error term are mutually independent. The Breusch-Pagan / Cook-Weisberg test for heteroskedasticity for the fitted values indicates a chi-square of 1.88, which is not significant at a probability level of 0.1698 to allow accepting the null hypothesis of homoskedasticity. This means the estimated variance of the residues from regression does not depend on the values of the independent variables; therefore, there are no traces of the problem of heteroskedasticity in the fitted variables.

The mean variance inflation factor (VIF) was found to be 1.32, which indicates the absence of the problem of multicollinearity in the fitted data. The resultant regression coefficients were as follows

The regression coefficient for investment capital acquired a positive sign as it was predicted; the results were significant at $P < 0.001$ level. This implies an increase in investment capital increases the value of an individual's wealth; and this value of individual wealth is the output variable, which measures the well-being of the beneficiaries. A unit increase in the capital increases the wealth status of the beneficiaries by 13.9 percent. Meanwhile business returns was found to have positive significant influence on the wealth status of the respondent, whereby a unit increase in earnings per month increases the wealth status of the individual by 30.9 percent. Household size acquired negative sign as it was hypothesized; revealing that a unit increase in the household size decreases the wealth status by 31.5 percent and thus the ultimate well-being of the individual. This means a large family utilizes more resources into consumption of non-durable goods instead of durable ones, which can add to wealth status thus affecting their economic wellbeing.

With respect to education, the results show that years of schooling acquired positive sign as it was hypothesized. The findings show further that a unit increase in education increases the wealth status of the individual entrepreneur by 2.9 percent. The regression coefficient was however not significantly different from zero indicating that education had no statistical influence on the wealth status of the respondent bearing the size of the business enterprises investigated. Probably business returns, investment capital, access to credit and household size are much more important variables that tend to affect the wealth status of the individual entrepreneur.

The regression coefficient for the membership dummy variable was hypothesized to have a positive effect. This implies that SACCOS members own more assets because of the acquisition of credit and thus stands in a better position for wealth accumulation than the non-members stand. The positive impact of credit on the beneficiary livelihood and wellbeing is supported by enormous literature (see for example Mavimbela *et al.*, 2010 and Neifeld, 1931).

Table 4: Economic benefit of SACCOS on the Well-being of the individuals
Dependent variable = Real wealth status (OLS Regression Results)

Explanatory variable	Coefficient	Std Error	t- value	P[Z >z]	Expected sign	VIF	1/VIF
Household size	-0.315	0.026	-12.23	0.000***	-	1.13	0.887
Years of schooling	0.029	0.021	1.31	0.189	+	1.15	0.868
D1member	0.822	0.118	6.96	0.000***	+	1.16	0.861
Business returns	0.309	0.052	5.96	0.000***	+	1.44	0.694
Invested capital	0.139	0.043	3.25	0.001***	+	1.71	0.584
Cons	10.217	0.636	16.06	0.000***			
Mean Variance Inflation Factor (VIF) = 1.32							
Durbin-Watson (DW) = 1.664							
F(5, 474) = 101.42							
Prob > F = 0.0000***							
R-square = 0.5169							
Adjusted R – square = 0.5118							
Number of observations = 480							

Source: own survey, 2012

Breusch – Pagan / Cook – Weisberg test for heteroskedasticity

Ho: constant variance

Variables: fitted values of real wealth at the initial phase of data collection

Chi 2 (1) = 1.88

Prob > chi 2 = 0.1698

Since the value of Prob > chi square is not significant there is no heteroskedasticity problem.

6. Conclusion

The study aimed at investigating the economic benefits of SACCOS on the well-being of the individual. The study has proven vital for lucrative investments and the overall wellbeing of the individuals. The available findings illustrate the capacity of SACCOS credit to expand the ongoing investment. This credit allows proper allocation of resources into new productive ventures by removing capital constraints. This paper reveals that access to SACCOS credit promotes the capacity of engaging in innovative investment opportunities, increase returns, and allows

ownership of assets sooner than otherwise and thereby contributing to increment in wealth status, which is a proxy for the well-being of the beneficiaries.

This implies that for the poor to be liberated from hardship there must be reasonable investment to combat the restrictions around them. The study reveals that acquisition of SACCOS credit is the backbone of the disadvantaged people as it helps them to overcome their liquidity constraints and promote the growth, expansion the firms, and the overall economic well-being of the individual economic agent.

The paper divulges the value of SACCOS to the economy in this way it has unlocked a window for acquiring investment capital for the development of the nation. As a policy implication, the study calls for the formation of more SACCOS where people can acquire capital for investment purposes and thereby contributing to the industrial economy; which is the focus of the Nation of Tanzania today. The worthiness of this study extends to the policy makers in particular, to conduct capacity-building seminars on the importance of joining SACCOS for improving the wellbeing of the people. The study calls for enhancing budget allocation by the Local Government Authorities into the Department of Cooperative to allow the Cooperative officers to disseminate the vital SACCOS for the well-being of the people. Extending the worth of participation in SACCOS to the society will help the majority to utilize the existing opportunities for income generation via accessing loans and thereby uplifting their economic status.

The current study did not cover all sources of finance such as formal credit, informal credit and other sources of semi-formal credit apart from SACCOS. This calls for another study on the economic benefits of formal and informal credit to the wealth status of the individual entrepreneur using time series data in order to capture the changes in the variables and the sources that cause them.

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Determinants of the Elderly's Social Protection Services Access in Kilimanjaro Region, Tanzania

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Abstract

Inaccessibility to Social Protection Services (SPSs) is a major concern for the majority of the elderly on the globe and developing countries, including Tanzania. This paper establishes the extent to which the elderly have access to SPSs and determines the factors that influence SPSs access to the elderly. A cross-sectional research design was used whereby 202 respondents aged 60 years and above were involved. Data were analysed using Ordinal Logistic Regression and content analysis for quantitative and qualitative data respectively. The indicators based on protective, preventive, promotive, and transformative dimensions were established to measure SPSs access levels among the elderly. The elderly in the study area were categorized at medium level of SPSs accessibility (87.1%). Ordinal logistic regression analysis results showed that SPSs access to the elderly's and their awareness on policy and rights, health insurance, and financial assistance were the important determinant factors that influence SPSs access to the elderly in the study area. The study recommends to the Government and Civil Society Organizations to devise intervention mechanisms for the elderly including the provision of health insurance services, cash transfers (universal pension), and enactment of law(s) that promote the elderly's welfare and eventually improve the delivery of SPSs in Tanzania.

Keywords: Social protection, determinants, social protection services, access, dimensions

1.0 Introduction

1.1 An Overview of the Elderly's Social Protection Services Accessibility in Tanzania

Inaccessibility to Social Protection Services (SPSs) among the elderly is a common phenomenon almost everywhere in the world. Such inaccessibility is considered as one of the critical challenges affecting the wellbeing of this category of people. According to studies (e.g. UN, 2011; Fredvang *et al.*, 2012), SPSs accessibility to the elderly is the ability of the elderly to get the required basic needs including food, health services, clothing, shelter, and income assistance from Social Institutions (SIs) as the service providers. Substantially, SPSs accessibility is a human rights issue as spelled out in various national and international policy instruments and it has become an important factor in improving the welfare of the people particularly the elderly in many developing countries (UN, 2011; Fredvang *et al.*, 2012; ILO, 2014). Any person in the age of sixty years and above is considered as old and aged person who requires adequate SPSs from SIs (URT, 2003), and it is a period when their body systems start to diminish in functionality, and become no longer active and able to withstand the different challenges of life (Bookman, 2011; WHO, 2015). Furthermore, the elderly are an important component of every country's

demographic strata since they play a vital role in providing information, knowledge, and experience. They are also the custodians of customs and traditions, advisors and child carers. In this regard, they need special attention of accessing SPSs like any other insecure vulnerable groups in order to improve their welfare (Laiglesia, 2011; ILO, 2014)

The concept of SPSs, as discussed by international organizations and some development practitioners such as the World Bank (WB) and United Nations (UN), has adopted broader approaches focusing on promotive, protective, preventive, and transformative dimensions. However, there are two types of SPSs namely contributory and social assistance. Meanwhile, the provision of SPSs to the elderly in this paper is essentially advocated as a distinguished universal concern towards improving the marginalized groups including the elderly through promotive (promoting opportunities and increase in income and capabilities). Others include preventive (preventing poverty from occurring/mitigating risks in order to avoid shocks), protective (recovery from shocks), and transformative (focusing on the rights and inclusion) measures both in the developed and developing countries (Bloom, 2011; UN, 2015; Bandita, 2017). Meanwhile, this is the most relevant conceptual approach to SPSs provisions to the marginalised groups, as it encompasses the aspects of equity, empowerment, economic, social and cultural rights (Devereux and Sabates-Wheeler, 2004; Harvey, 2009; Bandita, 2017). However, one of the key challenges in addressing SPSs inaccessibility among the elderly has been the designing SPSs interventions that are supportive to sustainable elderly's wellbeing. Thus, SPSs inaccessibility concerns have frequently been voiced in order to address the basic needs of the elderly (Laiglesia, 2011; UN, 2011; ILO, 2014).

The provision of adequate SPSs to the elderly is a shared responsibility of Social Institutions (SIs) including the family, Government and voluntary agencies (URT, 2003; Devereux and Wheeler, 2008; Bloom, 2011; Bandita, 2017). In this context, the SIs are considered as contribution based instruments that mitigate the risk for all social groups, including the elderly, by improving their welfare (Babajanian, 2013). Currently, the Tanzania Government and Non-Government institutions have made several initiatives in providing SPSs to the elderly. These foundational efforts include formulation of the 2003 National Ageing Policy (NAP), establishment of the elderly's free health services, and the establishment of the elderly's Department in the Ministry of Community Development, Gender, the Elderly, and Children. others include, elderly identification cards, fighting chronicle diseases such as Malaria through the provision of mosquito nets, food subsistence and consumption transfers, financial assistance (e.g. Tanzania Social Action Fund - TASAF), and the establishment of care centres for the elderly (URT, 2003; URT, 2005; URT, 2010).

Despite the available initiatives in improving the welfare of the elderly, SPSs inaccessibility among the elderly remains highly prevalent (Yaffe, 2012; Saunders *et al.* 2017). For example, in Tanzania, about 96 percent of the elderly aged 60 years and above are inadequately accessing SPSs such as food, health, and cash assistance (URT, 2003; ILO, 2008; Spitzer *et al.*, 2009; URT and HAI, 2010; UN, 2011;;). Consequently, the majority of the elderly continue to live a risky life of abject poverty, which is devoid of SPSs. According to scholars (e.g., Spitzer *et al.*, 2009; Mboghoina *et al.*, 2010; Tobias, 2014; Kessy, 2014)), SPSs inaccessibility among the elderly has serious and alarming implications in terms of their healthcare, income and food welfare. These are the concerns, which need to be addressed as a matter of urgency in order to protect,

prevent, and promote the elderly's welfare (Aboderin and Gachuhi, 2007; Oduro, 2010).

Studies on elderly's accessibility to social protection services in developing countries, particularly in Tanzania are scanty. Specifically, little is known on the factors that determine SPSs access to the elderly, and the extent to which SPSs interventions in terms of protective, preventive, promotive, and transformative dimensions have enhanced the elderly's SPSs provisions in response to their basic needs against SPSs inaccessibility.

Therefore, this paper establishes the extent to which SPSs from social institutions are made accessible to the elderly in Kilimanjaro Region. Specifically, the study (i) examined the levels of SPSs access to the elderly, (ii) assessed the extent of the priority dimensions which SIs mainly use in delivering services to the elderly and (iii) analysed the determinant factors that influence the elderly access to SPSs.

1.2 Conceptual Framework

The conceptual framework of this study is adapted from Social Risk Management (SRM) by the World Bank and ILO frameworks (World Bank, 2000, ILO, Devereux and Sabates-Wheeler, 2004). The framework is essentially an analytical tool that identifies alternative strategies and arrangements of dealing with the risks for groups with security concerns in the face of vulnerabilities and contingencies by focusing on four interrelated dimensions namely, SPSs dimensions (protective, preventive, promotive and transformative), social institutions (service providers), legal frameworks and determinant factors for SPSs access. This framework is linked to the elderly as a special group that need special attention of being provided with SPSs. The attributes in the SRM are influencing one another in order to improve the welfare of the elderly including assurance of SPSs (food, health services, income etc.).

Beside this framework, the study is also aligned with the Elderly Multi- Multidimensional theory developed by Doron (2003). Doron assumes that, effectiveness of SPSs access to the elderly is based on the existing fundamental constitutional and legal principles where the rights of the elderly are defended and grounded in law. Based on these theoretical assumptions, this study assumes that the achievement of sustainable elderly's wellbeing depends on the existing SIs, SPSs dimensions, and determinant factors (awareness on policy and rights, health insurance, and financial assistance and socio-demographic variables including area of residence, literacy status, and marital status) and the nature of the legal framework. In the context of this study, SPSs access to the elderly is considered to happen when the elderly realize their legal rights through awareness rising, access to information, and the provision of health insurance and financial assistance from social institutions.

2.0 Methodology

2.1 Description of the study area

This study was conducted in Moshi District Council (MDC) and Moshi Municipality (MM), Kilimanjaro Region in Tanzania. The region was selected because it has the highest (9.7%) proportion of the elderly population compared to the national average of 5.6 percent. According to literature (i.e. URT, 2012; NBS, 2013; URT, 2014; URT, 2017), MDC has the elderly population of 28.4 percent, Rombo (15.9%), Siha (7.0%), Hai (13.0%), Mwangi (8.0%), Same

(16.4%) and MM (11.2%). Two districts (MM and MDC) were selected randomly to represent other districts in Kilimanjaro region.

2.2 Research design

In order to collect multiple cases in a single point of time the study employed a cross-sectional research design. The design is considered as appropriate as it is useful for description purposes and for the determination of the relationship between variables. Further, the design allows the collection of both qualitative and quantitative data for two or more variables, which are then examined to detect patterns of associations (Bryman, 2004; Rwegoshora, 2006). Four wards and eight villages were selected for the study. Two wards and four villages were selected purposely from each district based on the list of the elderly provided by the District Government Officials in the respective study areas (Table 1).

Table 1: Distribution of the villages/streets selected for the study

District	Division	Wards	Villages/Streets	NES
Moshi Municipality (MM)	Moshi Mashariki	Kiusa	Kiusa Line	24
			Kiusa Sokoni	24
		Bomambuzi	Kanisani	24
			Kilimani	26
Sub Total (MM)				98
Moshi District Council(MDC)	Vunjo Mashariki	Mwika Kusini	Mawanjeni	26
			Kiruweni	26
		Marangu	Samanga	26
Sub Total (MDC)				104
GRAND TOTAL				202

Note: NES= Number of elderly selected

2.3 Sample size determination

The sampling unit for this study was the elderly aged 60 years and above with different marital statuses. The elderly men and women were the respondents because SPSs provision is a non-gender biased issue. Thus, SPSs inaccessibility is likely to affect both the elderly men and women if not addressed by SIs. For the purpose of this study, all elderly respondents were regarded as SPSs beneficiaries regardless of their gender, marital status, education, and occupation. The sampling frame was a list of names of all the elderly registered in the respective districts. Simple random sampling technique using lottery method was used to obtain sample size of 202 respondents where 98 and 104 were obtained from Moshi Municipality and Moshi District Council respectively.

2.4 Data Collection

Qualitative and quantitative methods were employed to collect data. The combination was useful as it provides triangulation of information (Creswell, 2013). A structured questionnaire with close and open-ended questions was used to collect quantitative data. The tool was self-administered to the elderly since they were the target or primary group who had information on social protection services. The most important information collected through the questionnaire was the social demographic characteristics and the social dimensions. An interview guide was used to gather information on the services provided and the mechanisms used. Data were collected from 36 key informants including 10 representatives from the elderly’s households, 4 religious leaders, 2 Tanzania Social Action Fund (TASAF) officers, 4 District Community

Development Officers, 4 elderly's council leaders, 4 Ward Executive Officers, and 8 Village Executive Officers/Street leaders). These are social protection service providers. A focus group interview guide was used to gather information from eight (8) FGDs, which involved 6 to 12 people (6 men and 6 women respectively) per group for qualitative data collection. FGD, KII and in-depth discussion helped the researcher to explore practical experience of the elderly's SPSS accessibility status.

2.5 Data Analysis

Qualitative data were analysed using content analysis whereby SPSS access to the elderly, their levels and factors that influence SPSS access to the elderly were transcribed and categorised based on the study objectives. Statistical Package for the Social Sciences (SPSS) was used to analyse data. Quantitative data were analysed descriptively and inferentially. Descriptive statistics such as frequencies, percentages, averages, and standard deviations were used to describe socio-economic characteristics of the elderly. Ordinal logistic regression model was used to determine the factors that influence SPSS access to the elderly. SPSS accessibility to the elderly was established based on protective, preventive, promotive, and transformative dimensions as the potential benchmark for social protection phenomenon (Doron, 2003; Devereux *et al.*, 2004). Furthermore, the indicators for each dimension were set and agreed upon during FGDs as adopted from the 2003 Tanzania National Ageing Policy to reflect the context of SPSS accessibility to the elderly in the study area.

The established indicators in the protective domain were food, shelter, healthcare, bed and mattress, mosquito net, clothes, and care/respect. In the preventive domain, the indicators were health insurance, consultation and medication, health check-ups, and transport to the hospital. The promotive indicators included cash transfer, financial services, entrepreneurship knowledge, and knowledge on the rights of the elderly. Transformative indicators included awareness on policy and the rights of the elderly, representation in decision-making organs, participation, respect, and access to information (URT, 2003). Each response to a given indicator was assigned a score of either zero (0) for "do not have access" or 1 for "having access". The sub-total score values for indicators obtained from the four dimensions were summed up to get the grand total scores for each respondent. Finally, the grand total scores were categorized into three levels score namely; 0 = Low; 1 = Moderate and, 2 = High. This classification of measuring and establishing accessibility levels among the elderly is well documented in many literature sources including Meena *et al.*, (2012) and Nzali (2016) as follows:

Low (Below Mean-Standard Deviation (SD); Medium (Mean – SD to Mean + SD); and High (Above Mean + SD). The categories for the elderly status were summarized as Low = 0 – 3, Moderate = 4 - 10; and High = 11 - Above. These categories were established to measure the extent of accessibility to SPSS by the elderly as a dependent variable. The normality test was conducted to determine whether the dependent variable was normally distributed. The results on Shapiro-Wilk Test showed that there was a significant difference at $p < 0.05$. This implies that the dependent variable was not normally distributed. Thus, the model fell under logistic non-linear function.

The determinant factors that influence SPSS access to the elderly were established using ordinal logistic regression model. The model was relevant because the dependent variable (Y) was classified in terms of ordered access to social protection services levels (low, medium, and high)

which assisted to establish the relationship between the dependent and independent variables, which are the determinants of the SPSs access to the elderly. Ordinal logistic regression is appropriate when the outcome is at ordinal level with more than two categories (Agresti and Finlay, 2009). The ordinal logistic regression equation according to Agresti and Finlay (2009) is expressed as:

$$\text{Logit}[p(x)] = Y = \log \left[\frac{p(x)}{1 - p(x)} \right] = a + \beta_1 \chi_1 + \beta_2 \chi_2 + \dots + \beta_n \chi_n + \varepsilon \dots \dots \dots (1)$$

Where:

Y= Access to social protection services: 0 = Low access, 1 = Moderate access, 2 = High access. This model was used to estimate the influence of the hypothesized explanatory variables on the chances the elderly were highly accessing social protection services. The independent variables (X_is) were thirteen as shown in Table 2. The independent variables included dummy and continuous variables. The dependent variable (Y = 0, 1, or 2) for low, moderate and high access respectively was regressed on the independent variables to examine the influence of each independent variable termed as factors determining access to social protection services by the elderly.

Table 2: Definition of the independent variables of the model

	Explanatory variables	Definition	Expected signs
X ₁	Residence of the elderly	1= residing in rural area; 0 = reside in urban area	+
X ₂	Age of the elderly in years	Years of living	+
X ₃	Sex of the elderly	Gender: 1 = Male; 0 = Female	+
X ₄	Literacy status	1= able to read/write; 0= unable to read/write	+
X ₅	Marital status	1= married; 0 = otherwise	+
X ₆	Size of the household	Total number of people residing in the household	+
X ₇	Income from agricultural produces	1= access; 0 = otherwise	+
X ₈	Income from selling h/h items	1= access; 0 = otherwise	+
X ₉	Remittance from children/ relatives	1= access; 0 = otherwise	+
X ₁₀	Health Insurance	1= access; 0 = otherwise	+
X ₁₁	Awareness on elderly rights	1= Aware; 0 = not aware	+
X ₁₂	Access to information	1= access; 0 = otherwise	+
X ₁₃	Cash transfer from TASAF	1= access; 0 = otherwise	+

3.0 Results and Discussion

3.1 Descriptive statistics

Descriptive statistics of independent variables showed that the age of the elderly ranged from 61 to 105 years; the total number of people residing in the household ranged from 1 to 12 implying that some households had family members who could provide care for the elderly (Table 3). It is evident that, the higher the number of people in the household the higher the reliability of the care to the elderly. This is because members can collectively contribute to income raising, ranging from agriculture to sales of household items. The income of the elderly from agricultural sales was between 0 and 1 000 000.00 TZS; remittance from children/relatives was between 10 000.00 and 500 000.00 TZS. Cash transfer from TASAF was between 0 and 1 000 000.00 TZS and income from selling personal household assets and goods such as land, clothing, furnishing and furniture was between 0 and 8 000 000.00.

