

**DETERMINANTS OF PARTICIPATION OF RURAL YOUTH IN CROP
PRODUCTION IN MOROGORO DISTRICT, TANZANIA**

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**A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR
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RURAL INNOVATIONS OF SOKOINE UNIVERSITY OF AGRICULTURE.
MOROGORO, TANZANIA.**

EXTENDED ABSTRACT

This study analyzed the determinants of participation of rural youth in crop production activities in Morogoro district, Tanzania. In particular, the study: (i) examined the socio-economic characteristics influencing rural youth's participation in crop production activities in the Morogoro district; (ii) determined the perception of rural youth towards participation in crop production activities in Morogoro district; and (iii) established factors facilitating retaining of rural youth in crop production activities in Morogoro district. The study was conducted in Mvuha, Serembala, Tawa, Kisenu, Mkambarani and Mikeke wards in the Morogoro district. A convergent parallel mixed methods research design was adopted for this study. The design enables the collection of both quantitative and qualitative data at the same time and then integrates the information into the interpretation of the overall results. Quantitative data were collected by using questionnaires. Qualitative data were collected through In-depth Interviews, Focus Group Discussions (FGDs) and Key Informants Interviews (KIIs). Descriptive statistical analysis, binary and ordinal logistic regression models were used to analyze quantitative data, while the content analysis approach was used to analyze qualitative data. The findings revealed that 74.2% of the rural youth held a positive perception towards participation in crop production, more than half (55.1%) of the respondents agreed with the statement that "there is adequate monetary gain from crop production activities", In the parameter estimates table the coefficients, their standard errors, the Wald test, degree of freedom and associated p-values (Sig.). both access to inputs and cool climate conditions were statistically significant expected with a 1.65 and a 0.73 increase in the ordered log odds of being in a higher level of youth's perception of the participation in

crop production activities respectively. The intent of the rural youth to participate in crop production falls under several socio-economic characteristics. The full model containing all predictors was statistically significant, $\chi^2(df=5, N=399)=153.096, p<0.001$, explained between 31.9% (Cox and Snell R square) and 42.5% (Nagelkerke R squared) of the variance in main occupation status, three independent variables were statistically significant namely age, education and sex of the respondents. However, the findings revealed that 52% of the rural youth rely on brokers as a source of price information, 87.7% of the hired labourers revealed that youths were more preferred because they are said to be energetic and easy to get, 66.7% of the rural youth confirmed that the farm inputs were available, 84.5% of the respondents affirmed that farm inputs were affordable. Furthermore, more than half (50.1%) of the rural youth were satisfied with the benefits gained and 87.2% of the respondents confirmed about their wish to continue with crop production activities. Therefore, it is recommended that the government in collaboration with other agricultural stakeholders should insist on hosting agricultural training to equip the youth with innovative knowledge to enable the youth to adopt new technologies and technical packages which could guarantee higher productivity.

DECLARATION

I, BOAZ STANSLAUS KIBERITI, do hereby declare to the Senate of Sokoine University of Agriculture that, this thesis is my own original work, done within the period of registration and that it has neither been submitted nor being concurrently submitted in any other institution.

Boaz .S. Kiberiti
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Date

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LIST OF ABBREVIATIONS AND ACRONYMS

AGRA	Alliance for a Green Revolution in Africa
ANSAF	Agricultural Non-State Actors Forum
ASDP	Agricultural Sector Development Programme
BLM	Binary Logistic Model
FAC	Food Aid Committee
FAO	Food and Agriculture Organization
FO	Farmer's Organization
IFAD	International Fund for Agricultural Development
ILO	International Labor Organization
NBS	National Bureau of Statistics
NSYIA	National Strategy for Youth Involvement in Agriculture
OLM	Ordinal Logistic Model
SCCT	Social Cognitive Career theory
SDG	Sustainable Development Goals
SUGECO	Sokoine University Graduate Enterprise Cooperative
TPB	Theory of Planned Behaviour
TYIC	Tanzania Youth Investment Club
UN	United Nations
UNDP	United Nations Development Programme
URT	United Republic of Tanzania

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

The United Nations (UN) defines youth as persons between the ages of 18 and 35. The number of young people aged 18 to 35 is also expected to increase to 1.3 billion by 2050, accounting for almost 14 percent of the projected global population (UN, 2010). Most youths will be born in developing countries in Africa and Asia, where more than half of the population still lives in rural areas (United Nations Department of Economic and Social Affairs, 2011). According to the 2012 Tanzania national population census it was reported that there were 44.9 million people of whom the youth constitute about 35.5% (URT, 2012).