Table 3: Descriptive statistics of quantitative variables

Variables	Min	Max	Range	Mean	Standard deviation
Age of the elderly	61	105	44	74.57	10.29
Size of the household	1	12	11	4.31	2.21
Income from agricultural sales	0	1 000 000	100 000	26 905.94	28467.59
Remittance from children/relative	10 000	500 000	490 000	66 014.85	108299.08
Financial assistance(Cash transfer from TASAF)	0	1 000 000	1 000 000	274 504.95	330398.53
Income from selling of h/h items	0	800 000	800 000	204 673.27	247666.25

Table 4 shows the contribution of marital status, literacy, gender, and areas of residence towards accessibility of SPSs by the elderly. The findings indicate that, married couples were more secured than were the unmarried and the more literate the elderly were the more aware of their rights and privileges. On the area of residence, 104 (51.5%) of the elderly came from Moshi Rural while 98 (48.5%) of the elderly came from Moshi Municipality. On gender, 112 (55.4%) were males and 90 (44.6%) were females. The majority 114 (71.3%) of the elderly involved in the study were able to read and write while 28.7 percent were not. It was also found that 139 (68.8%) of the elderly interviewed were married while only 63 (31.2%) were not married/divorced/widows or widowers. The majority 122 (60.4%) of the elderly in the study area had health insurance cards while only 80 (39.6%) of the elderly had no cards. On awareness of policy and elderly rights, the majority 148 (73.3%) of the elderly were not aware of the elderly policies and their basic rights while very few 54 (26.7%) were aware of their basic rights.

Table 4: Descriptive statistics of the dummy variables

Variables	Frequency		Percent	
	Male/Yes/ married/Rural /able to read/write	No/otherwise/ Female/Urban/ Unable to read/write/ not married	Male/Yes/ married/Rur al/ able to read/write	No/otherwise/F emale/Urban/ Unable to read/write/ not married
Area of Residence	104	98	51.5	48.5
Sex of the elderly	112	90	55.4	44.6
Literacy status (ability to read and write)	144	58	71.3	28.7
Marital status	139	63	68.8	31.2
Health insurances	122	80	60.4	39.6
Awareness on policy/right	54	148	26.7	73.3
Access to information	41	161	20.3	79.7

While information is regarded to be a powerful tool for the elderly in accessing social protection services, the majority of the elderly 161 (79.7%) were not accessing basic and relevant information that could have assisted them in demanding for their rights, only 41 (20.3%) of the sampled elderly were accessing information regarding elderly issues (Table 4).

3.2 The levels of accessibility of Social Protection Services (SPSs) by the elderly

Descriptive statistics of the dependent variable, which was access to SPSs by the elderly, was carried out to determine the proportion of the elderly who had access to SPSs in the study area. The results in Table 5 indicate that the elderly who had moderate access to SPSs were 81.7 percent out of 202 total respondents interviewed. They also show that those who had low and high access to SPSs were 5.9 and 12.4 percent respectively. The differences in SPSs accessibility levels could be a result of many factors including the SPSs provided by the SIs (government, non-governmental organisations and the family) in the study area. Likewise, the region has stronger health systems and socio-economic development than the regions in western and north western Tanzania (URT, 2012; URT, 2013; Kumalija *et al.*, 2015). This finding indicates that the presence of various SPSs including health systems and socio-economic strength are an important determinant of the elderly's SPSs accessibility. Thus, according to Kumalija *et al.*, (2015), SPSs accessibility levels (differences) are the result of strong health systems in terms of health workforce and infrastructure and it is largely associated with higher levels of socioeconomic development in the study area.

Table 5: Categorical scores of the elderly's access to SPSs (n = 202)

Levels of SPA	SPA range score	Frequency	Percent
Low	≤ 3.0	12	5.9
Moderate	4.0 – 10.0	165	81.7
High	>11	25	12.4
Total		202	100.0

Furthermore, it is important to note that, although the elderly were found to have moderate access level to SPSs in the study area, still the general access of SPSs to the elderly at the national level is not promising only 4.5 percent of the elderly are adequately accessing SPSs from SIs (URT and HAI, 2010).

3.3 The SPSs Dimensions and service delivery accessibility among the elderly

In the course of ensuring the wellbeing of the elderly, the Social Institutions (SIs) act as the vehicle that transfer SPSs to the elderly through four roles, dimensionally they are; protective, preventive, promotive, and transformative (Doron, 2003; Deverex and Sabates- Wheeler, 2004). These dimensions as used by SIs in delivering services to the elderly are presented in Table 6. The results indicate that SPSs accessibility to the elderly were protective (57%), transformative (34%), preventive (24%), and promotive (16%).

Table 6: The elderly's response total scores in each SPSs dimension (n = 202)

Social protection dimension	Total Scores	Average scores per respondents	Total scores for indicators	Percentage	Ranking
Protective	721	4.1	7	57	1
Transformative	350	1.7	5	34	2
Preventive	213	1.0	4	25	3
Promotive	115	1.0	6	16	4

These findings imply that SPSs were highly accessible by the elderly through protective measures as opposed to other dimensions (Table 6). This is because, elderly protective services from SIs necessitates a practical multifaceted approach that incorporate very basic needs of the

elderly (health, food, shelter, income and legal matters) that cannot be addressed in isolation (Shrivastava *et al.*, 2013) as opposed to other dimensions which are biased to limited elderly's services. It is important to note that, the elderly population tends to have a higher prevalence of chronic diseases, physical disabilities and other co-morbidities. Therefore, these results imply that the elderly require SIs that can be able to design harmonized social protection strategies that are protective, preventive, promotive, and transformative in nature for achieving the best outcome when addressing the elderly's challenges (Nzali, 2017; Mwakajwanga, 2011; Babajanian *et al.*, 2012; World Bank, 2012; Kessy, 2014).

3.4 Factors influencing elderly's access to Social Protection Services

The ordered logistic regression analysis was estimated using maximum likelihood estimation. The iterative procedure was used whereas the model converged at iteration 6 of log-likelihood of -70.972164, which fitted the model (Table 7). The likelihood ratio chi-square was 97.05, whereas the model was statistically significant at $p < 0.01$ significant level. The Mcfadden pseudo R-Squared of 40.61 percent shows a proper overall capability of the model to provide accurate predictors for the dependent variable (Table 7).

To capture the factors influencing the elderly's access to social protection, the dependent variable ($Y =$ Access to social protection services: 0 = Low access, 1 = Medium access and 2 = High access) was regressed on independent variables. These specifically involved socio-demographic characteristics (age, marital status, literacy level, residence location, and the size of the household), socio-economic factors (selling of household items, remittance from children/family, selling of agricultural produces), and institutional factors (health insurance, awareness on elderly rights, access to information and financial assistant - cash assistance from TASAF) as depicted in Table 2.

The results of the ordered logistic regression in Table 7 show that some of the socio-demographic variables including area of residence were more likely related to the elderly's accessibility to social protection services and was significant at $p < 0.05$ significance level. This finding implies that the elderly residing in rural areas were more likely to access SPSs such as food and income from their family/relatives as opposed to the elderly in urban areas. This is because there are more opportunities at family levels (secured subsistence farming) including farms, assets and livestock keeping, and nonfarm occupations among the family members in rural areas as opposed to those living in the urban areas. This information is supplemented by qualitative information, which was collected during focus group discussions, one of the elderly respondents had this to say:

“There is plenty of food in rural areas.....as you can see... majority of us are still involved in farming and non-farm occupations such as selling of farm and livestock products. You cannot do all these if you are in urban areas and not in rural areas” (Elderly FGD participant, Mawanjeni Village, 2016).

The above extract shows the relationship between the elderly's area of residence and accessibility to SPSs from social institutions. These study findings are supported by the findings reported in a study by other scholars (e.g. Forrester, 2000; HAI, 2008; Nkwarir, 2010) who revealed that the elderly in rural areas in many countries including Tanzania and Cameroon are

still active and are engaged in a range of economic activities at very old ages. Therefore elderly are able to obtain their basic needs such as food and health services easily.

Moreover, literacy status was also more likely related to the elderly’s accessibility to social protection services and was significant at $p < 0.1$ significance level (Table 7). These findings imply that literacy status is associated with increased probability of access to services by the elderly. Literacy here means the ability to read and write that can assist the elderly to build awareness of the rights and privileges. The findings imply further that the elderly who have better understanding of different rights pertinent to their welfare are more likely to access SPSs from social institutions than those who are illiterate. These findings are consistent with what has been reported in literature (e.g. Spitzer *et al.*, 2009; Nkwarir, 2010; URT, HAI, 2010) who found that literacy status is an important factor that influences the livelihoods of the elderly as it enables them to meet their basic needs and improve their socio-economic security.

Table 7: Factors Influencing Elderly’s Access to Social Protection Services (N = 202)

Explanatory Variables	Coefficients	Std. Error	Z-Score
Residence location	1.943582	0.668	2.91**
Age of the elderly	-0.038500	0.024	-1.59
Sex of the elderly	-1.075976	0.520	-2.07**
Literacy status (Ability to read)	1.013962	0.575	1.76 *
Marital status	0.089718	0.516	0.17
Size of household	0.060840	0.100	0.60
Health Insurance	1.515142	0.582	2.60 **
Awareness on elderly’s policy/right	2.149573	0.635	3.38 **
Access to elderly’s information	1.003763	0.630	1.59
Selling of h/h items	-0.027117	0.522	-0.05
Remittances from children/family	0.420996	0.487	0.86
Selling of agricultural produces (by household/elderly)	-1.17361	1.494	-0.79
Financial assistance (e.g. TASAF cash transfer)	2.302986	0.695	3.31**
Threshold Parameters			
/ cut1 -4.846489	2.640444	10.02166	0.3286858
/cut2 3.107304	2.631761	-2.050853	8.265461

Number of observations = 202, LR $\chi^2(13) = 97.05$, Prob > $\chi^2 = 0.000$, Log likelihood = -70.972164, Pseudo $R^2 = 0.4061$, **statistically significant at $P < 0.05$, * statistically significant at $P < 0.1$

However, sex of the elderly was less likely related and statistically significant at $p < 0.05$ to the elderly’s SPSs accessibility (Table 7). This finding also implies that sex is associated with decreased probability of accessing SPSs by the elderly. In this study, sex was associated with SPSs and that males had decreased access to SPPs as opposed to females among the elderly. This is because, naturally, elderly male are superior to elderly female. They are always bold enough and not in a position of exposing their difficulties unlike females. Nevertheless, according to UN (2015), sex should not be an element that hinders the elderly from accessing SPSs. At old age, both men and women have an equal chance of accessing SPSs, thus in providing SPSs, sexual category is a factor that ought to be taken into consideration when addressing specific gender basic needs.

Three variables namely awareness on the elderly’s policy and rights, financial assistance/cash transfer from Tanzania Social Action Fund (TASAF), and health insurance as an institutional factors were more likely related to the elderly’s accessibility to social protection services and were statistically significant at $p < 0.05$ significance level (Table 7). This finding implies that

awareness among the elderly on their rights is associated with increased probability of getting access to social protection services. As awareness of information on the elderly rights increases, the probability of the elderly to access SPSs also increases and thereby enabling them to meet their basic needs which are among the dimension of SPSs. The importance for social institutions in creating awareness on policy and rights among the elderly was further affirmed by the qualitative data collected from focus group discussions as the extract below indicates:

“We know nothing about the elderly’s rights. That’s why we do not know where to start when it comes to demanding our rights” (Elderly FGD Participant, Kiusa Sokoni Street, 2016).

These study findings are similar to the reported by Vellakkal (2017) that awareness generation among the elderly has a great influence on access to the institutional care and services that promote the uptake of institutional service delivery to the elderly.

Likewise, the study results (Table 7) show that health insurance among the elderly was more likely related to the elderly’s access to SPSs and was statistically significant at $p < 0.05$ significance level. These findings suggest that the elderly with insurance cards from the National Health Insurance Fund (NHIF) and Community Health Fund (CHF) obtained through their family members were likely to access health services. Therefore, health insurance is very important in improving the health status of the elderly. This finding was also confirmed by the elderly in the FGDs in Samanga village who pointed out that:

“.....health service for the elderly is a challenge.... if one doesn’t have an NHIF card; it is not easy to access health services from government or private hospitals” (Elderly FGD participant, Samanga Street, 2016).

This finding is consistent with what has been reported in literature (WHO, 2008; Nkwarir, 2010) that elderly’s access to health insurance is a vital factor and a social determinant of their health status.

Financial assistance (e.g. TASAF cash transfer) was also more likely related to the elderly’s access to SPSs and was significant at $p < 0.05$ significance level (Table 7). This implies that cash transfer is associated with increased probability of accessing SPSs by the elderly. This suggests that, if the elderly are receiving cash transfer from SIs such as those from TASAF and pension money from state funds for those who are eligible, are likely to increase the elderly’s level of income and hence improve their well-being more than those without cash transfers. This finding underlines the importance of cash transfer from SIs in improving the welfare of the elderly. The findings correspond with what is reported in literature (Mathiu & Mathiu, 2012; Kessy, 2014; Nangia, 2015) that inclusion of the elderly in some financial security interventions may promote the elderly’s access to health care, food, and shelter and hence improve their welfare.

Furthermore, other variables such as age of the respondents, marital status, and size of the household, income from selling agricultural produce, and income from selling household items were not statistically significant neither were they positively or negatively related to the SPSs

access to the elderly in Moshi Municipality and Moshi District Council, Kilimanjaro Region Tanzania (Table 7).

Moreover, since the age of the respondent had a negative statistically significant correlation at $p < 0.1$ with the elderly's access to SPSs; this implies that as the elderly's age increases, SPSs for the elderly decreases. The findings in this study revealed that the elderly had low access to SPSs on promotive dimension due to their ageing status, as they are inactive and incapable of performing manual works. Therefore, some service providers may not be willing to invest in empowering the elderly through capacity building programmes. In this regard, the elderly are subjected to social exclusion and discrimination in accessing SPSs. According to World Bank, (2012) and Babajanian *et al.*, (2012), inclusion of the elderly in promotive interventions such as cash transfer is significant as it may increase the elderly's financial security and enable them to access various SPSs including health care, food, and shelter.

The results in Table 7 also show that household size was not a significant predictor variable in influencing elderly's access to service delivery. According to scholars (e.g. Hyeladi, 2014; Alfred *et al.*, 2017), it is obvious that such elderly's households might be more likely unable to provide high-class service delivery such as food to the elderly. Some studies (e.g. Sekhampu, 2013; Hyeladi *et al.*, 2014) have found that the larger the family size, the poorer the household. Other variables such as marital status, remittances from family members, income from selling agricultural produce, and income from selling household items were not statistically significant; neither were they positively or negatively related to the elderly's access to SPSs (Table 7). According to studies (e.g. Bookman and Kimbrel, 2011; ILO, 2014), remittance from children/family is not a sufficient factor to influence the elderly's SPSs accessibility; this is because family members are mobile searching for jobs and business opportunities. As a result, majority of the elderly are not only abandoned, but also lose much of their family support (HAI, 2008; Bloom *et al.*, 2011).

Furthermore, marital status in this study was not a significant factor that influenced elderly's access to SPSs. Although living with a spouse or in any form of marital union is very important for the elderly survival (Spitzer *et al.*, 2009; Kessy, 2014), no correlation was found between marital status and SPSs accessibility. It is important to note that SPSs accessibility is a significant factor for human survival. According to studies (i.e., Rogers *et al.*, 2000; Cattell, 2005; URT and HAI, 2010), old age poverty for both men and women is highly related to lack of access to SPSs and not marital status, especially if one lacks adequate means of SPSs.

Finally, income from selling agricultural produce and household items such as clothing, furnishing, and furniture was not statistically significant neither was it positively or negatively related to the SPSs access to the elderly in the study area. This is because agricultural activities are characterized by subsistence harvesting for the smallholder farmers. Moreover, furniture and other household assets do not have reasonable market value that can support the elderly's survival. This means that the income derived from sales may not be sufficient to sustain their livelihood while income from selling agricultural products and household assets is not a valid means of alternative survival for the elderly's (Devereux *et al.*, 2008; Nyasha *et al.*, 2013; URT 2014).

4.0 Conclusions and Recommendations

Based on the findings and discussion from this paper it is concluded that majority of the elderly in the study area had attained medium level of SPSs access. Generally, SPSs access to the elderly's is influenced by various determinants including elderly's residence, literacy status, awareness on elderly policy and rights, financial assistance and health insurance as the reflection of the protective, preventive, promotive and transformative SPSs dimensions. This implies that, improved welfare of the elderly's necessitates a multifaceted approach when addressing their challenges. Therefore, based on conclusions of this paper it is recommended that, Social Institutions including the Ministry of Community Development, Gender, Women, Elderly and children and Civil Society Organizations must work together to improve the welfare of the elderly. This should be done by enabling SPSs to be accessible to the elderly and by considering most important determinant factors that influence SPSs accessibility levels including provision of health insurance services, cash transfers (universal pension), and awareness raising of policy/rights to the elderly in order to address their immediate needs. Finally, there is a need for the social institutions (governmental and non-governmental agencies) to introduce systems or mechanisms of SPSs that would address protective, preventive, promotive, and transformative basic needs of the elderly in Tanzania.

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Socio-Economic Determinants of Household Participation in Out-growers Scheme and Investor Farm- Employment in Kilombero Valley, Tanzania

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Abstract

Household participation in the out-grower scheme and investor farm employment has the potential of improving livelihoods of participating households. However, scientific debates on the socio-economic determinants of households' participation in the out-growers scheme and investor farm employment have not been conclusive and the number of out-growers dropping out of out-grower scheme remains significant. This paper aims at examining the socio-economic determinants of household participation in the out-growers and investor farm employment. The paper adopted a cross-sectional research design whereby exploratory sequential research strategy was adopted. About 376 respondents were involved in the survey. Qualitative data were collected through checklist of questions were analysed using content analysis while quantitative data were analysed using descriptive and inferential statistical analysis. The results indicate that demographic variables (older age and household headship), group membership, access to credit, distance from household premises to investor and asset ownership were important predictors of household participation in the out-grower scheme ($P < 0.05$). The Results indicate further that demographic variables (younger age, household headship and household head marital status), household asset, household income and land size significantly influenced household participation in the investor farm employment ($P < 0.05$). Therefore, household participation in the out-grower scheme favour youth household head, Male-Headed Household (MHHs), household in groups, household with higher land size, HHs with less access to credit and household with fewer assets. Participation in investor farm employment favours those households with older age, FHHs, low income, few assets, married, and households with large land size. It is recommended that there is a need for providing sugarcane technical training to out-growers. Also understanding of the factors that affect household to participate in the out-grower scheme and investor farm employment and how they relate to participation decision should be an important part in designing interventions aimed at improving production uptake

Keywords: *out-growers scheme, investor farm -employment*

1.0 Introduction

The significance of large-scale agricultural investment that integrates household in an out-grower scheme and investor farm employment to rural household's livelihood cannot be over-emphasized. Different large-scale agricultural investment models including plantation modes and out-grower schemes provide different benefits that could support household livelihoods. According to Herrmann (2017), development of large-scale agricultural investments is considered by many as a major threat to the livelihoods of smallholder farmers. However, others argue that development of large-scale agricultural investment is an opportunity to them. In addition, out-grower scheme is increasingly being recognized as the best farming model in

addressing production and marketing of agricultural commodities in developing countries (Oya, 2012). Out-grower scheme involves large-scale production and processing facilities, which are surrounded by out-growers farm with wide ranges of sizes (Rocca, 2016). Investor farm employment in this study refers to employment of the household member in the investor farm.

Some of the analysts suggest that out-grower scheme which is considered as an inclusive farming model improves access to markets, credit and technology, employment, provision of agricultural extension, indirectly empowers women and youths, and develops a successful commercial culture (Singh 2006; Prowse, 2012; Glover and Kusterer, 2016). Inclusiveness of out-grower scheme implies integration of smallholder farmers into the markets with underlying principles that there are mutual benefits for the participating household and investor that ultimately needs to result in moving households out of poverty and improving food security (FAO, 2015). On the other hand, plantation farming model is reported to generate relatively better-paid employment for permanent skilled labourers (Hakizimana *et al.*, 2017).

There are widespread concerns that out-grower scheme and investor farm employment benefit more men than it does to women because of the differences in terms of socio-economic characteristics such as access to credit, extension services, training, land, participation in social groups and income and asset endowment (Dancer and Sulle, 2015). Previous experiences in Sub-Saharan Africa including Tanzania show that women are losing out from large-scale agricultural investments. Studies (e.g. Daley, 2011; FAO, 2011; Mutopo *et al.*, 2015; UNCTAD, 2015; Sexsmith, 2017) reported that women are less likely to work for wages as large-scale agricultural investments have produced gender division of labour. Similar findings are reported in a study in Zambia, which indicates that men were contract holders in sugarcane out-grower scheme and sugar dividends were captured by men, while women were involved with the production of food crops for home consumption (Hall *et al.* 2015). The study also shows that labour opportunities in the scheme were seasonal, short term, and with most of the seasonal workers being men. Few women had employment opportunities and these were concentrated in casual jobs such as weeding, planting while men dominated irrigation, cane cutting, fertilizer application, field supervision, and truck driving. Studies in Tanzania (e.g. Locher and Sulle, 2013; Dancer and Sulle, 2015) show that gender differentiated between young male cane cutters and weeders majority of whom were women and older men. A comparison between out-grower scheme and plantation model shows that in the latter model overall women have lower pay and less job security than men (Renzaho *et. al.*, 2017) do.