In Tanzania rural youth continue to face challenges related to unemployment, underemployment and poverty. Despite the agricultural sector's ample potential to provide income generating opportunities for rural youth, challenges related specifically to youth participation in this sector and, more importantly, options for overcoming them are not extensively documented (Alliance for a Green Revolution in Africa, 2013). As the trend of youth shunning away from crop production is increasing, the role of youth in the future of farming is under discussion in many agricultural forums (Food Aid Committee, 2010).

The Tanzanian Government has attempted to stimulate youth interest in crop production since the 1960s when the Government established a policy of education for self-reliance and introduced agriculture as a subject in schools (URT, 2010). This was intended to inculcate positive attitudes in youth toward agriculture as well as preparing them for rural life after school. Youth were directly involved in crop production activities through cultivation, planting, weeding, and harvesting (URT, 2010).

In the late 1970s the Government also established agricultural training institutes in some parts of the country which included Ministry of Agriculture Training Institutes (MATI) and Livestock Training Institutes (LITI but now LITA, i.e. Livestock Training Agencies) which offer demand driven short and long term courses at certificate and diploma levels in agricultural based programmes to equip young farmers and other stakeholders with better farming skills and agribusiness management.

In 2001 the Government also formulated the Tanzania Agriculture Sector Development Strategy (ASDS). Among many issues the strategy aimed at addressing the issue of migration of youth from rural to urban areas as it recognized the youth playing a central role and active labor force in agricultural development, this is also clearly stipulated in the document that “the strategy focuses on empowering youth and sustaining agricultural human resource through collaboration between local governments and NGOs in developing ways to reduce youth migration and increase their deployment in agriculture in the rural areas”(URT, 2001:38).

In December 2007 the Government formulated the National Youth Development Policy, which had a vision to empower and motivate the youth to effectively participate in the social, political and economic development of the society. The overall objective was to empower and guide the youth and other stakeholders in the implementation of youth development issues including agricultural activities. However, the policy recognized agriculture and animal husbandry as the largest possible employer for youth completing primary and secondary schools as well as those in higher learning institutions. It is also clearly stated in the policy statement that “The Government in collaboration with stakeholders shall provide conducive environment, develop and promote labour intensive infrastructure for youth to participate effectively in agriculture” (URT, 2007:18).

The Kilimo Kwanza (Agriculture First) Initiative was officially launched and declared by the Government in 2009. It was a national agricultural development agenda which aimed at modernizing agriculture to uplift agricultural growth. Therefore, to uplift agricultural growth, this initiative led to the formulation of the ten pillars for implementation. In its 8th pillar: Science, Technology & Human Resources for Kilimo Kwanza Initiative recognized the youth as the main contributor to its implementation and achievement, the pillar incorporates youth in agricultural loans provision, land acquisition to entrepreneurial agricultural graduates (URT, 2010).

The Sokoine University of Agriculture (SUA) through her (by then) Department of Agricultural Economics and Agribusiness launched an initiative to enable its graduates to engage in agriculture as a business career soon after their graduation. The Department launched the Sokoine University Graduates Cooperative (SUGECO) which was founded

in 2011 with the aim of enabling SUA graduates to engage in agribusiness as their fulltime job soon after graduation (Mori and Olomi, 2013). SUGECO supports its members through capacity building programs that include training on agriculture entrepreneurship and equip its members with skills to write feasible business plans on agribusiness projects for them to access loans and credit available in local banks and microfinance institutions in Tanzania.

Tanzania's agricultural sector is guided by the Agricultural and Livestock Policy of 2013 which sought to improve the well-being of the people whose principal occupation and way of life are based on agriculture. These are mainly smallholder crop producers and livestock keepers who should be empowered through the provision of extension services, credit and marketing structures. The Policy acknowledged the role played by the youth in providing an active productive force (URT, 2013). In stimulating the youth's interest in crop production and processing, the Parliament 2013 passed a resolution to form a new programme that will provide loans to youth under 35 years of age who are interested in starting agricultural businesses (URT, 2013). The youth fund was pointed out as an important means to curb the problem of youth unemployment in the country. As a result the Government set aside about 200 billion shillings annually from the national budget as a youth development fund (Kayombo, 2012).

According to Rutta (2012), the participation of youth in crop production became a problem in the country since the time of the introduction of the Structural Adjustment Programs in the 1980s. Youth have been more disenchanted with crop production activities due to the diversity of non-agricultural activities as a result of privatization and free market economy. The majority of them opted to move away from rural areas

migrating to urban areas to engage in non-farming activities such as manufacturing, commercial and transportation as they seem to be much more rewarding than agricultural crop production activities (Akpan, 2010; Ngomuo, 2013).

1.2 Problem Statement

Despite the above initiatives of the Government to persuade the rural youth into crop production, the youth have continued developing a strong apathy towards crop production activities, they are shunning away from it (Abdullah, 2012). This has resulted in unemployment and a lack of sustainable livelihood among youth and currently the youth unemployment stands at 13.7 percent (HBS-ILFS, 2014/2015). With small proportion of youth in crop production, the long term future of the agriculture sector is therefore in question (Chikezie *et al.*, 2012). Generally, the rural youth have preferred to migrate from rural areas to towns or cities to engage in non-agricultural activities (Akpan, 2010).

Previous researchers (Akpan, 2010; Aphunu and Atoma, 2010; Abdullah, 2012) in their respective studies stress the crucial role the youth have in ensuring the prosperity and sustenance of crop production and ensuring food security and how the rural-urban youth migration negatively affects crop production for them being the most active segment of the entire population and the engine that can produce the most in society. Additionally, Rutta (2012:48) also succeeded in reviewing the youth's policies and initiatives with the linkage in agricultural activities through secondary data and he concluded saying "Agricultural production is perceived as an unprofitable business and work to be done as one gets old or retired because it takes too long to earn money and offers no opportunity for a better life, so they engage in agricultural production due to the lack of other

alternatives”. Most studies have mainly focused on the reasons for the youth to shun crop production and hence opting to move to towns. However, despite the fact that most youth prefer to move to towns, there are those youths who opt to remain in the rural areas and are still actively engaged in crop production activities despite the challenges they face. While much of the documentation has been focused on the rural to urban migration, the reasons for some youth to remain in rural areas and engaging themselves in agricultural production has received dismal attention by researchers. There is need to establish what makes these few youths remain in rural areas and continue with crop production. So, lessons can be learned as to what actually motivates rural youth to go into crop production therefore this stand to be the interest of this study. This study therefore focuses on the reasons why some youths have decided to remain in rural areas and actively engaged in crop production.

1.3 Justification of the Study

Knowing what keeps some of these youths in rural areas is likely to unravel the reasons behind this occurrence. These reasons will then inform the policy makers and development agencies involved in agricultural development to formulate better agricultural policies and development initiatives that are in favour of youth participation in crop production. The study will also assist the Government, Non-Governmental Organizations and other private sectors in addressing the problem of youth unemployment by depicting the possible means or sensitized programmes that will spearhead youth’s participation in the crop production activities. Similarly, the study findings are expected to contribute towards the national and global efforts of increasing production and ensuring food security through increasing youth participation in agricultural crop production. Finally, as much of the agricultural production in Tanzania is done by the older population, sustainability in agricultural production can only be

realized if the rural to urban migration of the predominantly youthful population is tactfully reversed.

1.4 Objectives

1.4.1 Overall objective

The overall objective of this study is to establish the determinants of the participation of youth in crop production in rural areas of the Morogoro district.

1.4.2 Specific objectives include;

- i. To examine the socio-economic characteristics influencing rural youth's the participation in crop production activities in the Morogoro district.
- ii. To determine the perception of rural youth towards participation in crop production activities in the Morogoro district.
- iii. To establish factors facilitating retaining of rural youth in crop production activities in the Morogoro district.

1.5 Research Questions

- i. What are the socio-economic characteristics influencing rural youth's participation in crop production activities in the Morogoro district?
- ii. What is the relationship between the socio-economic characteristics and rural youth's participation in crop production in the Morogoro district?
- iii. What is the perception of rural youth towards participation in crop production activities in the Morogoro district?
- iv. What are the factors facilitating the retaining rural youth in crop production activities in the Morogoro district?

Hypothesis: The participation of rural youth in crop production activities is not determined by certain personal, social and economic factors

1.6 Theoretical Framework

The study is about determinants of youth's participation in crop production activities in the Morogoro district. The study is supported by the Theory of Planned Behaviour (Ajzen, 1991). The theory is primarily concerned with identifying the factors underlying the formation and change of behavioural intent. It assumes that a person's behavioural intent is determined by an individual's attitude toward behavior, subjective norms and perceived behavioural control. The theory is based on the assumption that, Behavioural intent is a proxy measure for behaviour. It represents a person's motivation in the sense of her or his conscious plan or decision to perform certain behavior where the strong the intention is, the more likely the behavior will be performed. Attitude toward Behavior refers to the degree to which a person has positive or negative feelings of the behavior of interest. It entails a consideration of the outcomes of performing the behavior. Subjective Norm refers to the belief about whether significantly others think he or she will perform the behaviour. It relates to a person's perception of the social environment surrounding the behaviour. Perceived Behavioural Control refers to the individual's perception of the extent to which performance of the behaviour is easy or difficult. It increases when individuals perceive they have more resources and confidence (Ajzen, 1991).