Considering that women are not homogenous group, they are differentiated in terms of how they are constrained to the participation in the out-grower schemes and investor farm employment. Poor women with limited livelihood options participate more in investor farm employment (Smalley, 2013). Studies (e.g. Oya 2013; Rocca, 2016) found a strong relationship between labour market participation and female divorce or widowhood. There was a correlation between divorced and widowed status of women and opportunities for access to better quality employment. Married women were more affected in their participation in the scheme and access to employment, as they were concentrated more in food crop production and domestic work (Rocca, 2016). Women lack tenure security and this inhibits their access to resources and constitute a barrier to the entry into out-growing. Gender ideologies where women's farm work is regarded as reproductive labour are also contributing to the low proportion of registered

women as out-growers in some areas (Renzaho *et al*, 2017). Studies (e.g. Tsikata and Yaro, 2013) also show that large-scale agricultural investment creates employment opportunities for women, although women dominate only casual positions with lower remuneration. Other studies (e.g. Dolan and Sorby, 2003) Singh (2003) Maertens and Swinnen, 2009) in Kenya, Uganda, Zimbabwe, Columbia, and Ecuador reported that women occupied at least 50 percent of the employment in flowers, canola, poultry and vanilla investments. In addition, White and White (2012) assert that in oil palm plantation in Northern Ghana, women had greater compensated productive work since they dominated the daily workforce.

It is evident from the reviewed literature that studies on socio-economic determinants of household participation in out-grower scheme and investor farm employment are inconclusive and the number of out-growers dropping from out-grower scheme remains significant. This is because some authors contend that the household socio-economic determinants of household participation in the out-grower scheme and investor farm employment favour male as opposed to female and are context specific and depends on the nature of the contract as well as the type of enterprise in question (FAO, 2011). In this respect, the socio-economic determinants of household participation in the out-growers scheme and investor farm employment cannot be generalized based on the reviewed literature. A thorough knowledge on the socio-economic determinants of rural household participation in the out-grower scheme and investor farm employment is pertinent in informing out-grower scheme and investor farm employment programming and targeting. This study specifically aimed at (i) analysing socio-economic determinants of household participation in out-grower scheme, and (ii) analysing socio-economic determinants of household participation in the investor farm employment in Kilombero Valley.

2.0 Methodology

The study was conducted in Kilombero Valley in Kilombero District. The District was chosen because of its rank in the numbers of out-growers in Tanzania. Four villages were selected purposively: two villages around Kilombero Sugar Company Limited (KSCL) were selected based on two criteria, namely the number of out-growers, and the presence of out-grower associations and households working for KSCL. The other two villages were selected because of having households working with Kilombero Plantation Limited (KPL). The villages selected were Msolwa Ujamaa, Sanje, Mchombe, and Mngeta.

The study adopted a cross-sectional research design whereby data were collected once using a pre-structured questionnaire and checklist of questions. The design was thought to be suitable for the current study because it allows the collection of data, which can be used to determine the relationship between variables. The sampling unit was a household. The study adopted exploratory sequential research strategy whereby data collection and analysis start with the initial phase of qualitative data collection and the analysis followed by a phase of quantitative data collection and the analysis. The research strategy was adopted in order to integrate the results from two stages in order to expand the scope and improve the quality of findings. The qualitative phase of data collection involved Focus Group Discussions (FGDs) and Key Informants Interviews (KIIs). Seven FGDs with participants knowledgeable on the out-grower scheme and investor farm employment were conducted with each FGD having six to eight participants. Based on their knowledge on out-grower scheme, investor farm employment, and their position, seventeen KIIs were purposely selected. These includes two administrative secretaries of out-

grower associations, three Ward Executive Officers (WEO), four Village Executive Officers (VEO), two representatives from KPL and KSCL, one representative from SAGGOT, one representative from Sugar Board of Tanzania and Kilombero District Agricultural, Irrigation and Cooperative Officer (DAICO).

The quantitative phase of data collection involved a household survey whereby 400 respondents were involved. The proportional of village population sample using a household village register was applied to determine a sub-sample from each village and thereafter, simple random sampling was used to pick the respondents from each village. Some respondents were dropped due to incomplete data resulting into a sample of 376, which is 94 percent of the total sample size expected.

By assuming a 95 percent confidence level and a precision of 0.05, the required sample size was obtained using the following formula:

$$n = \frac{N}{N(e^2) + 1} \dots\dots\dots \text{(Yamane, 1967 as cited by Israel, 2013)}$$

Where:

n is sample size,

N is the population of all households in study villages and

e is the level of precision.

According to the National Census of 2012, the number of households in the four villages which were to be included in the study is 5914. Using the above formula, a sample of 400 households was obtained for all villages. The formula used for the sample size at specific village (proportionate) was adopted from Kothari (2004) using the following formula:

$$n = \frac{N(\text{Onevillage}) \times n(\text{allvillages})}{N(\text{Alhvillages})} \dots\dots\dots \text{(Kothari, 2004).}$$

Thereafter, a simple random sampling using lottery technique was used to select the respondents from each village. The sub-sample from each village is indicated in Table 1.

Table 1: Sample Households from selected Villages

Village	Households	MHH	FHH	Out-growers	Investor farm worker	Non-Participants	Sample size
Mngeta	1286	77	10	-	38	49	87
Mchombe	1650	77	12	-	42	47	89
MsolwaUjamaa	1832	78	44	44	31	47	122
Sanje	1146	64	14	41	18	22	76
Total	5914	296	80	85	129	165	400

Qualitative data were analysed using content analysis method whereby the collected information was organized into abstract themes based on the study objective. Quantitative data were analysed using Statistical Package for Social Sciences (SPSS). Binary Logistic Regression was used to identify socio-economic factors that influence households into participating in the out-grower

scheme and investor farm employment. The model was chosen out of a range of alternative regression models such as probit because it accepts two categorical independent variables. The model was also thought to be suitable since household participation in the out-grower scheme and investor farm employment is an individual's decision, which is based on the probabilities of choosing either to participate or not to participate. The easiest and most widely used discrete choice model is logit.

The model used was:

$$\text{Logit}(p_i) = \log(p_i/1-p_i) = b_0 + b_1x_1 + b_2x_2 + \dots + b_{12}x_{12} + \mu_i \text{ (Agresti and Finlay, 2009)}$$

Where:

$\text{Logit}(p_i) = \ln(\text{odds}(\text{event}))$, that is the natural log of the odds of an event occurring

p_i = prob (event), that is the probability that the respondent engaged in the out-growers and investor farm wage employment.

$1-p_i$ = prob (nonevent), that is the probability that the respondent will not be engaged in the out-growers and investor farm wage employment. b_0 = constant of the equation,

b_1 to b_{12} = coefficients of the independent (predictor, response) variables,

k = number of independent variables,

x_1 to x_{12} = independent variables entered in the model.

The operationalization of variables, which were entered in the binary logistic model are as shown in Table 2.

Table 2: Operationalization of Variables entered in Binary Logistic Model

SN	Explanatory variable	Measurement	Expected Sign	Description	Comment
1	Education level	Continuous	+	Years of schooling that a farmer achieved	The more educated, the better negotiation and information processing capacity
2	Gender	Dummy	+	1; if Male 0; if Female	Male more chances of participating in the out-grower scheme
3	Age	Continuous	+	Age of the household head	Older household head more chances of participating in the out-grower scheme
4	Land size	Continuous	+	Size of the farm (hectares)	Large size increases chances of a participation in out-grower scheme
5	Household size	Continuous	+	Number of household members	Large household size reflecting availability of more labour force to facilitate production and transportation of crops
6	Household income	Continuous	+	Total household income in TZS	Higher income more chances of joining the out-grower scheme
7	Distance from the investor	Continuous	-	Distance in km	Less distance increase the chances of participating in the out-grower scheme
8	Marital status of the household head	Dummy	+	1 if married, 0 if otherwise	Married have more chances of participating in the out-grower scheme
9	Access to credit	Dummy	+	1=if the farmer has access to credit 0=if no access	Credit access provide more chances of participating in the out-grower scheme
10	Access to extension services	Continuous	-	measured by frequency of visit by extension officer	More visits increases the chances of participating in the out-grower scheme
11	Group Membership	Dummy	+	1=if the household has membership in group 0=if non membership	Group membership increases the chances of being in the out-grower
12	Asset Monetary value	Continuous	+	Total household asset monetary value measured in TZS	More assets ownership increases the chances of participating in the out-grower scheme
13.	Dependency Ratio	Dummy	-	measured by number of people below 15 and above 64	More dependant fewer chances of participating in the out-grower scheme

3.0 Results and Discussion

3.1 Household's Characteristics

the findings on household characteristics as presented in Table 3, reveal that MHHs and FHHs had the mean age of 41.4 and 46.8 years respectively. This suggests that Male headed households were younger than the female-headed households were. This may be attributed to the fact that sugarcane farming is labour intensive crop, which requires active age group. As Girei and Giron (2012) observe, the level of involvement in sugarcane out-growing tends to increase with the optimum age group and similarly starts to drop with an increase in age. Moreover, MHHs and FHHs had the mean year of schooling of 7.0 and 5.3 respectively. These findings suggest that both MHHs and FHHs were likely to participate in out-grower scheme, as they were literate enough to use the services from out-grower associations as well as signing contract with the company. Few household heads had education above primary level. The possible explanation is that educated people tend to shun away from agriculture for the white colour jobs and they are more concerned with the time value of money and will prefer to invest in the projects with quick returns, and which are more profitable. Studies by Bahaman *et al.*, (2009) proved that out-grower schemes are among the main option for those with lower education.

Table 3: Household's Socio-economic Characteristics (n=376)

Variable	MHHs	FHHs
Age	41.4(14.2)	46.8(16.7)
Years of schooling	7.0(2.7)	5.3(3.2)
Household size	4.2(2.0)	3.6(1.8)
Land size	2.8(3.4)	2.0(2.1)
Frequency of extension visit	0.6(1.5)	0.38(1.0)
Distance to investor	11.6(6.9)	11.8(5.9)
Asset ownership	4565137(8580484)	3884693(6300511)
Total income	2527382(3190548)	1747095 (2768879)

Numbers in brackets are standard deviations of the means and numbers out of brackets are means

The MHHs with the mean land size of 4.2 were more land secured as opposed to FHHs who had the mean land size of 3.6. This suggests that male-headed households had more land, which is required to join the out-grower schemes. Kiwanuka and Machethe (2016) indicate that access to land has a positive implication in participating in the contract farming. MHHs had higher frequency of visits by extension agents than FHHs with the mean visit of 0.6 and 0.3 respectively. These findings suggest that male-headed households had more chances of participating in the out-growers and hence more contact with the company extension officers. Again, MHHs had assets with more value (4565137 mean assets) than FHHs (mean assets 3884693). This suggests that male-headed households had more chances of participating in the out-grower scheme than female-headed households. Studies by Escobal and Cavero (2012 and Kiwanuka and Machethe (2016) reported that households with more assets have more chances of participating in contract farming. MHHs and FHHs had the mean income of 2527382 and 1747095 respectively. This implies that MHHs had more income than FHHs had and since sugarcane is capital-intensive crop, MHHs had more chances of participating in the out-grower scheme. This findings is in contrast with the findings from previous studies, which indicated that

households with lower income are more attracted to be part of agricultural community and out-grower scheme is one of the alternatives that they could choose from (Bahaman *et al.*, 2009)

The findings in Table 4 show that few MHHs and FHHs had access to credit by 24.3 and 27.5 percent respectively. This implies that both MHHs and FHHs had little access to credit, which is still a challenge to poor households. Access to credit helps the household to access agricultural inputs.

Table 4: Household's Socio-economic Characteristics (n=376)

Variable	MHHs	FHHs
Access to credit	72 (24.3)	22 (27.5)
Group membership	133 (44.9)	32 (40.0)
Marital status		
Single	41(13.9)	23 (29)
Married	246 (83.1)	0
Separated	7 (2.4)	21 (26.3)
Divorced	0	3(3.8)
Widow/widower	2 (0.7)	33 (41.3)
Total	296	80

Numbers in brackets are percentages while those out of the brackets are frequencies

About group membership, 45 and 40, percent of MHHs and FHHs respectively were in groups. This suggests that MHHs have more chances of joining out-grower association. Studies (e.g. Sharma 2008; Saigenji 2010; Sambuo 2014) established that household membership in any kind of organization affects positively household chances of participating in the out-growers scheme. The findings show further that 83.1 percent of MHHs were married. This might imply that MHHs have additional family labour supply to maintain their out-grower schemes. In another study, Narayan (2010) indicates that married household heads are expected to be more influenced into engaging in the out-grower schemes as opposed to unmarried household heads. This is especially because married household mean more labour force for farming activities.

3.2 Socio-Economic Factors for Household Engagement in Out-growers Scheme

The Binary Logistic Regression was used to model the selected variables and household participation in the out-grower scheme as presented in Table 5. The results show that among the thirteen (13) variables, seven variables: demographic variables (age and type of the household head), household group membership, household access to credit, asset ownership, distance to investor, and land size were found to be important predictors for household participation in the out-grower scheme ($P < 0.05$). The strongest predictor was household group membership ($P = 0.00$). The findings in Table 5 indicate that the Hosmer and Lemeshow test showed a Chi-square statistics of 6.523 ($P = 0.589$). The findings show further that Nagelkerke pseudo R^2 statistics that represents the adjusted Cox and Snell Pseudo R^2 statistics was 0.569, which implies that 56.9 percent of the variance in the determinants of household participation in the out-grower scheme was explained by the independent variables that were entered in the model.

Table 5: Socio-Economic factors influencing household participation in out-growers scheme (n=376)

Variables	Coefficient (B)	S.E.	Wald	Sig.	Exp(B)
Age of the household head	-0.062*	0.015	18.425	0.000	0.940
Household head marital status	-0.880	0.525	2.810	0.094	0.415
Household head years of schooling	0.039	0.070	0.316	0.574	1.040
Household membership in group/organization	1.979*	0.421	22.071	0.000	7.2346
Household head type	1.370**	0.429	10.214	0.001	3.934
Household access to credit	-1.744*	0.492	12.534	0.000	0.175
Household access to extension services	0.034	0.127	0.071	0.790	1.034
Distance to investor	-0.145*	0.027	29.167	0.000	0.865
Household asset ownership	0.000**	0.000	5.797	0.016	1.000
Household income	0.000	0.000	2.763	0.096	1.000
Household land size	0.232	0.067	11.823	0.001	0.793
Household size	0.113	0.130	0.752	0.386	1.119
Dependency ratio	0.015	0.193	0.060	0.939	1.015

Omnibus Tests of Model Coefficients (Chi-square = 171.128; sig. = 0.000); Cox & Snell R Square = 0.366
 Hosmer & Lemeshow Test (Chi-square= 3.614) sig. = 0.890); Nagelkerke R Square = 0.557; *and ** indicate levels of significance at 1 and 5 percent respectively.

The relationship of age of the household head in Table 5 was found to be statistically significant ($P = 0.000$), which implies that the age of the household head was a significant predictor for household to participate in the out-grower scheme. The results also indicated that if the age of the household head increased by one unit, participation in the out-grower scheme would decrease by 0.940 units as indicated by the odds ratio that was 0.940. This implies that household heads with older age (one unit higher) were 0.940 less likely to participate in the out-grower scheme. This can be attributed to the reason that sugar cane production is labour intensive crop that requires energetic farmers. Similar results were reported by other studies including Girei and Giron, (2008) and Minot *et al.* (2009).

Household head type significantly influenced household chances of participating in the out-grower scheme. The findings indicate further that when MHHs increase by one unit, the odds ratio is 3.934, implying that household headed by men increases the chances of participating in the out-grower scheme by 3.934. This finding implies that MHHs are more likely to participate in the out-grower scheme than FHHs. The findings correspond with the findings by other studies (see for example, Tsikata and Yaro, 2013; Hakizimana *et al.*, 2017; Yaro *et al.*, 2017). Group Membership was found to be positively significant on the likelihood of the household to be in the out-grower. The findings indicate that if the number of households in groups increases by one

unit, the odds ratio is 7.236, implying that households with group membership are 7.236 more likely to participate in the out-grower scheme. These are not surprising results as membership in social organizations mean those households are more exposed to training, information, and access to credit, access to extension services, and access to agricultural inputs, which might enhance their participation in the out-grower scheme. Since more households headed by men are in groups it is evident that MHHs are more engaging in the out-grower scheme than are FHHs. Similar findings are reported in other studies (see for example, Sharma, 2008; Saigenji, 2010; Sambuo, 2014) who established that household membership in organization affects positively contract participation.

The results revealed further that access to credit exert a negative but statistically significant effect on the chances of a household to participate in the out-grower scheme. The findings indicate further that when access to credit increase by one unit, the odds ratio is 0.175, implying that household with access to credit have their chances of being in the out-grower decreased by 0.175. This might suggest that households with more credit tend to diversify their livelihood strategies and out-grower scheme might not be their choice of a strategy. MHHs have more credit than FHHs as they have more resources, which can be used as collateral and thus increasing their chances of participating in the out-grower scheme. The findings are similar to those reported by Jabbar *et al.* (2007). Distance of the household homestead to the investor showed negative but statistically significant influence on the household chances of participating in the out-grower scheme. The findings revealed further that when distance increase by one km, the odds ratio is 0.865 implying that households residing far from the investor are 0.865 less likely to participate in the out-grower scheme. an increase in the distance means that the company would incur more costs of transporting cane to the factory for crushing. This is further supported by the discussion with Kilombero Sugar Company (KSCL) official during key informant's interview who reported that one of the criteria for selecting out-growers participants was residing in a distance of not more than 5km from KSCL. Similar results are reported by other studies (e.g. Narayan, 2010; Wainaina *et al.*, 2012; Kiwanuka and Machethe, 2016).

Land size influenced significantly household participation in the out-grower scheme. The findings revealed that when land size increase by one hectare, the odds ratio is 0.793 implying that household with large land sizes are 0.793 more likely to participate in the out-grower scheme. A possible explanation to this could be that household with large arable land size have the opportunity of growing large tracks of sugarcane. Large land size also implies that household can diversify into other crops and reduce the risk inherent in agricultural production. As reported by Wainaina *et al.* (2012), one of the conditions of joining out-grower scheme is access to land and household with large land size have more chances of being in the out-grower.

Likewise, asset ownership had significant positive effects on the households' chances of participating in the out-grower scheme. The odds ratio for asset ownership was 1.000 suggesting that for every unit increase in the asset value, there would be no change on the household's likelihood of participating in the out-grower scheme. It was anticipated that, since sugarcane farming is capital-intensive crop, households with more assets could have more chances of participating in the out-growers scheme in the study area. The results also suggest that MHHs have more assets value than FHHs have, which increases their chances of joining the out-grower scheme. The findings are similar with those reported by other scholars (e.g., Jabbar *et al.*, 2007;

Escobal and Cavero, 2012; Kiwanuka and Macheche, 2016) who reported that an increase in the asset value had a positive significant effect on the chances of a household to participate in contract farming. In addition, elsewhere studies by Daley and Pallas (2014), Doss *et al.*, (2014), Ossome (2014), and Dancer and Tsikata (2015) reported that status in the community and wealth may determine who benefits and who loses out from the out-growers scheme. Therefore, it can be suggested that MHHs are more likely to participate in the out-grower scheme, as they are more asset secured as opposed to FHHs.

3.3 Socio-Economic Factors for Household Engagement in Investor Farm Employment

Binary Logistic Regression was used to model the selected variables and household participation in investor farm employment as presented in Table 6. The results of the Binary Logistic Regression revealed that, among the thirteen (13) variables, six variables: Gender variables (age of the household head, household head type, and household marital status), household land size, household asset ownership and household income were found to be important predictors for household participation in the investor farm employment ($P < 0.05$). The strongest predictor was the age of the household head ($P = 0.00$). The findings in Table 5 indicate that the Hosmer and Lemeshow Test showed a Chi-square statistics of 9.019 ($P = 0.341$). The findings show further that Nagelkerke pseudo R^2 statistics which represents the adjusted Cox and Snell Pseudo R^2 statistics was 0.339, which implies that 33.9 percent of the variance in the determinants of household participation in the investor farm employment was explained by the independent variables which were entered in the model.

Table 6: Socio-Economic Factors Influencing Household Participation in Investor Farm Employment (n=376)

Variables	Coefficient (B)	S.E.	Wald	Sig.	Exp(B)
Age of the household head	0.059*	0.014	17.386	0.000	1.061
Household head marital status	0.838*	0.330	6.446	0.011	2.311
Household head years of schooling	-0.004	0.060	0.005	0.941	0.996
Household membership in group/organization	-0.259	0.342	0.568	0.451	0.773
Household Type	-1.226**	0.390	9.872	0.002	0.293
Household access to credit	-0.226	0.412	0.301	0.583	0.798
Household access to extension services	0.281	0.172	2.674	0.102	1.325
Distance to investor	0.024	0.021	1.386	0.239	1.025
Household asset ownership	-0.021	0.018	4.833	0.028	0.781
Household income	-0.003	0.002	5.995	0.014	0.999
Household land size	0.301**	0.102	8.674	0.003	1.351
Household size	-0.141	0.118	1.437	0.231	0.868
Dependency ratio	0.273	0.175	2.415	0.120	1.313

Omnibus Tests of Model Coefficients (Chi-square = 155.512; sig. = 0.000); Cox & Snell R Square = 0.339

Hosmer & Lemeshow Test (Chi-square= 9.019) sig. = 0.341); Nagelkerke R Square = 0.465; * and ** indicate levels of significance at 1%, and 5% respectively.

The findings showed that age of the household head was the strongest predictor of the chances of the households to participate in the investor farm employment. The findings were statistically significant at $P = 0.000$ and $\text{Exp}(B) = 1.061$. A Wald of 17.386 demonstrates that the age of the household head contributes significantly to predicting the chances of households to participate in the investor farm employment. The results indicate further that when the age of the household head increases by one year, the odds ratio is 1.061, implying that older household heads are 1.061 more likely to participate in the investor farm employment. This suggests further that young household members are more likely to participate in other off-farm activities such as “Boda boda” business that attract more income as opposed to working in the investor –farm wage work. During FGDs, it was reported that investor farm employment is seen by youth as inferior, strenuous, and difficult with low wages especially in cane cutting task.