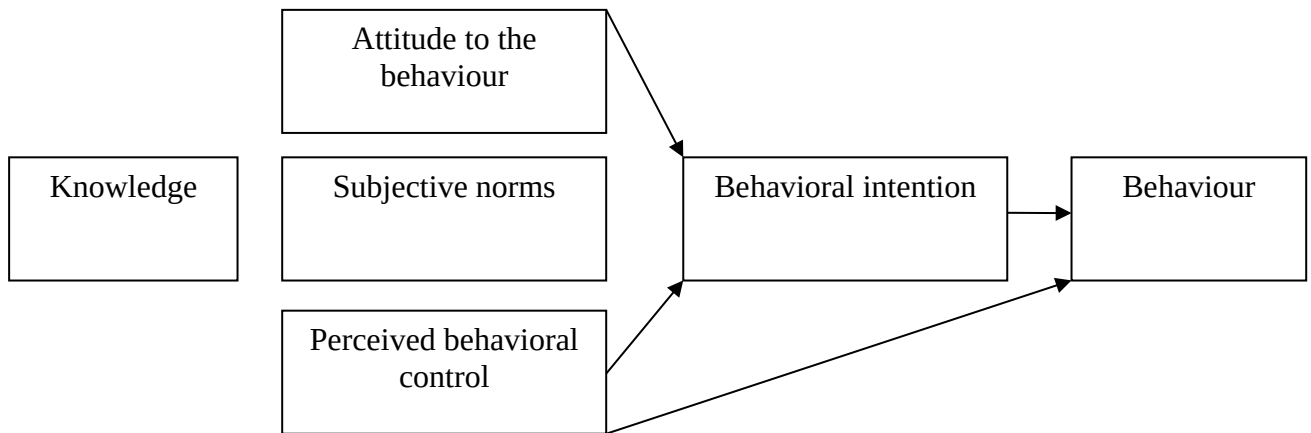


Figure 1. 1: Theoretical Framework based on Planned Behaviour from Ajzen (1991)

Therefore, the intent of the rural youth to participate in crop production falls under a number of considerations including; land access, input availability and affordability, market, price determination, availability of agricultural extension services, transportation availability in order for them to actively engage in crop production activities. Individuals usually behave in a rational manner in the sense that they take available information into account and implicitly or explicitly consider their alternative actions. An individual's intention to act or not to act is attributed to a number of determinants of the course of action.

1.7 Conceptual Framework

The behaviour or desire or motive to do something or not to do something is always attributed by an individual's attitude toward behaviour, subjective norms and perceived behavioral control. The Conceptual framework for this study demonstrates the interrelationship between independent and dependent variables. It assumes that the independent variables (perceptions, credit facilities, agricultural knowledge, education

level, family background, policy and strategies, age, lack of other job alternatives and availability of land) have influences on (the dependent variable) youth participation in crop production.

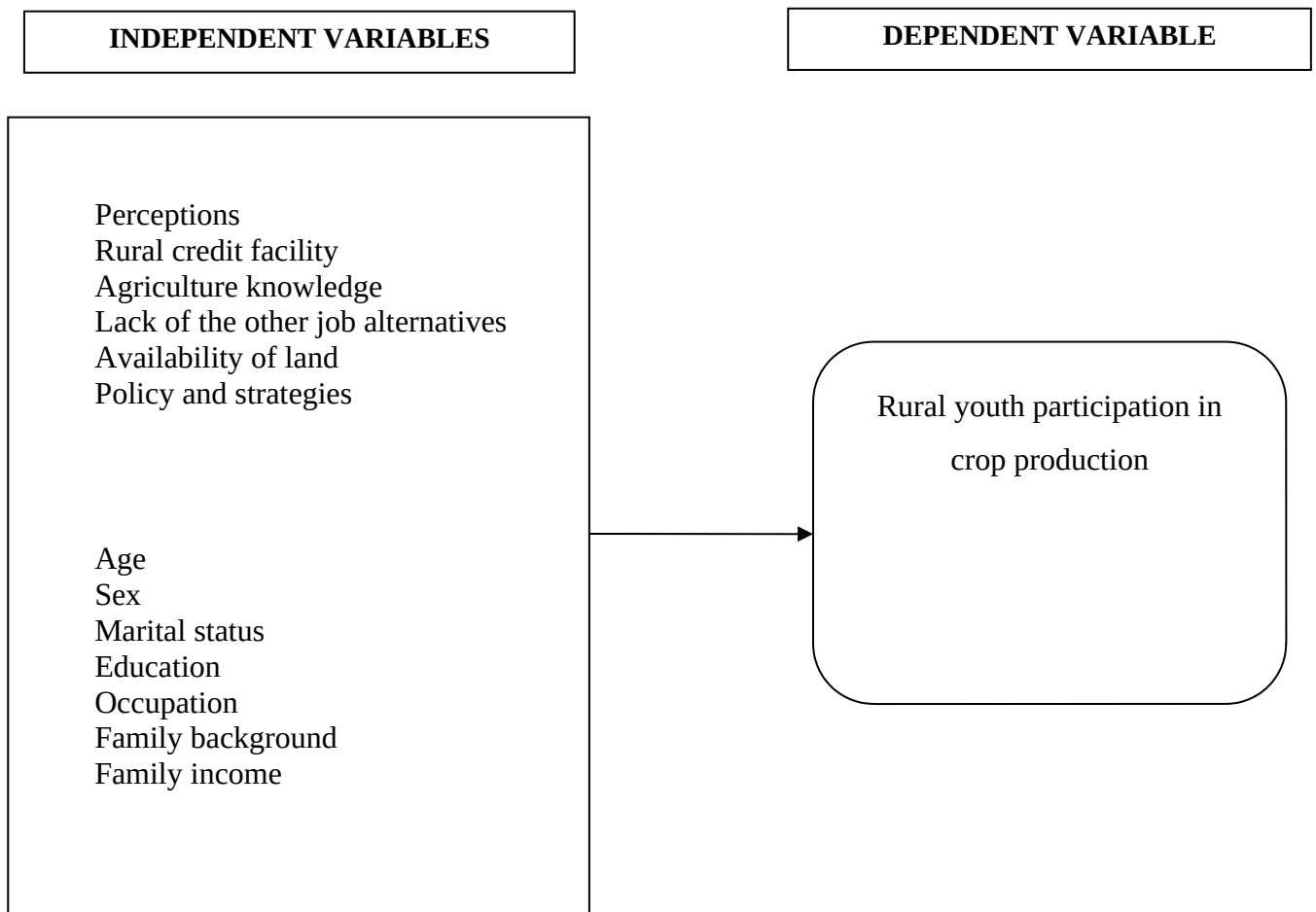


Figure 1. 2: Conceptual Framework from Ajzen (1991)

1.8 METHODOLOGY

1.8.1 Description of the Study Area

This study was conducted in the Morogoro district. The district is one of the six districts of Morogoro region, others being Ulanga, Kilombero, Kilosa, Mvomero and Gairo. Morogoro district is formed by two councils namely Morogoro District Council and Morogoro Municipal Council. According to the 2012 National Population Census Morogoro district had a total youth population of about 90,176 (URT, 2013). Morogoro district is divided into three ecological zones namely; mountainous zone, low mountainous zone and Savannah zone all of which are favourable for agricultural production (URT, 2013). Furthermore, there are nine rivers passing through Morogoro district including; Mgeta Kafa, Ruvu, Wami, Msongozi, Mbulumi, Mkata, Mkondoa, Madukwa and Ngerengere which boost the potential for agricultural activities (URT, 2013). The major agricultural activities carried out in the district include small scale farming (food/cash crops such as maize, paddy, beans, cassava and cash crops namely, cotton and sugar cane), cattle keeping (mainly indigenous livestock e.g. cattle and goats). The study area is purposively chosen due to its vast potential in crop production because of the favourable arable land and available water for agricultural activities. Such a favourable environment for agricultural production is more likely to attract the youth to remain in the rural areas to engage in crop production.

1.8.2 Research Design

A convergent parallel mixed methods research design was used for data collection (Creswell, 2014). The design allows the researcher to converge quantitative and qualitative data to provide a comprehensive analysis of the research problem. It also enables the collection of both quantitative and qualitative data at the same time and then integrates the information into the interpretation of the overall results (Creswell, 2014).

1.8.3 Sampling techniques and sampling procedures

A multistage sampling technique was used to obtain the study sample. The sampling techniques for this study included purposive and a simple random sampling. The selection of study sample followed the existing administrative units namely divisions, wards and villages. The purposive sampling was used to obtain the study area (Morogoro district) where simple random sampling was used to obtain three divisions (Mvuha, Matombo and Mikeke) from Morogoro District Council. Six wards (Mvuha, Serembala, Tawa, Kisenu, Mkambarani and Mikeke) were randomly selected two from each of the divisions randomly sampled. Furthermore, a random sampling technique was used to obtain the twelve villages namely; Tulo, Dala (Kilengezi), Kiganila, Magogoni, Kitungwa, Tawa, Mtamba, Kibangiri, Mtego wa Simba, Mkambarani, Mikeke and Lubungo. According to the United Nations, the youth is a person between the ages of 18-35 (UN, 2010). Thus, a list of youth between the ages of 18-35 were established and eventually involved in a study with the assistance of the Village Executive Officers and the Village Agricultural Extension Officers.