“..... Many youth in this area see cane cutting as inferior task. You cannot find any cane cutter who was born in this village or neighbouring villages; in most cases can-cutters are coming from Iringa and Mbeya region.....” (Male youth FGDs participant, Sanje, 30th November 2016).

The study by Dancer and Sulle (2015) indicate that in sugarcane sector, there is a strong gender differentiation between young male can cutters and weeders majority of whom are women and older men. Also Knapman *et al.* (2017) reported that as a result of large-scale agricultural investment in Uganda and Ghana, youth were mostly affected by lack of land access and shifted to off-farm occupations. Other youth migrated in the urban areas and other rural areas.

Regarding household head type and participation in the investor farm employment presented in Table 6, the results were found to be statistically significant ($P = 0.002$), which implies that the household head type was a significant predictor of household participation in the investor farm employment. It was also indicated that if the household was headed by men, participation in the investor farm employment decreases by 0.293 units as indicated by the odds ratio that was 0.293. This implies that those households headed by men were 0.293 times less likely to participate in the investor farm employment. These findings imply that investor farm employment is not that lucrative employment to attract men’s participation. This is because of low wages associated with large-scale agricultural investment employment. Similar findings are reported in the literature (see for example, Dolan and Sorby, 2003; Singh 2003; Maertens and Swinnen, 2009), which that in flowers, canola, poultry and Vanilla in Kenya, Uganda, Zimbabwe, Colombia and Ecuador respectively, women occupied at least 50 percent of all employment generated. Likewise, the findings are support the previous findings by Smalley (2013) who also revealed that poor women with limited livelihood options are likely to participate in employment opportunities created by large-scale agricultural investments. The findings are in contrast with the findings reported by other scholars (e.g., FAO 2011; Tsikata and Yaro 2013; UNCTAD 2015; Dancer and Tsikata 2015; Lanz and Daley 2016) who revealed that employment created by large-scale agricultural investment benefit more men than women. The above contradictions may suggest that MHHs in Kilombero Valley have more income, which can be invested in other income generating activities that attract more income than does working as casual workers in large-scale agricultural investments.

The results show further that land size had positive significance with the likelihood of household to participate in investor farm employment. The results indicated further that, when land size increases by one hectare, the odds ratio is 1.351, implying that household with larger land size are 1.351 more likely to participate in the investor farm employment. This result implies that, household engaging in investor farm employment is also likely to combine wage employment and farming activities. This claim is further supported by FGD's results, which show that most household participate in the investor farm employment at KPL during maize harvesting season when these households have already harvested their paddy and are waiting for next farming season.

“.....We normally combines farming in our own field with casual labour at KPL. During farming season some of us do not work for KPL rather we work on our paddy field and after harvest we seek casual labour like weeding and harvesting of maize which are grown by KPL after they have harvested Paddy.....” (FGDs Female participant at Mchombe Village, 7th December 2016).

During discussion with KIIs in Mngeta and Mchombe villages, it was also reported that, during farming season most households concentrate in their paddy fields and after farming season especially when KPL is growing irrigated maize, some households find work in weeding and harvesting maize. Positive and significant influence of land size can also be explained by the fact that household with better land holding opted for additional income in casual labourer works to finance their farming expenses in the next season. This result is congruent with the results in other studies including Hakizimana *et al.*(2017); Yaro *et al.*(2017) who also reported that a combination of wage employment and own farming is an important basis for livelihood for household living in the communities with large-scale agriculture investments. Marital status significantly influenced household participation in the investor farm employment. It was found that when married household head increase by one unit, the odds ratio is 2.311, implying that households with married household head are 2.31 more likely to participate in the investor farm employment. The possible explanation is that married household heads have large family sizes and are likely to have extra and unemployed labour, which helps them to allocate this workforce outside the agricultural sector. Similar findings were reported by Hakizimana *et al.*, (2017) who found that married household living adjacent to large-scale agricultural investments were diversifying their income sources between on-farm in the out-grower scheme and off-farm sources especially wage employment in these investments.

Household income had significant negative influence on the households' participation in the investor farm employment. It was indicated further that when household income increased by one unit, the odds ratio was 0.999, implying that households with more income are 0.999 less likely to participate in the investor farm employment. This implies that at higher levels of household income, the household are less likely to participate in the investor farm employment because they have enough resources to finance their farming activities and remain with enough for financing other non-farm income generating activities. Smalley (2013) reported that investor farm employment is occupied by poor households with limited livelihood options. Household asset ownership negatively influenced household participation in the investor farm employment. It was found that when household assets increase by one unit, the odds ratio is 0.781, which implies that households with more assets are less likely to participate in the investor farm

employment. The reasons for this might be that, the household assets can act as collateral for credit demand, which can be used to finance farm and other non-farming income generating activities. Similar findings are reported by Davis et al., (2010) who found that agricultural wage employment is performed by households with few assets and who lack the ability of engaging in high rewarding income generating activities.

4.0 Conclusions and Recommendations

It is concluded that household participation in the out-growers scheme is influenced by socio-economic characteristics. Gender variables such as the age and household head type influence significantly household participation in the out-grower scheme. Participation in the out-grower scheme tends to increase with an increase in land size and household group membership. On the other hand, participation decreases with an increase in access to credit, distance to the investor and asset ownership. The likelihood of a household to participate in the investor farm employment is also influenced by socio-economic characteristics with gender variables: age, household head type, and household marital status exerting positive significance influence. Household asset ownership, household income, and land size increase the chances of household's participation in the investor farm employment. Therefore, household participation in the out-grower scheme favour youth household head, MHHs, household in groups, household with higher land size, HHs with less access to credit and household with few assets. On the other hand, participation in the investor farm employment favour those households with older FHHs, low income, few assets, married and households with large land size.

Therefore, there is a need of providing sugarcane technical training to out-growers. Understanding of the factors that affect households' participation in the out-grower scheme and investor farm employment and how they relate to participation decision should be an important part in designing of interventions aimed at improving production uptake. This study was based on sugarcane out-grower scheme. There is a need for further research on the determinants of household participation in contract farming in other crops such as cotton, sisal, coffee and other crops.

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Socio-economic Determinants for Maize Smallholder Farmers' Adoption of Purdue Improved Crop Storage in Mbozi District, Tanzania

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Abstract

Post-harvest handling technologies like Purdue Improved Crop Storage (PICS) bags are so effective in reducing post-harvest losses and improve food security. Despite the potential of PICS bags in reducing post-harvest losses, the adoption of PICS bags is still low and a good fraction of Sub-Saharan Africa (SSA) farmers continue to practice their traditional methods. The current study aimed at exploring socio-economic determinants of maize smallholder farmers' adoption of PICS bags in Mbozi District. The data on which the paper is based were collected from four villages of Mbozi District using a mixed research approach. A cross-sectional research design was adopted whereby data were collected at once. Quantitative data were collected using a structured questionnaire with 120 respondents who were selected using simple random sampling. Qualitative data were collected using Focus Group Discussion (FGDs) and Key Informants Interviews (KIIs) and analysed using content analysis. Quantitative data were analysed using the Statistical Packages for Social Science (SPSS), whereby descriptive statistics such as frequency, mean, standard deviation, and percentages were determined. In addition, a binary logistic regression model was used to determine association of some key socio-economic factors and adoption of Purdue Crop Storage (PICS) bags. The results from the logistic regression show that, gender of the household head, education of the household head, maize farming experience of the household head, access of the household to credit, and access of the household head to training on PICS were found to be important predictors of household adoption of PICS ($p < 0.05$). Therefore, the paper recommends that, the Local Government and other stakeholders should train smallholder farmers on PICS and creates awareness in order to help to increase understanding of PICS bags among more maize farmers. There is a need for more advocacy initiatives by stakeholders on subsidizing the costs of PICS bags in order to improve the adoption of PICS bags by farmers.

Keywords: *Purdue Improved Crop Storage, Smallholder Maize Farmers, Adoption.*

1.0 Introduction

Post-harvest losses, due to pests are an enduring problem throughout the developing World. According to FAO (2011), approximately one-third of the food produced for human consumption worldwide is wasted. It is estimated that 54 percent of losses occur during production, post-harvest handling, and storage. According to FAO (2011 cited in Abbas *et al.*, 2014) this post-harvest loss is responsible for economic costs estimated at US \$750 billion. As Ambler *et al.*, (2017) observe, the harvest loss of maize was about 30 percent while the total maize loss was 40 percent. Similarly, Abbas *et al.*, (2014) observe, in worst cases, up to 32 percent of maize-on-cobs could be lost to birds, monkeys, other rodents before harvest, and through qualitative spoilage by mould and fungi which could be extensive in wet conditions. The loss translates to 1.3 billion tons of food per year in a world where over 870 million people go

hungry. In Sub-Saharan Africa (SSA), postharvest losses (PHL) for grains alone exceed USD 4 billion. This magnitude of food loss exceeds the value of the total food aid received in the region (SSA), and is equal to the annual value of cereal imports to SSA (World Bank, 2011). Scholars (e.g. Owach *et al.*, 2017), establish that postharvest food losses contribute greatly to food, nutrition, and income insecurity in this region. Such losses are estimated to be equivalent to the annual caloric requirement of 48 million people. Studies by FAO suggest that farmers in Tanzania lose up to 40 percent of produce after harvesting. In Tanzania, such food losses have led to frequent food shortages, which are experienced in different parts of the country with small-scale maize farmers representing the most vulnerable populations. This is especially because most of the available storage pests control strategies are unavailable to them due to prohibitive costs (HELVETAS, 2013). One of the highly affected crops is maize, which is an important and among the widely consumed agricultural food crops in the globe. It is considered a vital crop for achieving food and nutritional security for both poor producers and consumers (Jones and Lowenberg-DeBoer, 2014).

In responding to such huge food losses caused by insects, pests, and pathogens, farmers opt to sell their produce shortly after harvest, resulting to the loss of opportunity to earn revenue at peak market prices. Other farmers use traditional storage practices, which cannot guarantee protection against major storage pests of staple food crops such as beans and maize. Other farmers apply synthesis insecticides as storage protectants but adequate protection is often not achieved. Sometimes these insecticides are not available in their localities all the time and knowledge pertaining to proper use of them is questionable. Moreover, the indiscriminate use of insecticides by some farmers is likely to cause the insects develop resistance and bring about environmental and human health disorders (Paul *et al.* 2009; Obeng-Ofori 2011; Baributsa *et al.* 2014). Various storage technologies have been developed to reduce post-harvest losses. These include silos, metal canister/drums, cold chain storage containers, woven bags, plastic bags, insect proof containers, Purdue Crop Storage (PICS) bags, and adaptations to traditional storage technologies (CITE 2015). Many of these products have been piloted in small-scale programs to improve lives of smallholder farmers in Africa, Southern Asia, and Central America. The Purdue Crop Storage (PICS) tripple-layer plastic bags were initially introduced by Purdue University in 2007 as a five-year initiative supported by a grant from the Bill and Melinda Gates Foundation in West Africa. This initiative was designed to help farmers access an innovative low-cost and chemical-free cowpea storage technology through Bean/Cowpea Collaborative Research Support Program (CRSP) (Baributsa *et al.* 2014). In another study, in East Africa Abbas *et al.*, (2014) suggested that promoting adoption of the improved storage technologies by farming households would substantially contribute to household food security and income by reducing storage losses. It was highlighted that certain Post-harvest handling technologies (Hermetic technologies) such as metal silos and PICS bags are so effective that if adopted, additional preservation techniques to protect the crops would not be needed (Carvalho *et al.* 2012; Gitonga *et al.* 2012; Tefera *et al.* 2012).

although there are several studies on the reduction of post-harvest losses, for example, Carvalho *et al.* (2012) focused on the use of modified atmosphere to control *Sitophilus zeamais* and *Sitophilus oryzae* on stored rice; Chisenga (2015) focused on the adoption of conservation agriculture, and Gitonga (2012) focused on the impact of metal silos on households' maize storage. Despite the potential of PICS bags in reducing post-harvest losses, the adoption of PICS

bags is still low and post-harvest losses of maize remain significant. Therefore, the study on which this paper is based aimed at assessing the adoption or non-adoption of PICS bags by maize producing households in Mbozi District'. The paper would be useful to policy makers and other stakeholders interested in devising strategies of reducing post-harvest losses among smallholder maize farmers. The socio-economic factors influencing the adoption of PICS are also paramount and must be studied to increase a convincing number of maize farming households into using PICS bags. In this way, poverty alleviation, household food, and income security, access to safe and chemical free staple food could be attained.

The paper is informed by the "Technology Diffusion Theory" which is based on farmers' decision to adopt new technologies (Isham, 2002). The theory postulates that, farmers with more education and bigger land area will have more knowledge on improved farming systems and are more likely to adopt technologies rapidly. According to the diffusion theory, the adoption of technologies is influenced by many factors. For example, access to extension services can influence farmers' adoption of technologies. Therefore, the more contact a farmer has with the extension services, the more the information the farmer will access thus, the higher the possibility of using the technology (Haji, 2003). In addition, farmer's socio-economic characteristics such as age, sex, marital status, household size, and years of farming experience, distance to the market, group membership, and access to credit may influence the adoption of post-harvest technologies (Ali 2012; Elemasho *et al.* 2017; Mukarumbwa *et al.* 2017). According to Adeogun *et al.*, (2010), younger farmers are more likely and willing to spend more time to obtain information on improved technologies as opposed to older farmers hence could the former are more likely to adopt new technologies than are the latter.

2.0 Methodology

The study was conducted in Mbozi District, which was selected purposively based on its ranking in maize production in Songwe Region and its potential for maize production (NBS, 2003) and the fact that the district is located in one of the four zones (northern zone, central zone, lake zone and southern highlands zone). This is where PICS bags promotion was conducted in 2015 (Mwijande, 2017). The study adopted a cross-sectional research design whereby data were collected once using a pre-structured questionnaire and checklist of questions. The design was thought as suitable for the current study because it allows the collection of data, which can be used to determine the relationship between variables. The population for the study on which the paper is based comprised all maize farmers in Mbozi District. The sampling unit was a household. Exploratory sequential research strategy was adopted involving the initial phase of qualitative data collection and the analysis, which was followed by a phase of quantitative data collection and the analysis (Cresswell, 2003). The exploratory sequential research strategy was adopted in order to integrate the results from two stages in order to expand the scope and improve the quality of the results. The qualitative phase of data collection involved Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs). Four FGDs with participants knowledgeable in PICS with each FGD having participants ranging from six to eight were conducted. Thirteen KIIs were purposely selected, these include one representative from ADP Mbozi, Unyiha Associated Ltd and G2L Company Limited, PICS consultant, TFA, four Ward Executive Officers (WEO), and four Village Executive Officers (VEO). The selection of KIIs participants was based on age, experience, and position. The aim was to get the oldest members with long experience on maize production and PICS bags in the respective villages.

The quantitative phase of data collection involved multi-stage sampling to select four wards out of 25 wards producing maize in the district. It was important to use the selected sample as shown as it allows the use of multiple sampling techniques within a single study. In order to obtain representative villages, random sampling was employed to select one village from each of the four wards. Thereafter, 120 respondents were randomly selected from four villages (i.e. Isalalo, Zelezeta, Ivwanga, and Isenzanya; for other details see Table 1), making 30 from each village. The sample size of 30 respondents from each village was picked because households in these villages had similar socio-economic characteristics and the sample size of 30 respondents is enough for analysis (Field, 2013). Simple random sampling was used because it provides equal opportunity for every respondent to be selected and the selection was guided by village register.

Table 1: Sample Distribution

Sn	Ward	Village	No. of Respondents
1	Msia	Isalalo	30
2.	Igamba	Zelezeta	30
3.	Mlowo	Ivwanga	30
4.	Nambinzo	Isenzanya	30
		Total	120

Qualitative data, which were collected using a checklist of questions, were analysed using content analysis whereby information pieces were organized into different themes and compared based on the study objectives. Quantitative primary data were collected using a structured questionnaire with both open and closed ended questions. The collected quantitative primary data were analysed using the Statistical Package for Social Science (SPSS), whereby descriptive statistics such as frequencies, percentage, mean, and standard deviation were determined. In addition, a binary logistic regression model (as detailed below) was used to determine the association of some socio-economic characteristics and the adoption of PICS by smallholder maize farmers. The logistic regression model was chosen because it accepts a mixture of continuous and categorical independent variables, and for the current case the dependent variable was categorical (0=non-adoption of PICS and 1=adoption of PICS. The likelihood of the adoption of PICS by maize smallholder farmers was predicted using the following binary logistic model:

$$Lg (P/1-P) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \dots \beta_n x_n + \epsilon_i \dots \dots \dots (1)$$

Where P=Maize farmers adoption of PICS bags (1 = adopt 0 = does not adopt) 1-P= Maize farmers none-adoption of PICS bags; X₁ –X₁₀ = Explanatory socio-economic predictor variables as shown in table 2.

Table 2: Operationalization of Socio-economic Variables

SN	Explanatory variable	Measurement	Expected Sign	Description	Comment
1	Education level	Continuous	+	Highest level of education that a farmer achieved	The more educated, the better negotiation and information processing capacity
2	Sex	Dummy	+	1; if Male 0; if Female	Male more chance of PICS adoption
3	Age	Continuous	+	Age of the household head	Older household head more chance of adopting PICS
4	Maize farm size	Continuous	+	Size of the farm under maize cultivation (hectares)	Large size increases chances of adopting PICS
5	Household size	Continuous	+	Number of household members	Large household size reflecting availability of more labour force to facilitation production and transportation of crops
6	Household income	Continuous	+	Total household income in TZS	Higher income more chances of adopting PICS
7	Distance from the market	Continuous	-	Distance in km	Less distance increase chances of adopting PICS
8	Maize farming experience	Continuous	+	Years in maize farming	More years in maize farming means more experiences
9	Access to credit	Dummy	-	1=if the farmer has access to credit 0=if no access	Credit access more chance to adopt PICS
10	Access to training on PICS	Dummy	-	1=if the farmer has access to training on PICS 0=if no access	PICS training access more chance to adopt it

3.0 Results and Discussion

3.1 Socio-economic Characteristics of Surveyed Households

Socio-economic characteristics can influence a household's adoption of PICS bags. Socio-economic characteristics that have been taken into account in this paper include, age, sex, education level, maize farming experiences, maize farm size, household size, access to credit, access to training on PICS, household income, and distance from the market. The above characteristics according to literature (see for example, Ayoola *et al.*, 2011; and Adamu *et al.*, 2012) can influence the adoption of agricultural technologies. The respondents' major socio-economic characteristics are shown in Table 3. The results show that 80 percent of the respondents were Male-Headed Households (MHHs) while 20 percent were Female Headed Household (FHHs). The lower number of FHHs probably is caused by the nature of African societies where most families are headed by males. The higher number of MHHs observed in this

study conforms to a previous study by Chirwa *et al.*, (2011), who reported that MHHs are more likely to adopt improved technologies.

Table 3: Descriptive of Households' Socio-economic Characteristics (n=120)

Explanatory Variables	Description	Mean or /%	Std.
Gender	Male	80*	
	Female	20*	
Age	In years	36. 65	10. 796
Education	Years of formal schooling	9. 35	3. 010
			0.499
Maize farming experiences	Years in maize farming	13.79	8.623
	Accessed	55*	
Access to credit	No Access	45*	
Access to training on PICS	Accessed	47*	
	No Access	53*	

The mean years of schooling were 9 years. Education and literacy are important factors in determining the decisions to adopt technologies among farmers. The mean age of the respondents was 36 years, which is considered a productive age. The nature of age is parabolic in nature. On the one hand, older household heads are believed to have accumulated more personal capital and experience and thus are more likely to invest in innovation. On the other hand, younger household heads are more flexible and energetic and hence are more likely to adopt new technologies. In another study, Eswarn *et al.*, (1997) reveal that age between 30-36 years is productive age, which is favourable for high production.

The findings show further that 55 percent of the respondents had access to credit. Access to credit is essential in enhancing households' accumulation of capital for investing in new storage technologies such as PICS. The study also found that 47 percent of the respondents had access to training on PICS. Access to training on PICS is necessary in creating awareness on PICS. According to Kimaro *et al.*, (2010), exposing farmers on storage technologies can stimulate the adoption of such technologies.

3.2 Socio-economic Determinants of Maize Smallholder Farmers Adoption of Purdue Improved Crop Storage Technology

Binary logistic regression was used to model the selected variables and socio-economic determinants of the adoption of PICS among maize farmers as presented in Table 4. The results show that, among the ten (10) variables, five variables: sex of the household head, education of the household head, maize-farming experiences of the household head, household access to credit, and household head training on PICS were found to be important predictors of household adoption of PICS ($p < 0.05$). The strongest predictor was sex of the household head ($p = 0.000$). The findings in Table 4 indicate that the Hosmer and Lemeshow test showed a Chi-square statistics of 6.253 ($p = 0.598$). This means that the overall model predicted the outcome well because the Hosmer and Lemeshow test Chi-square was not significant (Field, 2013). In Table 4, the Wald statistic value of gender of the household head which was Wald = 21.420 was the

maximum and statistically significant at $p \leq 0.001$. In addition, household training on PICS that had a Wald statistic value of 18.647 was the second highest and statistically significant at $p \leq 0.01$. The implication of this finding is that as access to training on PICS among household heads increases the likelihood of adopting the technology.