Therefore, the sample size for the study was calculated from the following formula by (Cochran, 1973 and also cited by Bartlett *et al.*, 2001).

$$n = \frac{N}{1 + N(e)^2} \dots\dots\dots(1)$$

n= sample size

N=the population size

e =the level of precision

$$n=90176/1+90176(0.05)^2=399$$

The sample size = 399 youth

1.8.4 Data Collection

Both quantitative and qualitative data collection methods were used in this study to allow these methods to complement each other (Tashakkori and Teddlie, 2010). The collection of quantitative data was obtained from administering questionnaires to a random sample of youth.

Qualitative data in the study area employed Focus Group Discussions (FGDs) and interviews to Key Informants (KIs). The FGDs and KIs were guided by a checklist of items. A total of twenty four FGDs composed of 9-12 participants were conducted, two from each village for clarity and good quality of data (Masadeh, 2012). In addition, 10 key informants were interviewed on the basis of their positions and experience. These included; 6 Village Executive Officers, 2 agro-input dealers and 2 Ward Agricultural Executive Officer.

1.8.5 Data Analysis

Summary of data analysis methods for each specific objective is presented in Table 1.

The Binary Logistic regression model as pointed by Pallant (2013) was used to check associations of a variable with two response categories these include; if a respondent participate in crop production activities as a primary or main occupation or a respondent participate in crop production as a part of the household business thing and not the main occupation. Therefore, the independent variable was either categorical or continuous or both.

Perception was measured by using a Likert scale (Likert, 1932). The study used a 5 point Likert scale (1 = strongly agree, 2 = agree, 3 = undecided, 4 = disagree and 5 = strongly disagree). Responses from all statements were combined to create a measurement of a Perception Scale (PS).

Ordinal logistic regression as adopted from Winship and Mare (1984) was used to analyse factors that determine youths' perception on crop production activities. This is because the dependent variable was measured at three nominal categories, namely positive, neutral and negative perception (Wesbard and Britt, 2014). The assumptions of ordinal regression requires: first the dependent variable which is measured on an ordinal level, one or more of the independent variables is continuous, categorical or ordinal. Secondly, there should be no multi-collinearity which means that there should be no two or more independent variables which are highly correlated with each other and thirdly there must be proportional odds which means that each independent variable has an identical effect at each cumulative split of the ordinal dependent variable.

Descriptive statistics including frequencies and percentages were used to summarise the results.

The content Analysis Method as recommended by Josilowski (2017) and Mayring (2014) was used to analyse qualitative data. This was informed by the interpretative phenomenological approach for purposes of understanding the phenomenon under investigation i.e. strategies that would facilitate the retaining of youth in crop production activities in the Morogoro district.from the youth's point of view.

Table 1. 1: Data Analysis Methods for Each Specific Objective of the Study

S/N	Objective	Data analysis method
1.	Examine the socio-economic characteristics influencing rural youth's participation in crop production activities in the Morogoro district.	Content and descriptive analyses; Binary logistics regression model
2.	Determine the perception of rural youth towards participation in crop production activities in the Morogoro district.	Content and descriptive analyses; Likert Scale (LS); Ordinal logistics regression model
3.	Establish factors facilitating retaining of rural youth in crop production activities in Morogoro district.	Content and descriptive analyses;

1.9 Organization of the Thesis

This thesis is organized into three publishable manuscripts and five chapters. The first chapter consists of the introduction which highlights the background to the problem that the thesis addresses, among other items. Chapter Two presents manuscript number one which covers objective one of the study, which focuses on the socio-economic characteristics influencing rural youth's participation in crop production activities in the Morogoro district. Chapter Three presents manuscript number two that concentrates on the perception of rural youth towards participation in crop production activities in the Morogoro district. Chapter four presents manuscript number three which is on factors

facilitating the retaining of rural youth in crop production activities in Morogoro district. The fifth chapter presents a summary of the results and discussion presented in all the manuscripts, and ultimately draws conclusions and recommendations of the study.

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CHAPTER TWO

2.0 SOCIO-ECONOMIC CHARACTERISTICS INFLUENCING RURAL YOUTH'S PARTICIPATION IN CROP PRODUCTION IN MOROGORO DISTRICT, TANZANIA.

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2.1 Abstract

This paper examines the socio-economic characteristics that influence rural youth's participation in crop production activities in the Morogoro district. A convergent parallel mixed methods research design was adopted for this study. Qualitative data from Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) were collected using interview guides while quantitative data were obtained by administering questionnaires to a random sample of youth. The content Analysis Method was used to analyse qualitative data. Transcripts from KIIs interviews and FGDs were transcribed and coded into emergent themes and analysed. Descriptive statistics, including frequency counts, means and percentages were used to examine the socio-economic characteristics that influence rural youth participation in crop production activities in the Morogoro district.