Table 4: Binary Logistic Regression Estimates for the Adoption of PICS Bags (n=120)

Variables	B	S.E.	Wald	Sign	Exp
Age	-0.270	0.113	5.703	0.017	0.763
Gender	8.742	1.889	21.420	0.000*	6258.115
Education	0.615	0.178	11.863	0.001*	1.849
Household Size	0.351	0.280	1.576	0.209	1.421
Farm size	-0.702	0.286	5.997	0.014	0.496
Monthly Income	0.000	0.000	2.893	0.089	1.000
Distance to the market	-0.044	0.090	0.236	0.627	0.957
Maize farming Experience	0.775	0.209	13.679	0.000*	2.170
Access to credit	2.911	0.874	11.088	0.001*	18.367
Access to Training on PICS bags	3.310	0.767	18.647	0.000*	27.385
Constant	14.517	0.677	16.478	0.000*	0.000

Omnibus Tests of Model Coefficients (Chi-square = 150.512; sig. = 0.000); Cox & Snell R Square = 0.591, Hosmer and Lemeshow Test (Chi-square= 9.019) sig. = 0.351); Nagelkerke R Square = 0.791; * and ** indicate levels of significance at 5%.

The logistic results (Table 4) show that gender of the household heads influenced significantly household chances of adopting PICS ($p=0.05$). The findings indicate further that if MHHs had to adopt PICS, the odds ratio would be 8.742, implying that the household headed by men had 8.743 times chances of adopting PICS as opposed to FHHs. This finding implies that MHHs are more likely to adopt PICS than is the case with FHHs. This finding was in line with a prior expectation that male households are more likely to adopt PICS since they are responsible for making decision on storage. The findings correspond with the findings in a study by Oluoch (2014) and Ayedun (2018) who reported that household headed by males are more likely to adopt crop storage technology as men are more energetic and have the ability of adapting to new storage technologies.

The results (Table 4) show further that access to training on PICS was found to have positive significant influence on the likelihood of a household to adopt PICS ($p=0.05$). The findings indicate that, the odd ratio for access to training on PICS was 18.647 implying that households with access to training on PICS are 18.647 times more likely to adopt PICS. This is not surprising because training provides them with the opportunity of accessing information, which might enhance the adoption of PICS.

The FGDs participants had this to say:

“...Farmers’ awareness and readiness on adoption and use of PICS technology is convincing. Although availability of this technology in my village is very limited unless you arrange with an Agricultural officer who has access to information on where you can access....” (FGDs participants in Isalalo village, 14/08/2018).

Similar findings are reported in other studies (e.g., Chisenga, 2015; Odenya and Kebenney, 2008; Okoedo and Onemoleas 2009; Khanna, 2010; Ayedun 2018), which reveal that lack of awareness on the availability of storage technology among households resulted into serious post-harvest losses. Furthermore, training on storage technology was positively associated with the adoption of a particular technology.

The binary logistic regression results (Table 4) revealed further that access to credit exerted a positive and statistically significant effect on the chances of a household to adopt PICS ($p=0.05$). The findings indicate further that the odds ratio for access to credit was 2.911, implying that households with access to credit were 2.911 more likely to adopt PICS. This might suggest that households with more credits can use credit fund to buy PICS bags. This finding is in line with the observations from some of KIIs participants that:

“...Price is not affordable, they do complain about 5000/= @ PICS Bag being very expensive for them and for that matter they can’t buy and therefore they cannot use. Those with access to credit are able to afford the price subsidized by their SACCOs...” (KIIs Participant).

These findings concur with the findings reported by FAO (2011), Makingi and Urassa (2017), which indicate that access to credit facilitates the adoption of farming technologies.

Education of the household head in Table 4 showed a positive and statistically significant influence on the household chances of adopting PICS bags ($p=0.05$). The findings revealed further that when education level increased by one year, the odds ratio became 0.615, implying that households with more years of schooling are 0.615 times more likely to adopt PICS bags. An increase in the education means the households have the possibility of acquiring more income for incurring the costs of buying PICS bags. Similar findings are reported by other scholars (e.g. Oluoch, 2014; Chisenga, 2015; Makingi and Urassa, 2017) who reported that increasing literacy helps farmers to acquire more income, understand information, and adopt new storage technology.

The maize farming experience of the household head as shown in Table 4 influenced significantly the household adoption of PICS bags ($p=0.05$). according to the findings, when the experience of the household head in maize farming increased by one year, the odds ratio increased by 0.775 implying that households with more experience in maize farming are 0.775 more likely to adopt PICS bags. A possible explanation to this could be that households with more experience in maize farming have the opportunity of using different storage facilities. More

experience in maize farming also implies that the households are aware of storage technologies, which are effective in reducing post-harvest losses and reduce the inherent risk in using ineffective storage technology.

FGDS shared a similar concern that:

“...*Our experience in using other maize storage technology shows that PICS bags are more effective as it has proven that insects have no chance of making their way into the bags as they die of oxygen deprivation after three to five days. I can confidently say that these bags were intended for smallholder farmers. It makes my household lives both efficient and flexible as I can store our produce in the bags at any time and be assured that our product will last. When I need to feed my family or sell it, it is readily available and results in a decent amount of income.*” (FGDs participants in Zelezeta village, 12/08/2018).

The above extract implies that smallholder farmers are confident with PICS bags. As reported by scholars (e.g., Ayandiji *et al.*, 2011; Aidoo *et al.* 2014; Malira and Kandiwa, 2015) farmers with more experiences on PICS tend to adopt PICS bags since they understand better devastating effects of insects on stored grains.

4.0 Conclusions and Recommendations

Based on the empirical findings presented in this study, it can be concluded that: gender of the household head, education level of the household head, maize farming experiences, access to credit, and household head access to training on PICS are the socio-economic characteristics, which were associated significantly with a household's adoption of PICS bags.

It is therefore recommended that awareness creation would be beneficial in promoting PICS, as it would help to increase more maize farmers understanding of PICS bags. It is also recommended further that more training needs to be provided to maize farmers to improve their technical expertise on PICS bags, especially considering that a high proportion of farmers are not using PICS bags due to ignorance and lack of technical knowledge. Likewise, there is a need for more advocacy initiatives on subsidizing the costs of PICS bags by stakeholders in order to improve the adoption of PICS bags by farmers. This is especially so because the costs associated with adopting PICS bags was a major challenge identified by the farmers

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Governance of political-administrative relations in public development projects implementation in local governments, Tanzania

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Abstract

Good governance is a global issue. It is a crucial aspect in new public management as it ensures among others, participation, transparency, accountability and adherence to the rule of law among the parties involved in development. This paper sought to examine governance of political-administration relations in health and educational projects in Morogoro Rural District. Specifically, the study aimed at examining participation, transparency, accountability, and adherence of the rule of law by the elected and the appointed official in the construction of health and educational infrastructures projects. The paper adopted a case study research design and used qualitative data where by Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) were employed to collect data. The study used content analysis to analyse the data. The study found that the relationship between the elected and the appointed officials was poor due to lack of good governance among the appointed officials. This trend affected negatively the relationship of the two parties in the implementation of development projects. The study found that the two parties cooperated much in designing and less in the implementation of development projects. The study revealed further that, there was poor transparency in financial matters among both the elected and the appointed officials, which resulted in financial mismanagement. The relationship was highly influenced by dual accountability of the appointed officials and lack of adherence to the rule of law in project implementation. It is concluded that harmonious relations between the elected and the appointed officials is less likely to be achieved, if the two parties fail to adhere to good governance practices. Therefore, it is recommended that local governments at council level should promote adherence to governance aspects in the construction of health and education infrastructures at local levels. Local governments have to build capacity and awareness among both the elected and the appointed officials on governance aspects. The elected officials should ensure that meetings such as village assembly, village councils, WDCs are conducted regularly as required by law in order to improve participation, accountability, and transparency in the implementation of the projects.

Keywords: Governance, participation, transparency, accountability, rule of law

1.0 Introduction

Governance in Local Government Authorities (LGAs) is a critical condition for improving social services delivery to the public (Makorere, 2014; Sigala, 2015). Both the Central Government and international communities insist on adherence to the principles of good governance in achieving sustainable development. The World Bank and International Management Finance (IMF) insist on good governance in fostering development, which is better appreciated at the grassroots level in the third world countries (Yilmaz and Varsha, 2010). The African Union (AU) Agenda 2063 focuses on inclusive growth and sustainable development, good governance, democracy, respect for human rights, justice, rule of law, and people driven development (Sigalla, 2014; Ogbette *et al.*, 2018). As observed by Kabote *et al.* (2017), it is difficult to have good governance in totality. However, more efforts are needed to exercise principles of good governance in order to attain sustainable development. In achieving sustainable development the Government of Tanzania adopted Tanzania Vision 2025, whose main objective is to achieve equality and good life for all, good governance and the rule of law, and building a strong a resilient economy that can effectively withstand global competition. UNDP (2016) set up Tanzania's governance program 2016 – 2021 that focuses on effectiveness, transparency, accountability, and inclusive governance. It is difficult for Tanzania to achieve the Vision 2025 without adherence to the principles of good governance because resilient economy transparency, rule of law, and accountability of all stakeholders (URT, 2000).

Galadima (1998) defines governance as a process of organizing and managing legitimate power structures, entrusted by the people, to provide law and order, protect fundamental human rights, ensure rule of law and due process of law, and provide for the basic needs and welfare of the people and the pursuit of their happiness. In other words, governance is essential to both the elected and appointed officials in guiding their relationship as it ensures transparency, accountability, and the rule of law. Tanzania Framework of Good Governance (TFGG) defines governance as a network and interaction of public (governmental) and private (non-governmental) bodies that have a role to play in the formulation and implementation of public policy and the delivery of public service (URT, 1999). UNDP (1997) identifies nine principles of good governance as participation, rule of law, transparency, responsiveness, consensus orientation, equity, effectiveness and efficiency, accountability, and strategic vision. The purpose of good governance is to stimulate development and reduce poverty, reduce misuse of public funds for self-interests, improve accountability, ensure transparency, and establish equality before the law (Mgonja and Dossa, 2015). Tanzania Development Vision 2025 focuses on the establishment of a higher quality of life, peace, tranquillity, and national unity; good governance an educated society, which is imbued with the ambitions to develop; and an economy which is competitive with sustainable growth for the benefits of all the people.

In most public development, projects in local governments are implemented with collaboration with local communities. Community participation in the implementation of development activities in the Local Government is essential in bringing sustainable development and increasing commitment and accountability, increasing resource availability to the program, promoting self-help, and improving cooperation and trust between communities and their leaders (Chirenje *et al.*, 2013; Njunwa, 2010; Muro *et al.*, 2015). Through decentralization by devolution (D by D) during 1990s, the Government initiated a bottom-up development approach

and the transfer of power to the Local Governments in service delivery (Kisumbe et al., 2014). Through Local Government Miscellaneous Amendments Act, NO 6 of 1999, Local Governments through council were mandated to make decisions to improve the delivery of local services. The Local Government (District Authorities), Act No 7 of 1982, clearly stipulates that the Local Government must involve the local people and their representatives in developing plans and activities.

In the implementation of development projects, the issues of accountability and transparency are vital in the performance of local governments. The Local Government Authorities Act No. 7 of 1982 insists on transparency and accountability in social service provision in the Local Governments. Accountability and transparency ensure better service delivery and mitigate abuse of power and corruption by public officials in public offices (Njunwa, 2007; Sigalla, 2014). Through transparency, citizens are empowered to monitor activities and decision of the government and to hold the government accountable. It is not possible for the citizens and the elected officials to hold government officials accountable if they (the elected officials) lack adequate information. According to Okeke *et al.* (2016), accountability is one of the prerequisites of democratic and good governance. Through accountability, it is possible to hold the elected and appointed officials responsible and answerable for their actions, activities, and decisions. It should be noted that accountability might only exist when there is a relationship where an individual or a body and the performance of tasks of that individual or body is subjected to supervision, direction or request that provide information or justification for their actions.

In the implementation of development projects in local governments, the elected and appointed officials play a significance role in ensuring the success of the projects. Therefore, the relations between political and administrative officials are critical and mandatory in increasing the local governments' performance. In performing its mandatory and permissive functions, local governments depend on cooperation between the elected and the appointed officials. Political-administration relations in the Local Government Authorities are essential in ensuring better service delivery to the public. The elected and the appointed officials have to work together and in harmony in order to discharge local government functions (Landa, 2017). It is argued that political-administration relation is important in improving government functions. For instance, Khair *et al.* (2012) holds that bureaucratic responsibility in democracy largely depends on the existing political and administration relationship. Despite that, politics and administration are two separate and analytical components; largely they are still integrated into the same political process. In showing the need for positive relations between the elected and appointed officials, Njunwa (2006) notes the existing relations between the elected and local administrators in the performance of Local Government Authorities (LGAs).

Public development projects in local governments become instrumental in improving public services delivery in local communities. Through public development projects, the local communities implement various development projects, which include educational, health, water and sanitation, and agriculture (Boex *et al.*, 2015). Through decentralization by devolution (D by D), Local Government Authorities (LGAs) have the mandate of providing social services to the public through establishing and implementing development projects in their areas of jurisdiction (Njunwa, 2006; Baletito *et al.*, 2012). This paper focuses on the construction of education and health infrastructures such as classrooms, teacher's houses, laboratories, health centres, and

dispensaries, projects, which are implemented in the local government through communities' self-help system. It should be noted that 70 percent of the total local government's budget in Tanzania is allocated for primary education, 18 percent is allocated for basic health care, and the remaining 12 percent is for road maintenance and agriculture (Boex, 2003). In the financial year 2017/2018 with community self-helps Local Governments were committed to the construction of 2,000 classrooms and rehabilitation and upgrading of the existing facilities (UNICEF, (2018). In the health sector, in year 2017/2018, the government allocated Tshs. 2,222 billion equal to 7.0 of the national budget (Tarimo and Lee, 2018).

Despite the efforts made by the Government of Tanzania to ensure that majority of rural Tanzanians have access to quality education and health services, many rural communities still lack access to these services (Kisimbe *et al.*, 2014; Landa, 2017; Njunwa, 2017;). Most of the public development projects in education and health sectors are characterized by poor accountability, lack of transparency, and poor participation of local leaders and communities at large (Muro *et al.*, 2015; Makorere, 2012; Bratton, 2011). As for supervision process of local councils in Tanzania, REPOA (2008) revealed that local governments' performance suffers from poor access to information and lack of culture of transparency, poor accountability, and poor representation of citizens by their councillors. This is probably a result of lack of adequate information on governance regarding the implementation of the projects.

The current study examines governance aspects in managing the relationship between the elected and the appointed officials in the construction of health and education projects in Morogoro District Council. The paper focuses on four principles of good governance: - participation, transparency, accountability, and the rule of law. Four aspects were selected because interaction between the elected and the appointed officials in the implementation of those projects depends much on these aforementioned aspects of governance.

2.0 Theoretical Framework

The study is guided by the complimentary model, which was proposed by Svava and Jacobsen (Azunu, 2013). The model came as a critique to the orthodox/classical model, which was developed by Woodrow Wilson who propounded that politics and administration are two separated fields and must be separated from each other, and that political questions are different from administrative questions (Montjoy *et al.*, 1995; Siggen *et al.*, 2010; Azunu, 2013). The model encourages involvement, transparency, and accountability for both the elected and the appointed officials in their day-to-day functions. According to the complimentary model, the elected and the appointed officials have to work together, in harmony, and be interconnected in performing their duties (Goel, 2008; Jacobsen, 1999). Svava (1999) supports the partnership model by emphasizing on the complementarities of politics and administration through interdependency, reciprocal influence, and extensive interaction between the elected and the appointed officials.

In order to adhere to the principles of governance such as participation, transparency, accountability and the rule of law and policies, the elected and the appointed officials are supposed to work in harmony and in mutual understanding. The appointed staff must be engaged in the discussion about political issues and strategies. Similarly, the elected officials should provide their opinions on the implementation of political decisions. As Jacobsen (1999)

observes, the level of trust between the elected and the appointed officials is crucial in ensuring transparency and accountability. Distrust between the elected and the appointed officials are likely to affect their relationships and hence lead to poor performance.

2.1 Research Methodology

The study was conducted in Morogoro District Council, Morogoro Region. Eight (8) villages that were actively implementing education and health public development projects were purposively selected from four (4) wards. The districts were selected because the majority of development projects failed to achieve the targets or were below standards (URT, 2015). The selected wards were Mkambarani, Mkuyuni, Kiroka, and Kinole (Morogoro District Council, 2003). The villages include Pangawe, Kizinga, Bamba, Kibwaya, Mkuyuni A, Tandai, Kirundwa, and Kiziwa. The study employed a case study research design, which is employed within the context of its use, that is, within the situation in which the activities take place (Zainal, 2007; Bryman 2008; Creswell, 2014). In this study, purposive sampling procedure was employed to select the key informants and participants in the focus group discussions (FGDs).

Qualitative data were collected using a combination of methods of data collection including key informant interviews, focus group discussions, and documentary reviews. An interview guide was used to collect information from key informants. Interview technique is useful in collecting in depth qualitative information from the respondents (Bryman, 2008; Baxter *et al.*, 2008). Key informants were purposively selected based on their in-depth understanding and knowledge on the study (Kothari, 2005). These included a Member of Parliament (MP), the District Executive Director (DED), Ward Councillors, Ward Executive Officers (WEOs), Village Executive Officers (VEOs), Ward Community Development Officers (CDMs), Village Chairpersons, and Chairpersons of the Development Committees. Focus Group Discussions (FGDs) were also used to collect qualitative data. Four (4) FGDs with 42 participants were conducted in each selected wards. Participants in the FGD, and which ranged from eight to eleven, were purposively selected based on their knowledge and experience in the construction of the projects. Participants in FGDs included school and health projects committees, Head Teachers, local peoples who were involved and had in-depth information about implementation of projects. A semi-structured checklist was used to guide FGDs. The data were analysed using content analysis whereby data from focus group discussions and key informants were interpreted and organized into different themes based on the conceptual description of ideas and concepts.

3.0 Results and Discussion

Governance of political-administration relations in the implementation of public development projects in this paper is based on some pillars of good governance. UNDP (1997) identifies nine principles of good governance as participation, the rule of law, transparency, responsiveness, consensus orientation, equity, effectiveness and efficiency, accountability, and strategic vision. This paper focuses on four (4) principles of governance namely, participation, transparency, accountability, and the rule of law as they are directly related to the projects implementation.

3.1. Participation aspect in the projects implementation

Many respondents in FGDs were positive on the involvement of both the elected and the appointed officials in designing and implementing public development projects. The findings

revealed that the elected officials work together with the appointed officials in designing development projects through internal and outside meetings. They work together in organizing and conducting village assembly to discuss the types of development projects to be implemented in their localities. One of the village executive officers said:

“It is not possible to implement any public development project without involving their elected officials who play a great role in mobilizing human and financial resources needed for the projects implementation” (Key Informant Interviews at Mkuyuni Ward, 16th June, 2017).

The elected officials “Village Chairpersons” normally chair village meetings while Village Executive Officers (VEOs) serve as secretaries to the meetings. A Village assembly is a legal organ, which was established under section 24 of the Local Government (District Authorities) Act, No 7 of 1982, and meets four times in a year, after every three months. The study found that, further that after the deliberations in the village assembly, the appointed officials discuss and approve budgets and the projects as a whole in the village councils or Ward Executive Committees (WDCs). It should be noted that both village councils and the WDCs constitute both the elected and the appointed officials as members. Village councils are composed of the elected and the appointed officials who are responsible for designing development projects and preparing budget for the projects through Village Finance and Planning Committees (URT, 2012).

During the implementation of the projects, the elected and the appointed officials work together in influencing and mobilizing the local people into participating in the implementation of the projects. The findings of this paper revealed that, village chairpersons and hamlet chairpersons were the ones responsible for collecting financial contributions from the households. In case, there are any challenges in the projects implementation, the elected, and the appointed officials work together to find the solutions.

These findings imply that, the designing and implementation of the development projects were highly dependent on the involvement of the local people, local leaders, and the appointed officials. Each side contributed to the success of the projects implementation through working together. In this case, the involvement of both the elected and the appointed officials in decision-making and implementation is congruent with the complimentary model as advocated by Svava, which insists on the involvement of both parties. The study findings are in line with the findings in a study conducted by Sigala (2015) in Mbeya District Council who revealed that there was a high level of participation of the local people and their representatives in decision-making and implementation of development activities in their localities. The study by Sigala (ibid) showed that the elected officials participated in the village assembly, Village Council, various Village/Ward Committees, and Ward Development Committees (WDCs). The findings revealed further that the elected officials mobilize people in self-help activities including the collection of financial contributions and mobilizing people to provide physical labour to facilitate the implementation of the projects.

3.2 Transparency aspect in projects implementation

Transparency plays an important role in establishing a strong relationship between stakeholders in any development projects. High level of transparency increases trust and confidence between the elected and the appointed officials. The study findings revealed that transparency between the elected and the appointed officials in projects implementation varied from one village to another because of many factors. It was observed for example that, at Kiziwa, Pangawe, Kiroka, and Tandai, both the elected and the appointed officials adhered to the principle of transparency as stipulated by the Local Government (District Authorities), Act No. 2 of 1982. Ward Executive Officers (WEOs) provide information about the funds directed to development projects to the elected members through WDCs and Village Councils. Together with the elected officials and Development Committee's members, they, discuss how to spend the financial resources for development purposes. This was reported by a hamlet chairperson who had the following to say:

"Our Village Executive Officer gives us all information about money that has been collected for development projects implementation through village council and village assembly meetings, and we are happy with his commitment and faithfulness" (Key Informant Interviews at Kizinga Village, 17, July, 2017).

However, in other villages such as Mkuyuni A and Bamba, the study found that the appointed officials were not transparent on financial matters. The appointed officials were not exposing the exact amount of revenues and expenditure. They had the tendency of colluding with project development committees to misuse project funds. During key informant interviews, one of the elected officials emphasized that:

"We always come into conflict with Ward Executive Officers/ Village Executive Officers because they are not transparent when it comes to expenditure of project funds, and they are not providing reports in time" (Key Informant Interviews at Bamba, 12, July, 2017).