Additionally, a Binary Logistic regression model was used to check associations of a variable with two responses categories these include; if a respondent participate in crop production activities as a primary or main occupation or a respondent participates in crop production as one of the household chores and not the main occupation. The findings revealed that more than half (52.1%) of the respondents were male. The full model containing all predictors was statistically significant, $\chi^2(df=5, N=399)=153.096$, $p<0.001$, explained between 31.9% (Cox and Snell R square) and 42.5% (Nagelkerke R squared) of the variance in main occupation status, three independent variables were statistically significant namely age, education and sex of the respondents. Youth hold a positive perception towards agriculture, they see their social and economic development is generated from agricultural activities they engage in, where they get food and income to meet their financial needs. The majority (50.9%) of respondents are married, they have families to take care of but again a tiny proportion of youth still reside at the parents/ guardians house where they offer labour and actively engage in crop production to make sure that the families are food secure. Therefore, the Ministry of Agriculture in collaboration with other agricultural stakeholders should host agricultural training based on the socio-economic characteristics identified to equip the youth with innovative knowledge to enable them to adopt new technologies and technical packages which could guarantee higher productivity.

Key words: Rural youth, socio-economic characteristics, crop production

2.2 Introduction

Mobilization of the youth for national development is a common phenomenon in the developed countries. For instance in countries such as the UK, Netherlands, Denmark, Germany, United States of America, the involvement of youth in agricultural crop production has contributed significantly to agricultural development and empowering youth to always meet their needs (FAO, 2013; Njenga *et al.*, 2012). Many countries in the Sub-Saharan region for instance Nigeria, have realized that, in order to reduce food insecurity there must be policies for youth integration in agricultural activities (Oluwasola, 2015). This is through providing incentives to young people who are engaged in agriculture, availing fair market opportunities for youth, providing training opportunities in new technology and presenting agriculture as a profitable venture (Agboola *et al.*, 2015; Ommani, 2011).

In Tanzania, agriculture is among the most important sectors contributing to the GDP (up to 40 per cent) and it has the potential to employ a large population of youth according to the 2012 Tanzania national population census it was reported that there were 44.9 million people of which the youth constitute about 35.5% (URT, 2012). In Tanzania agriculture remains the principle employer accounting for 75% and producing a quarter of Tanzania's Gross Domestic Product (Kimaro *et al.*, 2015).

Various authors have examined possible problems facing the involvement of youths in agricultural activities. Njoku (1999) for example, explained these problems to include the drudgery in agriculture due to dependency on hand hoes, poor investments in developing countries usually discriminate against agriculture, the backwardness of the

rural areas where farming activities predominate and lack of social amenities such as electricity, good roads, market and schools.

On the other hand, Daudu (2009) revealed that youths play important roles in the supply of labour, project initiations and the use of such initiations to gain outside help. Also their participation in agricultural programmes is mainly through youth's organizations which include local social clubs and young farmers' organizations. Moreover, the sector is characterized by poor pay, job insecurity and poor work conditions (Kayombo, 2012). The agricultural sector is dominated by small scale subsistence farming characterized by the reliance on hand hoe as the main cultivating tool which sets obvious limitations on the area of crops that can be grown using family labour and the achievement of food security and poverty reduction (Kayombo, 2012).

However, much of the given documentation on the challenges that youth encounter as they participate in crop production activities, youth nowadays prefer to move to towns and engage in non-agricultural activities including transportation (Laevy and Smith, 2010; Adekunle *et al.*, 2009). They do not view the agriculture field as an attractive area to work in anymore (Abdullah, 2012).

But, those youth who opt to remain in their rural areas and are still actively engaged in crop production activities despite the challenges they face. What keeps them in rural areas has been little researched. Therefore, this paper examines the socio-economic characteristics that influence the rural youth to continue with crop production activities.

2.3 Theoretical Framework

This paper is supported by the Theory of Planned Behaviour as an interpretive lens (Ajzen, 1991). The study is primarily concerned with identifying the factors underlying the formation and change of behavioural intent. It assumes that a person's behavioural intent is determined by an individual's attitude toward behavior, subjective norms and perceived behavioural control. The theory is based on the assumption that, Behavioural intent is a proxy measure for behaviour. It represents a person's motivation in the sense of her or his conscious plan or decision to perform certain behavior where the stronger the intention is, the more likely the behavior will be performed. Attitude toward behavior refers to the degree to which a person has positive or negative feelings of the behavior of interest. It entails a consideration of the outcomes of performing the behavior. Subjective Norm refers to the belief about whether significant others think he or she will perform the behaviour (Ajzen, 1991). It relates to a person's perception of the social environment surrounding the behaviour. Perceived Behavioural Control refers to the individual's perception of the extent to which performance of the behaviour is easy or difficult. It increases when individuals perceive they have more resources and confidence (Ajzen, 1991).