Similar findings were reported by participants in one of the focus group discussions at Kinole and Mkambarani wards who insisted that the appointed officials (WEO and VEO) were always for self-interest and were not releasing financial information to the public. During key informant interview, members of the project committee had this to say:

"We are supposed to conduct village assembly meetings three times in a year, and one of the objectives of the village assembly meetings is to receive financial reports. We are very disappointed with VEO who is not conducting the assembly and providing reports to us as it is required" (Key Informant Interviews at Mkuyuni A Village 14th June, 2017).

The findings from focus group discussion were supported with data by Mkuyuni A and Bamba Villages, which showed that only one village assembly was conducted in the year 2016 and., no reason was provided as to why they conducted only one village assembly. Villagers complained that people were not interested in meetings. In this case, the findings are in contrast with the complimentary model, which affirms that, the elected and appointed officials have to work in harmony, trust, and transparency in order to have better performance.

These findings imply that there is a need for regular meetings of the local people with the elected and the appointed officials to provide and discuss information about projects' funds. Lack of transparency and communication creates poor relations between the elected and the appointed officials with regard to project implementation. In most cases, conflicts between the elected and the appointed officials usually arise when there is lack of transparency on the expenditure of the project funds. The study observed that legal meetings were not conducted in time to provide information to the elected officials.

Similar observations are reported by Ogbette *et al.* (2018) and Muro *et al.* (2010) who reveal that the appointed officials in the Local Governments are not transparent enough to the people and to their elected officials, and they refuse to provide information on the exact amount of revenues received from the Government and on community participation in public development projects. The findings in a study by Muro *et al.* (ibid.) reveal further that misuse of financial resources and corruption is a major source of lack of transparency on the implementation of the projects. The appointed officials have a tendency of failing to disclose information that may prove potentially harmful to them and concerns that politicians would use such performance failure against them. Similar findings are reported in other studies (e.g. Sarwatt *et al.*, 2014; Sigalla, 2015; Kesale 2017) which showed that sufficient information about incomes and expenditures on public development activities was not provided to the local people and their elected representatives.

3.3 Accountability in the project implementation

The findings revealed that there was dual-accountability on the part of the appointed officials in the implementation of the projects; this as a result, influenced the relationship between the two. In reality, the appointed officials have to be accountable to the District Executive Director (DED) and report on their performance. However, in the field, the appointed officials are also accountable to the elected officials and receive orders and directive from them (the elected officials). The appointed officials such as WEOs and VEOs are accountable to the elected officials through providing development reports to the latter before submitting it to the village councils or village assembly meetings. During key informant interviews, one of the Village Executive Officers had this say:

“When it comes to accountability, the appointed officials are highly confused on who is exactly supposed to be accountable to, because the elected officials want appointed officials to be accountable to them as their bosses” (Key Informant Interviews at Mkambarani Ward, 16 May, 2017)’.

The study found that the elected officials increased accountability of the appointed officials through supervising and scrutinizing their performance in project implementation. If the appointed officials underperform, the elected officials would report this underperformance to the higher authorities such as Heads of Department or DED. These findings are in line with the findings in other studies such as Landa (2017) and Kesale (2017) who report that in the structure of local government system councillors act as watchdogs of the performance of the local government personnel in improving social-economic development through social service delivery. The findings by Landa (2017) and Kesale (2017) studies revealed further that the appointed officials have to provide regular reports on the implementation of development projects to the elected officials who act as leaders and representatives of the local people.

The success or failure of the projects is largely dependent on the accountability on the part of the elected officials (Kironde *et al.*, 1997). As it was stated earlier, most of the public development projects are initiated by local people through the support of their elected officials. The findings of the current study revealed further that the elected officials play a major role in determining and supervising the implementation of development activities and public development projects. In the local government structure, at ward and village levels, the elected officials “Councillors” act as Chairpersons and WEOs act as Secretaries in the Ward Executive Committees (WDCs); while at the Village Council, the village chairpersons act as chairpersons and VEOs act as secretaries to the Council.

The study findings are in line with the findings in a study conducted by Mafuru *et al.* (2015) who revealed that at Mvomero District Council, the elected officials complained that the appointed officials were not accountable in the implementation of development projects. This is because the latter were not residents of their localities. The elected officials believed that the local people were not responsible for the employment of the appointed officials. Therefore, the elected officials considered the appointed officials as individuals who lacked patriotism, selfish, and embezzled the project funds to pay themselves undue overtimes and allowances. During one of the key informant interviews, one of the elected officials said:-

“The elected officials are neither committed nor accountable to the success of our projects because they are not living in our villages and even their children are not studying in our poor village schools and getting services in our poor health centres”
(Key Informant Interviews at Kiroka Ward, 14 March, 2017).

This implies that is accountability problem among the appointed officials in the projects implementation in the local governments. The elected officials fail to hold appointed officials accountable due to weak internal and external control systems, corruption, and low level of education and awareness on issues of policies and laws (World Bank, 2016; Kironde *et al.*, 1997). Various studies (e.g., Lyatonga *et al.*, 2015 Mafuru *et al.*, 2015; Kesale, 2016) show that the appointed officials have been misusing development projects' funds for personal interests. On other hand, the findings revealed that, appointed officials also complain on poor accountability of the elected officials in the implementation of the projects. The elected officials say that the appointed officials get salary and allowances to implement projects, therefore it the appointed officials and not the elected officials who should be accountable to the projects. During one of the key informant interviews, one of the WEOs said:

“We are not getting support from politicians during implementation of the project simply because they complain that we are getting salary and allowances while they get nothing the project” (Key Informant Interviews at Kinole Ward, 25th April 2017).

3.4 Adherence to rule of law and policies in the projects implementation

The Rule of Law in the implementation of development activities in the Local Government is highly crucial in ensuring that justice and fairness prevail. The Public Service Act No. 8 of 2003 requires public servants to adhere to the rule of law, respect for human rights, government policies, and government circulars. Local governments have been given power to establish their own by-laws, and all parties (the elected and appointed officials) have to adhere to these by-laws. In the implementation of development projects, both parties need to adhere to policies, guidelines, and agreed decisions. The study findings revealed that the elected officials were more influenced by personal and political interests than by adherence to the laws and policies. This finding was confirmed during a key informant interviews with one of Village Executive Officer who said:

“Politicians always do not adhere to the rule of law guided by government policies; they are always for political interests and not otherwise, they support law or policy if only it helps them to remain in power (Key Informant Interview, Konole Ward, 22 April, 2017)

The appointed officials accuse the elected officials of not adhering to the decisions, policies, and by-laws that were approved by the village assembly meetings. For example, if it is agreed that any person who refuses to contribute for the projects should be taken to court, in most cases the

elected officials obstruct the implementation of such measures for political reasons. During a key informant interview, one of the head teachers had the following to say:

“It is impossible for the elected officials to implement a policy or a by-law which negatively affects their voters; the only desire of politicians is to remain in power, build trust to the electorate, and be re-elected (Key Informant Interviews at Mkambarani Ward, 22 May, 2018).

These findings imply that personal and political interests influence the elected officials' decision to adhere to the policies and to the rule of law in the implementation of the projects. Therefore, it is important to consider various factors before establishing the by-laws or policies and check out on their implication on the performance of the elected officials. These findings are in line with the findings in a study by Mafuru *et al.*, (2015) in Mvomero District Council who revealed that despite the existence of code of conduct that provides a clear demarcation of the roles between the elected and the appointed officials, the former do not respect the realm of and the latter. This is something, which influences negatively the implementation of development projects. The authors revealed further that the elected officials sometimes perform the roles of an administrator in the projects, and these include collecting money for construction of roads or supervising project works without the consent of the appointed staff. These findings were supported by one of appointed officials who had this to say:

“In most cases, politicians who are supposed to work as policy makers and representative of local people, also intervene in our responsibilities such a collecting revenues, selling land and supervising projects and sometime prohibit us from performing our professional duties (Key Informant Interviews at Kiroka Ward, 16 March, 2017).

3.7 Conclusion and Recommendations

The implementation of public development projects in Local Government Authorities (LGAs) in developing countries is a serious problem. The implementation of development projects depends much on the good relationships between the elected and the appointed officials and adherence to the principles of good governance. The extent to which the elected and the appointed officials improve participation, adhere to the rule of law, transparency and accountability increase the chances of success in the implementation of development projects. The study concludes that there is low level of transparency, accountability, and adherence to the rule of law in the implementation of development projects in the local governments. The statutory meetings such as village councils, village assemblies, and WDCs are not conducted regularly; therefore, the elected officials and the local people do not receive any information about the implementation of their development projects. The appointed officials lack the culture of transparency, especially on matters related to expenditure in the implementation of the projects.

The study recommends that local governments at the district level should monitor adherence to good governance of the elected and appointed officials in the construction of health and education infrastructure projects. Local governments should build capacity and awareness among both the elected and the appointed officials on good governance aspects and its importance on the successful implementation of the projects. This would ensure effective use of the public funds directed towards improving social services in the Local Government Authorities (LGSs). The study recommends further that, the elected officials who are responsible for organizing

meetings should ensure that meetings such as village assemblies, village councils, and WDCs are conducted regularly. This would guarantee transparency and accountability of the appointed officials in the implementation of public development projects.

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Trade, Market Size, Exchange Rate and Foreign Direct Investment: Co-Integration Analysis for East African Region

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Abstract

The main objective of this paper is to examine the relationship between Trade, Market size, Exchange rate, and Foreign Direct Investment (FDI) in East African Economic Region. Many studies regarding FDI in this region focused only on individual countries; however, this study employs a different approach from the previous studies by treating East African Region as a single huge market. The Gravity and Mundell's models are employed to present theoretical underpinning and conflicting theoretical and empirical evidence. Regression analysis is done using Vector Error Correction Model. The findings show that trade, market size, and exchange rate have positive and significant influence on inward FDI and the relationship between is long run. It is recommended that EAC should promote favourable terms of trade with the rest of the world, invest in research and development to edify education system that would produce competent workforce, and control exchange rate fluctuation to maintain foreign investors' confidence. Member countries are advised to promote the region as a single foreign direct investment destination rather than each country doing this individually. There is also a need for, transparency on customs' policies among member states.

Key Words: FDI, Trade, Market Size, REER, Co-integration

1.0 Introduction

Protagonists for regional economic grouping contend that countries can foster development and growth when they jointly operate as one economy and that economic liberalisation has a positive and significant effect on the foreign direct investment (Rasekhi and Seyedi, 2011). Foreign direct investment (FDI) refers to a commitment in which a firm invests capital in overseas market by creating, managing, and conducting value-adding activities in those countries. It is acknowledged that on the one hand, FDI has been a motivating factor of economic development of host countries, and on the other, the ongoing liberalization of FDI and trade policies lead to an increase in FDI (Feils and Rahman, 2008).

Many of the studies focused on individual countries (Kakar, 2011; Otieno et al, 2013; Shawa, 2014; Mfinanga, 2018) in explaining the role of FDI to economic growth, determinants of FDI and analysing FDI theories on Trade, market size, exchange rate, and their influence on attracting Foreign Direct Investment. There are few studies targeting economic regions and these

mainly focused on North America Free Trade Area (NAFTA) and Middle East and Northern Africa, that is, MENA countries (Brahim and Rachdi, 2014).

Regional economic integration may provide member countries with additional location-specific advantages that can attract multinational enterprises. According to Economic theory by Dunning (1993), nations can upsurge FDI inflows when they function as one gigantic economy because bigger market sizes are very important for attracting more FDIs. East African Community (EAC) as an economic bloc has not been empirically explored in detail to determine the relationship between market size and FDI. East African Community comprises of six member countries, Tanzania, Kenya, Uganda, Rwanda, Burundi and the new member South Sudan that joined in 2016 after acquisition of its independence in 2011. The region covers an area of 2.5 million square kilometres.

This paper carries out an empirical analysis of the relationship between Trade, Market size, Exchange rate, and Foreign Direct Investment. The paper is based in a study, which is inspired by the ongoing treaties within the East African Community economic region with the aim of boosting economic growth and welfare of member states and hence attracting more FDI. East Africa is one of the fastest growing regional economic blocs in the world with a population of not less than 172 million citizens (EAC, no date). Africa including EAC countries experiences a significant decline in FDI inflows from 2014 to 2016 (UNCTAD, 2016). FDI is regarded as an important factor for economic welfare of developing countries therefore because of the importance of the subject under study; the paper addresses macroeconomic factors influencing FDI. The paper is grounded on the theoretical underpinnings of the gravity model, Mundell's model, and the previous researches (e.g. Anyanwu, 2012; Otieno *et al.*, 2013; Tuluze *et al.*, 2016; Mfinanga, 2018). However, a different approach is employed by providing a new way of looking at East Africa as a single market and destination for FDI using continuous data covering a period of 1980 to 2016.

Unlike previous studies, this paper studies this phenomenon in the context of emerging market by assimilating workforce as a control variable. Previous empirical studies (e.g. Daniels, *et al.*, 2009) did not focus on this phenomenon despite their emphasis on the theory

In the current study, hypotheses are developed with reference to relevant literature and then tested to determine the direction of the relationship between capital flow (FDI) and market size, trade openness, exchange rate, and workforce. Two variables are employed as measures for market size of the economy: On the one hand is Gross Domestic Product (GDP). this bases on Krugman and Obstfeld (2006), that there are more FDI inflows among rich countries and that technologically developed, and economically stable countries or regions attract large quantities of FDI in the World (Hasan, 2007). If foreign investors want to sell their products in the host countries, large domestic markets are found to be important (Mfinanga, 2018) Population growth (percentage increase) is also involved as a facilitating factor for market size as explained by Aziz and Makkawi (2012). On the other hand, Masca and Jude (2009) show that FDI depends on consumption and vice versa, and that an increase by 1percent in the final consumption leads to an increase of 0.66percent of FDI stock in the following year. Trade openness is taken as a proxy for trade between EAC and the rest of the world, real effective exchange rate (REER) is employed as a measure for the exchange rate.

The approach employed in the current study differs from the one employed in a study by Otieno et al. (2013) in that, instead of using panel data that present each economy of East African Community, the region is treated as one whole economy using time series data for a period of 37 years (1980-2016). This would give a clear picture of the influence of trade, market size, and exchange rate of the economic region on the inward FDI.

Workforce was found to be a bottleneck for FDI inflow to East African Community; for it was found to affect significantly the FDI negatively. The size of the economy and the cost of capital were found to have an impact on inflows of FDI in the East African Community. Finally, the paper ends with policy recommendation basing on the findings, suggestions for new research agenda for East African Community toward Economic integration and FDI attraction are provided emphasising on issues such as cultural and institutional differences between member states.

1.1 Trends of FDI in recent years

Global FDI inflows in recent years

The world experienced a sharp rise of FDI in 2015; however, according to UNCTAD World Investment report of 2017, global FDI flows lost growth thrust in 2016, implying that the road to recapture growth remains rough. FDI inflows decreased by 2 per cent to \$1.75 trillion, amid weak economic growth and significant policy risks, as perceived by multinational enterprises (MNEs). FDI flows to developing Asia contracted by 15 percent to \$443 billion in 2016. FDI flows to FDI in structurally weak and vulnerable economies remained fragile. Flows to the least developed countries fell by 13 per cent, to \$38 billion (UNCTAD, 2017).

FDI inflows to Africa

According to UNCTAD (2017), FDI inflows to Africa accounted for between 2.8 and 4.4 percent of the world's total, while FDI outflows were not more than 0.5 percent. The flows to Africa turned increased from \$0.1 billion in 2015 to -\$1.3 billion in 2016. Angola remained by far the largest FDI host in LDCs, hosting nearly 40 percent of the total foreign investment flows to the group. However, inward FDI declined for the second consecutive year from a record of \$17 billion posted in 2014 to \$14 billion (-11 %). FDI flows to Sudan, another oil-related economy, fell to \$1 billion (-38 per cent), as opposed to the peak of over \$2 billion in 2012. Northern Africa has been the top destination for FDI in Africa. South Africa shows a difference in FDI inflows from the rest of African countries, in that while in other countries large percentage of FDI goes to natural resources; much of foreign direct investment in South Africa goes to the manufacturing sector.

Middle Africa has been the second FDI destination over the previous years. However, macroeconomic instability and poor investment promotion strategies have been responsible for the declining FDI trend in the African region (Dupasquie and Osakwe, 2003). Two leading mineral exporters – the Democratic Republic of Congo and Zambia – also experienced a further shrinking of their FDI in the face of low commodity prices. In the case of the former, despite the growing interest from Chinese firms, FDI fell for the fourth consecutive year to \$1 billion (-28 percent), which was significantly below its 2012 peak of more than \$3 billion. Ethiopia recorded

a strong growth in FDI (up 46 percent to \$3 billion) and became the second largest LDC host economy, up from the fifth position in 2015.

FDI inflows to East African Countries

According to the United Nation Conference on Trade and Development (2017), inward FDI in The United Republic of Tanzania, which is also expected to become a new producer of natural gas in the future, slipped to \$1.4 billion (-15 per cent) for the third consecutive year because of uncertainties on FDI policies and tax rules (UNCTAD, 2017). The FDI to Kenya continued weakening and collapsed by 36 per cent to \$394 million in 2016 – only slightly more than a quarter of her 2011 level. This happened despite investment reforms and a supportive domestic policy environment. FDI inflow to Uganda dropped from \$1057 million in 2014 to \$738 million in 2015 and dropped further to \$626 million in 2016. However, inflows to Burundi increased from \$65.1 million to \$146 million, while FDI in Rwanda dropped in three consecutive years from \$459, \$380, and \$342 million in 2014, 2015, and 2016 respectively. The same report shows that East Africa's foreign direct investments inflows declined by 25.3 percent to \$6.6 billion, down from \$8.8 billion in 2016, Kenya recorded the highest decline in FDI inflows, followed by Uganda.

2.0 Literature Review

2.1 Theoretical Literature Review

The Gravity Model

The gravity model of trade in international economics similar to other gravity models in social science predicts bilateral trade flows based on the economic sizes of (often using GDP measurements), and distance between the two units. The model was first used by Tinbergen (1962). The basic theoretical model for trade between two countries (i and j) takes the form of:

$$F_{ij} = G \frac{M_i M_j}{D_{ij}}$$

Where F_{ij} is the trade flow between two trading partners, M_i and M_j are the economic masses of each country (also can be capital flow), D is the distance, and G is a constant. This model has also been utilised in international affairs to appraise the impact of treaties and alliances on trade, and to test the efficiency of trade agreements and organizations such as the North American Free Trade Agreement (NAFTA), Southern Africa Development (SADC), and the World Trade Organization (WTO). Some studies used a variety of cost related variable as an alternative to distance to imply cost of doing business. As Asafo (2007) argues, the gravity model goes beyond the idea of such model to take advantage of the size of the economies concerned and their distance (cost of doing business). The cost of doing business may also be reflected by the risk in the macroeconomic environment of the recipient economy for FDI. As is the case in this study, poor infrastructure may be a discouraging factor to foreign investors for it increases distance in the form of the cost of doing business.

The Mundell's Model

This model enlightened the notion of FDI using Neo-Classical context, the model postulates that FDI is the outcome of restriction of merchandise trade. The theory argues, that prices equalisation is the consequence of movement of capital across nations; and that capital is exported by capital-abundant nations until the returns are equalised. The same idea applies to

trade barriers as a motivating factor for FDI, and that countries restricting capital mobility will increase trade flows. For this reason, Mundell's ideas treat trade and investment as substitutes. This concept fails to explain the role of local investment in attracting more FDI.

2.2 Empirical Literature Review

Some empirical studies on trade and FDI proved wrong the Mundell's (1957) theory, which claims that trade barriers influence capital flows among nations. Trade liberalisation and increasing internationalisation of business firms resulted in more FDI than before. Scholars, (e.g. Onyeiwu and Shrestha, 2004; Anyanwu, 2012), revealed that openness has significant influence on FDI and that the increase in trade openness causes more FDI to flow into African countries. Similarly, Maku (2015) found that openness to trade has attracted FDI significantly, as it caused an increase on FDI inflows by 3.2 percent.

The impact of regional economic integration on investment is a predetermined conditioned by inherited policies, as well as by the prevailing macroeconomic situations (Blomström *et al.*, 1998). As Jordaan (2004) observes, FDI will transfer to nations with greater and expanding markets and larger purchasing power, where businesses can possibly obtain higher returns on their capital and by implication receive higher profits from their investments. Market size in the form of GDP has been proved to have a strong causal relation with FDI even for individual countries (Kakar and Khilji, 2011). According to Mfinanga (2018), small market size discourages the inflow of foreign direct investment.

Applying Generalised Least Squares, Otieno *et al.*, (2013) found that Regional Integration has no positive impact on FDI. However, they recommended that East African countries should also maintain financial stability so that investors can have the confidence in their expected future profits. In order to attract higher amounts of FDI, developing countries should stress regional economic integration, or at least, they should make regional trade agreements or free trade agreements (Tuluze *et al.*, 2016). Brooks and Sumulong (2003), in their studies on the policy context on the occurrence of FDI flows found that a favourable policy framework for FDI generally provides economic stability, transparent rules on entry and operations, equitable standards of treatment between domestic and foreign firms and secures the proper functioning and structure of the markets.

Using pooled cross-sectional, time-series regressions; Feils and Rahman (2008) ascertain that NAFTA has had a positive effect on FDI inflows into the region though not all countries benefited equally. Empirical evidence suggests that policies encouraging domestic investment help to attract international investment. Anyanwu, (2012) analysed factors that influence FDI inflows in Africa and found that market size, trade, rule of law, foreign aid, natural resources, and past FDI inflows have a positive effect on FDI inflows. Wadhwa and Reddy (2011) pointed out that GDP is an important factor for market seeking FDI rather than resource seeking FDI. Aziz and Makkawi (2012) found that large population size influences spending power.

Moreover, Lily *et al.*, (2014) found that stable exchange rate and appreciation of currencies have a positive impact on FDI, and depreciation of the value currencies affect FDI negatively in the Asean economies. However, later on Mfinanga (2018) found that the fluctuated exchange rate

policy adopted by the countries could increase the inflow of foreign direct investment in the country. A study by Deseatnicov and Akiba (2016) clearly demonstrate that multinational enterprises are less tolerant to the exchange rate risk. Phillips and Ahmad-Esfahani (2008) pointed out that there is no consensus about the nature of the relationship between exchange rate and FDI in either the theoretical or the empirical work. Studies provide varying findings on the relationship between FDI and Exchange rate, for example; foreign direct investment from Japan and the United States to the Southeast Asian countries is considerably affected by bilateral real exchange rates (Goldberg and Klein, 1997).

2.3 Hypotheses

Hypothesis 1: *There is positive relationship between trade openness and FDI*

Hypothesis 2: *There is a positive relationship between GDP and Foreign Direct Investment (FDI).*

Hypothesis 3: *There is a positive relationship between population growth and Foreign Direct Investment (FDI).*

Hypothesis 4: *There is a positive/negative relationship between Real exchange rate and inward FDI in the EAC.*

Hypothesis 5: *There is a positive/negative relationship between workforce and FDI.*

3.0 Methodology

3.1 The Empirical Model

In this paper, the following empirical model is proposed for Trade (TRADE), Market size (GDP and Population) and exchange rate as independent variables, in ward Foreign Direct Investment (FDI) as a dependent variable, and Workforce as a control variable; large GDP and Population reflect higher demand for goods and services. The size of the population may not be ignored by MNEs as they seek to increase their profits in the international markets (Kilgore *et al.*, 2007). This is a reason why population is considered as a necessary variable in the analysis.

$$FDI = f(TRADE, GDP, POP, REER \text{ and } WF) \dots\dots\dots (1)$$

Therefore, our linear empirical model for the analysis becomes:

$$FDI = \beta_0 + \beta_1 TRADE + \beta_2 GDP + \beta_3 POP + \beta_4 REER + \beta_5 WF + Y_t \dots\dots\dots (2)$$

Whereas:

FDI = total FDI inflows in East African region in million USD. TRADE = Trade openness, that is, Total export and import as percentage of GDP. GDP = Real Gross Domestic Product in million USD. POP = Average East Africa urban population as the percentage of East Africa total Population, forming a bigger part of consumers for industrial products and services. REER = Real Exchange Rate (Volatility of exchange rate in East African Region). WF = Average East Africa labour force as the percentage of the total regional population. β_0 is a constant and Y_t is an error term representing other variables that influence the inflow of FDI in the region, but are not integrated in the model, and β_1 to β_5 are the corresponding coefficients of the independent variables.

3.2 Data Collection and Data Sources

All data used in this analysis are secondary. The researcher employed time series data covering the period of 36 years, from year 1980 to 2016. Data were collected from UNCTAD Statistics

online database; this source was specifically selected because it is relied upon and recognised worldwide as a steady source of macro data.

3.3 Data processing and Analysis

This paper employs quantitative time series data, which were analysed using statistical packages, Stata, OLS regression and the results are shown in Table 3.1.

Table 3.1 Results of OLS regression

Variable	Coefficient	Dependent variable= FDI		
		Standard error	t-statistics	Probability
C	7368.161	3091.522	2.38**	0.024
TRADE	0.9782054	3.586229	0.27	0.787
GDP	0.004683	0.001563	2.60**	0.015
POP	0.0075804	0.0045488	1.67	0.107
REER	7.947813	2.476415	3.21***	0.003
WF	-183.5892	67.13809	-2.73***	0.011
R-squared = 0.9721,		Durbin-Watson Statistic (original) = 2.4		
Adjusted R-squared = 0.9671,		Breusch-Pagan / Cook-Weisberg test =		
Probability (F-Statistic) = 0.0000		chi2(1) = 1.91		
		Prob > chi2 = 0.8623		

Source: Author's computation from data analysis (2018)

After OLS regression, the following tests were applied; Phillip and Perron Unit Root Test (to measure order of integration) and Johansen Test for co-integration (to measure the long run/short run relationship between variables), and finally, Error Correction Model (VECM) was applied. The value of Durbin-Watson Statistics shows the availability of autocorrelation, and Breusch-Pagan/Cook-Wesberg test shows the presence of heteroscedasticity. Therefore, the results of OLS regression will not be blue; this calls for further tests that are presented in part 4.0.

4.0 Findings

4.1 Unit Root Test

Time series regression desires data, which are stationary (data that have no unit root). Data were tested using Phillip Perron (PP) unit root test. PP tests the order of integration of the variables. Regressing data that are non-stationary would more than likely yield to incorrect results because their means change over time.

Null hypothesis: At levels, data are not stationery that is, they have unit root

After carrying the PP Unit root test at levels as presented in Table 4.1, all the variables were not stationary implying that we could not reject the null hypothesis of the presence of unit root at levels. Therefore, the unit root test was further performed at first difference and the results are shown in Table 4.2.

Null hypothesis: at first difference, all data are not stationary, or have unit roots.

Table 4.1 Unit root test at levels

VARIABLE	PP Test statistics	Order of integration
FDI	1.608	I(1)
GDP	4.331	I(1)
TRADE	-0.760	I(1)
RER	1.181	I(1)
POP	1.904	I(1)
WF	-1.706	I(1)

Source: Author's computation derived from data analysis (2018)

Note:

- (i) McKinnon (1991) critical values are used to reject the null hypothesis of the unit root
- (ii) I (0) means the variable is stationery
- (iii) I (1) means the variable is integrated at order one
- (iv) Critical values for PP are *** 1% = -3.696, **5% = -2.978, *10% = -2.620

Table 4.2 Unit Root Test at first difference

VARIABLES	PP Test statistics	Order of integration
FDI	-5.301	I(0)***
GDP	-3.284	I(0)**
TRADE	-5.112	I(0)***
RER	-4.949	I(0)***
POP	-5.974	I(0)***
WF	-12.217	I(0)***

Source: Author's computation derived from data analysis (2018)

Note:

- (i) McKinnon (1991) critical values are used to reject the null hypothesis of the unit root
- (ii) I (0) means the variable is stationery
- (iii) I (1) means the variable is integrated at order one
- (iv) Critical values for PP are *** 1% = -3.702 and **5% = -2.980

Regarding the results in Table 4.2, at first difference, all variables rejected the null hypothesis of the existence of unit root at 1 percent level (for FDI, TRADE, POP, RER, and WF), and at 5 percent level for GDP. Consequently, at first difference, all variables were stationery.

4.2 Johansen Co-integration Test

The Johansen test for co-integration was performed and the results are shown in table 4.3.

Null hypothesis: There is no co-integration among the variables.

The results show that there is co-integration among the variables, the null hypothesis of no co-integration is rejected; that is to say, the variables in our regression model have long run relationship; hence, a Vector Error Correction Model can be employed to determine the level of influence of the independent variables relative to dependent variable.

Table 4.3 Johansen tests for Co-integration

Rank	Trace statistics	5% critical value
0	165.5328	104.94
1	102.1351	77.74
2	63.7414	54.64
3	29.9769*	34.55
4	13.3257	18.17
5	2.8478	3.74

Source: Author’s computation from data analysis (2018)

4.4 Error Correction Model

Error correction model was introduced to incorporate the error term. The error term accounted for other variables that would have influence on the dependent variable but were not included in our empirical model; therefore, equation 2 became.

$$FDI = \beta_0 + \beta_1 DTRADE + \beta_2 DGDP + \beta_3 DPOP + \beta_4 DRER + \beta_5 DWF + L_ECT \dots\dots\dots (3)$$

Note: L_ ECT = the variable generated to account for an error term. A letter D means that the variables were stationary at first difference. Equation 3 is the one that was considered for VECM regression of the preferred model. The results for VECM analysis are presented in Table 4.4.

Table 4.4 Vector Error Correction Model Results

Dependent variable= FDI				
Variable	Coefficient	Standard error	t-statistics	Probability
C	27532.87	6335.385	4.35***	0.000
TRADE (-1)	19.53893	4.236462	4.61***	0.000
TRADE (-2)	20.75089	5.39574	3.85***	0.000
TRADE (-3)	35.281	5.049715	6.99***	0.000
GDP (-1)	.0084601	.006328	1.34	0.181
GDP (-2)	.0039482	.0068845	0.57	0.566
GDP (-3)	.0403242	.0053875	7.48***	0.000
POP (-1)	41.81336	1.820078	22.97***	0.000
POP (-2)	0	7.724064	0.00	1.000
POP (-3)	31.45383	6.015252	5.23***	0.000
REER (-1)	18.58497	1.86665	9.96***	0.000
REER (-2)	24.01682	2.228643	10.78***	0.000
REER (-3)	17.9092	2.938853	6.09***	0.000
WF (-1)	-337.1856	63.78735	-5.29***	0.000
WF (-2)	-385.1711	82.82428	-4.65***	0.000
WF (-3)	-297.6363	66.08409	-4.50***	0.000
R-squared = 0.9721		Probability (F-Statistic) = 0.0000		
Adjusted R-squared = 0.9671		Durbin-Watson Statistic = 2.04		

Source: Author’s computation from data analysis (2017)

*** Significant at 1% level, ** significant at 5% level

4.5 Interpretation and discussion of findings

From the results of Vector Error Correction Model (VECM), TRADE was found to have a positive and significant impact on FDI as lagged 1 up to 3 FDI showed significant positive influence on FDI. This implies that trade relationship between East Africa and the rest of the world influences foreigners to come and invest in the region. Among all variables, TRADE appeared to be the most influential predictor of FDI in East Africa; the increase in trade between the region and the rest of the world improves her competitiveness and hence attracts more foreign investors. Lagged 1 and lagged 2

GDP has a positive relationship with FDI, though the relationship is not significant, lagged 3. GDP was found to be positive and significant at 1 percent level, meaning that leaving other factors constant more than 95 percent of FDI inflows in East Africa is explained by the growth in GDP. Therefore, economic growth has a positive and significant impact on inward foreign investment. The insignificance of lagged 1 and 2 GDP is a prediction that a decline in EAC regional GDP would have an unfavourable impact on FDI.

On the other hand, lagged 1 and 3 REER was found to have positive and significant influence on FDI at 1 percent level. This shows that a decrease in the cost of obtaining domestic currency has a great impact on FDI in the region, because it becomes easy for foreign investors to buy domestic currency and invest. This is a reflection of the cost of capital; the lower the capital the more the investors are encouraged to operate in the East African Community. Population (POP) was found to have a positive and significant relationship with FDI. Population also reflects the size of the market, the higher the population the greater the demand for goods and services. Therefore, EAC with the total population of about 150 million people provides a potential large market that encourages inflow of market driven FDIs.

East African workforce was found to have a negative and significant relationship with FDI, an increase in the workforce causes FDI to decrease significantly. This implies that majority of the workforce in East Africa is unproductive because it is unskilled, and therefore it discourages investors who desire great returns from their investment. Many graduates in East Africa lack practical skills and creativity (Andrews, 2016) in running businesses, thus foreign investors are not attracted with East African labour market. In this paper, we found that regional integration could have a very important effect on foreign direct investment. This suggests that a move towards Regional Integration of East Africa would strengthen considerably FDI inflows to the region, given the difference in relative endowments and the recent trend to reduce trade barriers in many countries within East Africa Community.

4.6 Conclusion and Recommendations

4.6.1 Conclusion

In this paper the relationship between Trade, Gross Domestic Product (GDP) and population as proxies for market size, Real exchange rate as a measure of cost of capital, and Workforce were analysed. Time Series Data of 1980 to 2016 were tested using Unit root test then analysed by applying Co-integration Test and Vector Error Correction Model. Trade, Market size, and exchange rate are positively related to FDI inflow and the relationship is significant. Therefore, the findings have shown that the size of the economy matters in attracting FDIs. Workforce was found to be negatively related to FDI.

4.6.2 Policy Recommendations

East Africa as a region must assess all other significant factors for macroeconomic improvement such as trade openness, including maintaining macroeconomic stability, equitable resource distribution, and current account steadiness by avoiding unfavourable terms of trade. Regional Integration member countries should promote and improve factors responsible for GDP growth such as investment by offering credit and subsidies to private sector. This would create suitable environment for doing business and hence attract more FDI. Harmonization of rules and regulation concerning taxation and investment should be taken into consideration. Member states need to exercise transparency in tax exemption and other fiscal related policies.

The East Africa Community has to continue deliberately in investing in the area of Research and Development (R&D) to improve formal education and vocational training education to produce competent workforce capable of taking managerial positions in business enterprises. The EAC bloc needs to build capacity of its people (citizens) through seminars, workshops, trainings and support its population to take part in various levels of production and processes of different materials, which are attractive to FDIs home countries. Member countries are required to promote the region as a single foreign investment destination instead of every country promoting her foreign investment individually. Stability of exchange rates should be sustained from adverse fluctuation. Further research on the subject is also recommended in the region to include the impact of cultural and institutional differences on FDI among the member states.

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Does student Empowerment improve their Academic Performance? Evidence from Sokoine University of Agriculture, Morogoro

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Abstract

There is a growing interest in understanding the relationship between student empowerment and their academic performance. This paper examined this relationship in the context of university students learning environments. The study adopted a cross-sectional research design using a combination of simple random and systematic sampling techniques involving 200 undergraduate students. The constructs of Psychological Empowerment Instrument (PEI) and the Learner Empowerment Scale (LES) were used to construct Likert scale questions in estimating the students' empowerment. Descriptive statistical analysis was employed, and a summated scale approach was used to analyse Likert scale questions in estimating the level of empowerment. Correlation analysis was employed to gauge the relationship of the construct of empowerment and academic performance. The results show that the majority of students (82%) had moderate academic performance (GPA 3.0-3.9) out of a maximum of 5.0; the rest 9 and 9 percent had GPAs of below 3.0 and above 3.9, respectively. The majority of the respondents (62%) were categorized into low levels of empowerment. Female respondents were more likely to be categorized into higher levels of empowerment than were their male counterparts at 40.7 and 35.8 percent respectively. All paired linear relationships between the constructs of student empowerment were positive. The strength of the linear relationship different construct of empowerment varied from moderate to strong but all had a significant relationship ($p < 0.05$). The linear relationship between the constructs of empowerment and academic performance (GPA) was weak and none of them had any significant relationship. Therefore, overall, there was no linear relationship and association between the level of academic performance and the construct of empowerment. It is recommended to the Ministry of Education and university management to focus on the strategies that would improve student empowerment and academic performance such as student centered and participatory approaches.

Key words: *student empowerment, academic performance, academic competence*

1.0 Background

The term 'empowerment' has become a buzzword that connotes different meanings in different socio-cultural, socio-economic, and political contexts. Therefore, the use and meaning of the concept empowerment in many instances has been modified to save the meaning of the intended reality. Therefore, there are diverse terminologies, which are used to describe empowerment. Nevertheless, literature has shown some level of convergence over the common terms used to describe the term, and these include: self-strength, control, self-power, self-reliance, own choice, life of dignity in accordance with one's values, being capable of fighting for one's rights, independence, own decision making, being free, awakening, and capability to mention but a few (World bank, 2002). These definitions are embedded in local value and belief systems. Most definitions of empowerment focus on gaining control by someone over decision and resources that determine one's achievement of strategic life choices, objectives, and interests. For example, an empowered student can be defined as a student who has feelings of competence to perform a task that is meaningful to him/her and has an impact on the situation at hand (Frymeier *et al.*, 1996).

Empowerment is frequently cited as closely related to successful outcome in one's engagement in any activity (Gollaet *al.*, 2011; Denise, 2012). Empowerment in learning has been a topic of interest and there is increased interest and discussion on how it relates to or may have an impact on student's performance. For example, Weber and Patterson (2000) examined extensively the relationship between empowerment and its performance at places of work. In the context of learning environment, student empowerment represents any attitudinal, structural, and cultural activity, process or outcome in which students gain the ability, authority and agency of making decisions and implement changes in their own schools, learning and education, and in the education of other people, including fellow students (World Bank, 2002). Education is an essential means of empowering people with the knowledge, skills, and self-confidence necessary to participate fully in the learning process. University students are generally classified among the highly knowledgeable citizens due to different instructional knowledge and skills they get while studying at the university. Empowered students are anticipated to take greater control of their lives and to make them meet their needs for power and have a sense of belonging; this is an important step for a student to realize their social and education goals (Denis, 2012). According to Sullivan (2002), there are two dimensions of student empowerment, which are intrapersonal and interpersonal empowerment. Intrapersonal empowerment is the ability and capability of students to pursue and acquire their goals while interpersonal empowerment is the pursuit of goals by students that are not in conflict with those of peers or the teacher. According to Alsop (2006), empowerment at personal level is important although it makes meaningful impact when in coalition. Therefore, empowered students can be the change agents from whom fellow students can be inspired and enforce change for better performance at universities.

Generally, high performance is achieved by well-motivated people who are prepared to exercise discretionary effort. Student empowerment is an integral part in improving students' academic performance (Leech and Fulton, 2008), however, differences in students' learning and socioeconomic aspects questions this hypothesis. Hence, factors responsible for student empowerment in one context may not be replicated in another context. It is imperative to find as much specific empirical evidence as possible on whether and how students' empowerment translates into students' academic performance. A better understanding on the impact of

empowerment among students would help instructors at university to improve academic performance of students by assisting them to realize their potentials in learning abilities, and to help them use the existing learning resources and facilities, and to build their perceptions towards the course content and instructors. The overall aim of the study was to determine the relationship between student empowerment and academic performance among university students.

The conceptualization of the linkage between student empowerment and student academic performance is hinged on the motivation theory (Arnold *et al.*, 1991). There is consensus in literature that motivation is essential in almost any aspect of life. Every human being in this world reflects on their motivation for doing certain tasks every day. We all assess ourselves to reflect how we are moving towards our intended goals and objectives. Scholars (e.g. Arnold *et al.*, 1991; Steyn, 2001) identify three aspects of action that motivation can influence one's desire of achieving what she/he has intended to achieve. These are direction (choice i.e. what a person is trying to do), intensity (effort i.e. how hard a person is trying), and duration (persistence i.e. how long a person keeps on trying). Furthermore, motivation is best understood and described as being "intrinsic" or "extrinsic" in nature. Therefore, whether one will feel motivated to act towards some goals depend on the context specific group of factors that are at play. According to Ryan and Deci, (2000), the quality of experience and performance can be very different when one is behaving for intrinsic versus extrinsic reasons. Intrinsic motivation is defined as the doing of an activity for its inherent satisfaction rather than for some separable consequence. Therefore, when intrinsically motivated s/he is more likely to act for the fun or challenge entailed rather than because of external prods, pressures, or rewards. The concept of intrinsic motivation has roots in people's psychological needs to feel competent, experience psychological growth, and self-actualization (Ryan and Deci, 2000).

One's empowerment, which implicitly connotes ones increased motivation, may result from good teaching and learning environment. For example, a college or a university that provides or creates a favourable studying environment for students in terms of reading materials and sufficient teachers contributes to increasing one's autonomy that is necessary to improve their learning. The accompanying changes in psychological processes can increase students' satisfaction, which can in turn result in improved learning environment and impact on individual students' cognitive growth. This study hypothesized that empowered students were expected to perform better than those who are relatively not empowered. Furthermore, empowerment was hypothesized to result into increased motivation, which is expected to enhance cognitive process. For example, students with a high motivation for classroom achievement as reflected by high scores in GPAs strive to achieve better grades; will feel bad if they receive poor grades.

2.0 Research Methodology

The study on which this paper is based was conducted at Sokoine University of Agriculture, which is located in Morogoro Municipality, Tanzania. The university is among old public universities hosting students from all over Tanzania and from some other countries; hence it is a good representation of university students in Tanzania. The study adopted a cross-sectional research design. The design was considered appropriate given the nature of the objectives of the study and limitation in financial time resources. The design is also commonly used in socio-economic and behavioural studies. The design was considered suitable because of resource

limitations and time for data collection. The adoption of the cross-sectional design is justifiable on the basis that it is the most common design used in survey research that compares the extent to which at least two groups of people differ on a dependent variable (de Vaus, 1993).

The study population was university students pursuing studies leading to first degrees (undergraduate). The sample size was 200 students who were selected based on the simple formula of selecting samples for a population, which does not exceed 10,000 (Fisher *et al.*, 1991). A combination of simple and systematic random sampling techniques was applied to obtain the respondents. Simple random sampling technique was used to obtain degree programmes whereas systematic sampling was used to obtain the respondents in each degree programme. A class list comprising names of all students in particular degree programmes was used as a sampling frame. Sampling interval was obtained by dividing the total number of students in each class by the required sub-sample size from each class (N). The first case was randomly selected, and then every n^{th} student in the list was selected until the required sample in the class was reached. A similar procedure was followed in each degree programme to get the total respondents that were used in the study.

Individual questionnaire was the main tool for data collection. The study adopted the Psychological Empowerment Instrument (PEI) (Spreitzer, 1995) and the Learner Empowerment Scale (LES) Frymier *et al.* (1996) to measure the level of attitude. Both scales comprised 35 Likert scale items. The responses to all items were made on a scale of never (0) to very Often (5). In addition, the LES and PEI were grouped into three subscales: impact, meaningfulness, and competence. These subscales were found to achieve adequate alphas as a measure of internal reliability. Summated scale approach to Likert scale was carried out to derive the respondents' perceived attitude, and index scales were developed to gauge the students' overall level of attitude. Data analyses employed descriptive statistics, which were used to describe the sample of the respondents. A correlation analysis was run between the constructs of the empowerment scale as well as between empowerment and academic achievement. The Statistical Package for Social Sciences (SPSS) was used to explore the relationship between the different constructs of empowerment, and student performance, which was computed using Pearson correlation (r).

3.0 Findings and Discussion

In this study, the characteristics of the respondents that were investigated include sex, age, marital status, year of study, financial sponsor, living arrangement, and academic performance according to the grade performance average (GPA) of students. The socio-demographics of the students who were interviewed are presented in Table 1.

Table 1: Social-demographic characteristics of respondents in percentages (n=200)

Category	Frequency	Percent
Age		
20-24	114	57.0
25-29	75	37.5
30-34	11	5.5
Sex		
Male	109	54.5
Female	91	45.5
Marital status		
Single	157	78.5
married	22	11.0
cohabiting	21	10.5
Year of study		
Year 1	65	32.5
Year 2	80	40.0
Year 3	55	27.5
Financial sponsor		
HESLB	105	52.5
Parents/ guardians	62	31.0
Employer	18	9.0
Place of residence while studying at university		
University hostel	76	38.0
University off campus	83	41.5
Private accommodation	31	15.5
Performance in G.P.A		
2.0-2.9	18	9.0
3.0-3.9	164	82.0
4.0-4.3	18	9.0

About half of the respondents were categorized in the 20-24 years of age bracket and very few students were aged above 30 years. This is a good representation of the university students in Tanzania. More males than female students participated in the study and the majority of students in both cases were living as singles. About ten percent of the respondents were cohabiting. More than one-third of the students (38%) were living in the university campus accommodation. The majority of the students interviewed (41.5%) were living in the off-campus University based accommodation while 15.5 and 5 percent were living in private and home based accommodation respectively. Students who were cohabiting revealed that economic hardship forced them to live together to share some costs and due to scarcity of University based accommodation which is also relatively expensive. However, an interview with key informant revealed that some students prefer to live in off campus accommodation because they would like to have more freedom of doing things in their own way away from hostel wardens in university-based accommodations. One of the key informants reported that:

“...the issue of off campus accommodation is now very difficult to handle...we don't have enough good quality hostels and some students prefer off campus accommodation where

they can easily cohabit without university based or family interference for counselling and guidance...” (KI, Hostel Warden, SUA).

Such living arrangements are more likely to have an impact on students' performance due to unequal distribution of tasks and unplanned pregnancies among cohabiting students. An interview with leaders of students government, revealed that there are many incidences of gender based violence among cohabiting students due to lack of empowerment among female students on issues related to decision over sexual desires and relationship. She insisted by saying:

“...we usually hear many cases of gender based violence among cohabiting students few cases are reported to university management but most of them go unreported...such living arrangement is more likely to affect students academically...” (KI, Student leaders, SUA)

In some previous studies, the level of student empowerment is reported to be related to marital status and living arrangement as well as learning environment (Kirk *et al.*, 2016; Brunton, and Jeffrey, 2014). The current study involved representative sample of students from all years of study namely first, second, and third year. In addition, students from social sciences courses and natural sciences courses 100 students from each category were involved in order to determine if learning environment has some influence on their empowerment. The findings as presented in Table 1 revealed that slightly more than half (52.5%) of the respondents were financed by Higher Education Students Loan Board (HESLB); few(9%) were sponsored by their employers, and 31% were sponsored by parents or guardians while very few(7.5%) reported of being self-sponsored. Student access to finance has been reported to affect students' level of empowerment (Musser and Lloyd, 1985; Wiklander, 2010; Kirk *et al.*, 2016). Based on the cumulative GPA classifications, few students performed below and above average while the majority were categorized in the medium level of performance (Table 1).

Level of empowerment among students

The statements on the Psychological Empowerment were broadly categorized into three areas that reflect student's empowerment in terms of having an impact, meaningfulness, and competence. From the summary of responses in Table 2, high scores appear in the positive (agree) range of the Likert scale, especially on statements that connote positive aspects. Relatively low scores appear on the positive side of the Likert scale for statements with negative connotations. The overall score in each construct of the empowerment was used in establishing the overall scores on empowerment and was further used in the correlation analysis.

Table 2: Impact: Level of empowerment among students (n=200)

SN	Statement	Disagree (%)	Undecided (%)	Agree (%)
Impact				
1	I have the power to make a difference in how things are done in my class.	21.6	30.7	47.7
2	I have a choice in the methods I can use to learn	18.0	34.8	47.2
3	My participation is important to the process of learning	12.7	30.1	57.2
4	I have freedom to choose among options in this class.	17.5	47.5	35.0
5	I can make an impact on the way things are run in my class.	19.2	40.1	40.7
6	Alternative approaches to learning are encouraged in this class	16.7	38.2	45.2
7	I have the opportunity to contribute to the learning of others in this class.	17.2	38.3	44.4
8	I have the opportunity to make important decisions in this class.	20.6	34.3	45.1
9	I cannot influence what happens in this class.	42.2	38.9	18.9
10	I have the power to create a supportive learning environment in this class.	17.0	50.3	32.7
11	My contribution to this class makes no difference.	52.2	37.1	10.8
12	I can determine how learning process can be performed	24.9	47.7	27.5
13	I make a difference in the learning that goes on in this class.	18.2	44.3	37.5
14	I have no freedom to choose on how to learn	34.0	48.9	17.0
15	I can influence the instructor.	23.8	39.8	36.5
Meaningfulness				
16	I feel appreciated in the class	16.5	45.5	38.1
17	I look forward to going to my performance	11.7	34.4	53.9
18	This class is exciting.	16.1	46.2	37.6
19	This class is boring.	40.9	43.6	15.5
20	This class is interesting.	12.5	46.4	41.1
21	The tasks required in my class are valuable to me.	17.3	34.7	48.0
22	The information in this class is useful.	13.2	41.4	45.4
23	Empowerment process will help me to achieve my future goals.	9.8	56.1	34.1
24	I am highly motivated to do well in academic performance	17.5	43.5	39.0
25	I feel very competent during leaning process	16.7	36.2	47.1
26	I feel comfortable challenging with my lectures in the class	22.4	40.4	37.2
Competence				
27	I feel comfortable challenging with my peers in the class	18.1	39.2	42.8
28	I feel comfortable answering questions in the class	19.9	41.6	38.5
29	I have faith in my ability to do well in this class	13.9	35.8	50.3
30	I feel intimidated by what is required of me in my class.	24.3	52.9	22.8

31	I feel confident that I can adequately perform my studies	15.6	36.4	48.0
32	I lack confidence in my ability to perform well in this class	61.8	21.9	16.3

Overall empowerment

The respondents’ overall self-evaluation for their empowerment based on the scores on the Psychological Empowerment Likert index is presented in Figure 1. The average scores for the constructs of Psychological Empowerment were determined by calculating the mean score for the items that constituted each construct. Overall, the majority of the respondents (62%) were categorized into low levels of empowerment, and 38 percent were categorized into higher levels of empowerment. Female respondents were more likely to be categorized into higher levels of empowerment than were their male counterparts at 62 and 38 percent respectively. The causes for such differences were not established in this study, but similar findings are reported in literature (Brunton, and Jeffrey, 2014). Such low level of empowerment implies that several factors are responsible for student empowerment. For example in the course of interacting with students in this research, some students reported that they could be empowered by allowing them more freedom in their studies. This was further confirmed by the tight schedules in their teaching timetables. In addition, they recommend to the university authorities to consider sensitizing students to feel free to socialize with instructors for improved performance. Similar trend of low empowerment outcome and low motivation is reported by Aloysius (2013) in Malaysia.

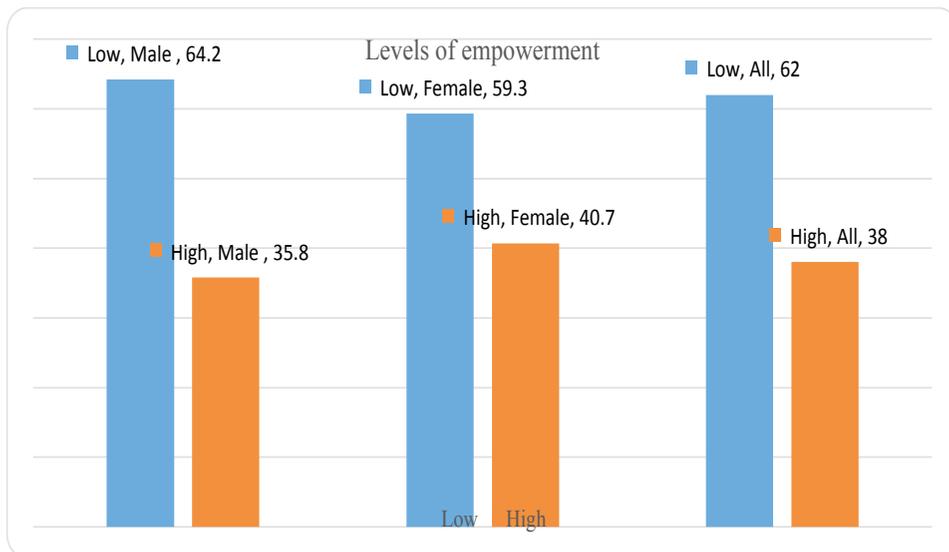


Figure1: Levels of empowerment

The impact of empowerment on student academic performance

This study hypothesized that there would be a significant and positive relationship between summative scores on the different construct of empowerment and students’ academic performance. In order to establish whether such relationship exists, the correlation between the constructs of empowerment and those of academic performance measured in GPA was determined (Table 3).

Table 3: Correlations between constructs of students' perceptions of empowerment and academic performance

Construct of empowerment	Impact	Meaningful	Competence	GPA
Impact	1	0.567**	0.239**	0.098
Meaningfulness	0.567**	1	0.383**	-0.014
Competence	0.239**	0.383**	1	-0.023
G.P.A	0.098	-0.014	-0.023	1

The strength of the linear relationship between Impact and Meaningfulness was medium and had significant relationship ($p < 0.05$). The strength of the linear relationship between Impact and competence was weak, but with a significant relationship ($p < 0.05$). The strength of the linear relationship between Meaningfulness and Competence was weak and had a significant relationship ($p < 0.05$). Note that all paired linear relationships between the constructs of student empowerment were positive. This implies that an increase in one construct is associated with an increase in a corresponding construct. Furthermore, all the linear relationships between the construct of empowerment and academic performance (GPA) were weak and none of them had a significant relationship. The linear relationship between GPA and meaningfulness and between GPA and Competence had weak relationship and were negative. This implies that there is no linear relationship and association between the level of academic performance and the construct of empowerment. Similar findings are reported by Zraa *et al.* (2011).

4.0 Conclusions and Recommendation

This study determined the relationship between student empowerment and student academic performance. The results indicate that most students were categorized into low levels of empowerment, but correlations between students' constructs of empowerment and their academic performance were not statistically significant. Therefore, while students' empowerment is important in its own context, it may not be a necessary component for improving student academic performance. Cohabitation was found to be common among students due to lack of campus based accommodation and change in students' life styles. It is recommended to the Ministry of Education Science and Technology to improve and increase accommodation for university students. The Higher Education Student Loan Board should revise the student's maintenance allowances to the minimum living wage for students. There is a need to conduct further studies to explore the key determinants of students' academic performance in the local contexts. The universities are urged to introduce and or use student-cantered approaches to increases student's sense of ownership in the learning processes, which is more likely to have a double impact of increasing both student empowerment and their academic performance.

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AFRICAN JOURNAL OF ACCOUNTING AND SOCIAL SCIENCE STUDIES (AJASSS)

BACKGROUND OF AJASSS

The African Journal of Accounting and Social Science Studies (AJASSS) was established in July 2017 to serve as official journal of Tanzania Institute of Accountancy (TIA). AJASSS is a double blind peer reviewed Journal, which is sponsored and published by TIA. It is registered by the Tanzania Library Services Board, and its International Standard Serial Number (ISSN) is ISSN 2591-6815 PRINT and eISSN2591-6823 ONLINE.

AJASSS aims at providing the public, academicians, researchers, consultants, and practitioners with a scholarly forum for an exchange of ideas and experiences. The scope of AJASSS seeks to stimulate new thinking and ways of working on areas related to accounting, public finance, procurement, supply chain, taxation, auditing, financial management, corporate finance, human resource management, business administration, marketing, public relations, information technology, management, economics and other social science subjects.

AUTHOR GUIDELINES

This guide is for authors who intend to submit papers to AJASSS. The work of the authors should be original. Submissions that do not meet the outlined standards will be rejected.

Preparing your manuscript

1. File Format

Manuscript files can be in the following formats: DOC, DOCX, or Microsoft Word. Documents should not be locked or protected.

2. All Text Format

2.1. Layout , Spacing, and Length

All texts should be in Times New Roman font style, 12- Font Size, Single Spaced, and Full Justified, including the abstract and the appendices. Page Margins should be set at 1-inch (2.54cm) on all sides. Include page numbers at the Bottom-Right Side of the page. Use continuous page numbers (do not restart the numbering on each section).

Insert ONLY a single space between sentences or words. Try to avoid using section or page breaks, except where Portrait is followed by Landscape and vice versa. Do not format text in multiple columns. Manuscripts should be between 3000 - 5000 words (excluding the abstract, references, and appendices). Author(s) should avoid having many tables and figures. You should present and discuss your findings concisely.

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Footnotes are discouraged. Try as much as possible to place the information into the main text or the reference list, depending on the content.

2.3. Language

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Define abbreviations upon first appearance in the text. Do not use non-standard abbreviations. Keep abbreviations to a minimum.

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Paper titles should be centered in 14-point size, bold font style. Capitalize the first letters of all content words; and use lower case for the first letters of all other words. The title should not exceed 20 words.

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If only one author writes the paper, centre the author name, authors' position, affiliation addresses and email information. For example:

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If two or more authors contribute to the paper, they should show institution affiliation and the corresponding author.

Clearly indicate who will handle correspondence at all stages of refereeing publication, and post-publication. Ensure that contact details are kept up to date by the corresponding author. For example,

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Limit manuscript sections and sub-sections to 3 heading levels. All headings are set flush left. Capitalize the first letter of content words and use lower case for first letters of all other words. Set 6pt spacing after each heading. That is,

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- Level 3 Headings: 12-point size, bold font style, italics

For example:

- 3. *Study Methodology*
- 3.1. *Study Design*
- 3.1.1. *Data Collection tools*

Divide your article into clearly defined and numbered sections. Subsections should be numbered as indicated above (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to ‘the text’. Any subsection may be given a brief heading.

6. Tables and Figures Format

Figures and tables should be embedded in the body of the paper. The title of figures and tables should be in 12-point size, bold font style. Capitalize the first letter of principal words and leave all other letters as lowercase. If the data in the columns of your table include items in parentheses (like p-values), they should be included below the data they refer to, not beside them. For in-text references, the words “Table” and “Figure” are always capitalized.

6.1. Tables Format

The title of tables should be on the top left of a table. Text in tables should normally be not smaller than 10-point. Use Landscape where necessary to keep table text together. Try to avoid separating a table into two pages, just move text to keep table together. When a table has to move to the next page, try not to leave large gaps between texts.

6.1.1 Indications of statistical significance levels in table notes

*, **, and *** represent significance levels of 0.10 [or 10 percent], 0.05 [or 5 percent], and 0.01 [or 1 percent], respectively.

6.1.2 Table notes

Table notes appear at the bottom of the table. Notes should be as brief as possible; for example, rather than including extensive definitions of variables in the notes, consider placing the definitions in an Appendix, and referring to the

Appendix in the notes.

6.2. Figures Format

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7. Equations

We recommend using MathType for display and inline equations, as it will provide the most reliable outcome. If this is not possible, Equation Editor is acceptable. Avoid using MathType or Equation Editor to insert single variables (e.g., “ $a^2 + b^2 = c^2$ ”), Greek or other symbols (e.g., β , Δ , or ' [prime]), or mathematical operators (e.g., \times , \geq , or \pm) in running text. Wherever possible, insert single symbols as normal text with the correct Unicode (hex) values.

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The headings of hypotheses, definitions, theorems, propositions, and similar items are set in initial cap and small caps (boldface). The text, including mathematical expressions, is in italics. Indent the first line from the left margin (0.5 inch) with a further hanging indent (0.5 inch) for any subsequent lines of text. If there is more than one hypothesis, definition, and similar things number them consecutively using Arabic numerals. After the item, drop a line and continue with the text of the article, flush left. For example:

Hypothesis 1: Board size is positively related with firm performance

9. References Format

The reference should follow Harvard reference style. The list should be arranged alphabetically according to the surname of the first author or editor, and not be numbered at the end of the paper. Please see the most common examples of references and notes below.

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The **in-text citation** is placed at the exact point in your document where you refer to someone else's work, whether it is a book, journal, online document, website, or any other source. The following guidelines apply to all types of sources, including online documents and websites.

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Agriculture still employs half a million people in rural Britain (Shucksmith, 2000).

An author can be an organisation or Government Department (known as a ‘corporate author’). For example:
(English Heritage, 2010)

If there are two, both names should be given. For example:
(Lines and Walker, 2007)

If there are more than two authors, cite the first author, followed by ‘et al.’ (in italics) followed by a coma. For example:
(Morgan et al., 2013)

To refer to two or more authors at the same time, list them by date of publication and separate them by a semicolon. For example:
(Taylor, 2013; Piper, 2015)

For several publications by the same author published in the same year, use letters (a, b, c) accordingly to specify the publication cited by that author. For example:
(Watson, 2009a)

If the author’s name occurs naturally in the text, only the year of publication is given in brackets. For example:
In his groundbreaking study, Jones (2014) ...

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If there is no author, use a brief title instead (title is in italics). For example:
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Handling Quotations in the text:

Short quotations may be run into the text, using single or double quotation marks (*be consistent*). For example:

As Owens stated (2008, p.97), ‘the value of...’

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Simone de Beauvoir examined her own past and wrote rather gloomily: The past is not a peaceful landscape lying there behind me, a country in which I can stroll wherever I please, and will gradually show me all its secret hills and dales. As I was moving forward, so it was crumbling (Simone de Beauvoir, 1972, p.365).

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All references, including those for online resources, must contain author, year of publication and title (if known) in that order. Further details are also required, varying according to type of source (see below):

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- i) Author/Editor:** Surname/family name first, followed by initials.
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- iii) Title:** Include title as given on the title page of a book; include any sub-title, separating it from the title by a colon. Capitalise the first letter of the first word and any proper nouns. Use italics.

- iv) **Edition:** Only include if not the first edition. Edition is abbreviated to 'edn'.
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Example of printed book, or ebook, which looks like a printed book, or report:

Shone, A. and Parry, B. (2013). *Successful event management: a practical handbook*. 4th edn. Andover: Cengage Learning, pp. 86.

Example of organisation/Government Department as author:

Department of Health (2012) *Manual of nutrition*. 12th edn. London: TSO, pp. 20.

Example of book with no author:

Ebooks for which publication details and page numbers are not available AND Online reports

- i) Author/editor
- ii) Year of publication (in round brackets)
- iii) Title (use italics)
- iv) Available at: URL (Accessed: date) OR (Downloaded: date)

Marr, A. (2012). *A History of the World*. Available at: [<http://www.amazon.co.uk/kindle-ebooks>] (Downloaded: 23 June 2014).

Chapter in a book:

- i) Author of chapter
- ii) Year of publication
- iii) Title of chapter (in single quotation marks)
- iv) 'In' and then author, title of complete book (in italics), place of publication, publisher, page numbers of chapter.

Smith, H. (1990) 'Innovation at large', in James, S. (ed.) *Science and innovation*. Manchester: Novon, pp. 46-50.

Journal articles, print and electronic:

- i) Author
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- iv) Title of journal (in italics). Capitalise the first letter of each word in title, except for grammatical words such as 'and', 'the', 'of'
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Example of print or online journal article:

Matsaganis, M. (2011). 'The Welfare State and the Crisis: The Case of Greece. *Journal of European Social Policy*, 21(5), pp.501-512.

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Williams, J. (2000). 'Tools for Achieving Sustainable Housing Strategies in Rural Gloucestershire', *Planning Practice & Research*, 15(3), pp.155-174.

Newspaper articles, print and electronic:

Potter, R. (2013) 'Time to take stock', *The Guardian*, 20 May, p.15.
(If specifically using an online version, include the URL and date accessed)

Web page (*the main web page, not a pdf on the web page*):

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[<http://policy-practice.oxfam.org.uk/our-work/gender-justice>]
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Report from a database:

Mintel Oxygen (2014) 'Prepared meals review – UK – May 2014'.
Available at: [<http://academic.mintel.com>] (Accessed: 12 June 2014).

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Film on YouTube:

Page, D. (2008). *How to Draw Cartoon Characters: How to Draw the Head on a Cartoon Character*. Available at:
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Photograph from the internet:

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Interview:

Taylor, F. (2014). 'The future is bright'. Interview with Francis Taylor. Interviewed by Sally Ross for BBC News, 15 March. *[If published on the internet also include the URL and date accessed]*

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Manuscripts should be organized as follows. Instructions for each element appear below the list.

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- Abstract (should not be more than 250 words)
Should be both Informative and brief not exceeding 250 words in one paragraph (max. length).

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Middle section: *The following elements can be renamed as needed and presented in order:*

- Literature Review
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- Results
- Finding and Discussion
- Conclusions and Recommendations

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- References
- Appendices
- Include appendices only if they provide essential information not possible within the body of the article

Acknowledgement

Acknowledgement findings and the authors' manuscript submitted for review and publishing should constitute an acknowledgement of the people who contributed to the work, funding agencies in brief, and so on.

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