Therefore, the intent of the rural youth to participate in crop production falls under a number of socio-economic considerations including; land access, input availability and affordability, market, price determination, accessibility of agricultural extension services and availability of transportation in order for them to actively engage in crop production activities. Individuals usually behave in a rational manner in the sense that they take available information into account and implicitly or explicitly consider their alternative actions. Therefore, an individual's intention to act or not to act is attributed to a number of determinants of the course of action.

2.4 Methodology

2.4.1 Description of the study area

This study was conducted in the Morogoro district. The district is one of the six districts of the Morogoro region, others being Ulanga, Kilombero, Kilosa, Mvomero and Gairo. Morogoro district is formed by two councils namely Morogoro District Council and Morogoro Municipal Council. According to the 2012 National Population Census Morogoro district had a total youth population of about 90,176 (URT, 2013). Morogoro district is divided into three ecological zones namely; mountainous areas, low mountainous zones and Savannah zones all of which are favourable for agricultural activities (URT, 2013). Furthermore, there are nine rivers passing through Morogoro district including; Mgeta Kafa, Ruvu, Wami, Msongozi, Mbulumi, Mkata, Mkondoa, Madukwa and Ngerengere of which they are so potential for agricultural activities (URT, 2013). The major agricultural activities carried out in the district include small scale farming (food e.g.; maize, paddy, beans, cassava and cash crops e.g. cotton and sugar cane), cattle keeping (mainly indigenous livestock e.g. cattle and goats). The study area is also purposively chosen due to its vast potential in crop production because of the favourable arable land and available water for agricultural activities to be effectively and efficiently carried out. This favourable environment for agricultural production is more likely to attract the youth to remain in the rural areas to engage in crop production. From the study findings the following are the types of crops grown in the study area which include; maize, paddy, sunflower, peas, cassava, banana, vanilla, clove, tomato, watermelon. The study findings reveal that the most preferred crop by the rural youth was maize (81.2%). Maize has been the most important staple food for many areas in Tanzania (ACT *et al.*, 2010). Maize provides 60% of dietary calories and more than 35

percent of utilizable protein to the Tanzanian population. It is also a major source of income for the majority of smallholders. Maize is produced for both home consumption and the market (about 40% is sold, mostly locally) (FAO, 2010). Annual per capita consumption is 73 kg per person per year. Consumers prefer white flint maize (ACT *et al*, 2010).

2.4.2 Research Design

A convergent parallel mixed methods research design was used for data collection (Creswell, 2014). The design allows the researcher to converge quantitative and qualitative data to provide a comprehensive analysis of the research problem. It also enables the collection of both quantitative and qualitative data at the same time and then integrates the data into the interpretation of the overall results (Creswell, 2014).

2.4.3 Sampling techniques and sampling procedures

A multistage sampling technique was used to obtain the study sample. The sampling techniques used in this study included purposive and simple random sampling. The selection of the study sample followed the existing administrative units namely; divisions, wards and villages. Purposive sampling was used to obtain the study area (Morogoro district) where simple random sampling was used to obtain three divisions (Mvuha, Matombo and Mikeke) from Morogoro District Council. Six wards (Mvuha, Serembala, Tawa, Kisenu, Mkambarani and Mikeke) were randomly selected two from each division randomly sampled. Furthermore, a random sampling technique was used to obtain the twelve villages namely; Tulo, Dala (Kilengezi), Kiganila, Magogoni, Kitungwa, Tawa, Mtamba, Kibangiri, Mtego wa Simba, Mkambalani, Mikeke and

Lubungo. According to the United Nations, the youth is a person between the ages of 18-35 (UN, 2010). Thus a list of youth between the ages of 18-35 were established and eventually involved in this study with the assistance of the Village Executive Officer and the Village Agricultural Extension Officer.

Therefore, the sample size for the study was calculated from the following formula by (Cochran, 1973 and also cited by Bartlett *et al.*, 2001).

$$n = \frac{N}{1 + N(e)^2} \dots\dots\dots(1)$$

n= sample size

N=the population size

e =the level of precision

$$n=90176/1+90176(0.05)^2=399$$

The sample size = 399 youth

2.4.4 Data Collection

A structured questionnaire with closed-ended questions was used to collect quantitative data on the socio-economic characteristics that influence rural youth's participation in crop production activities. Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) were also used as the main methods of qualitative data collection. A checklist was used to gather information from 10 key informants (6 Village Executive Officers; 2 agro-input dealers and 2 Ward Agricultural Extension Officers). Moreover, 24 Focus Group Discussions (FGDs) two from each village, each of which consisted of between 9-12 youth crop producers were conducted (Barbour, 2011).

2.4.5 Data analysis

The Binary Logistic regression model as pointed out by Pallant (2013) was used to check associations of a variable with two responses categories including; if a respondent participate in crop production activities as a primary or main occupation or a respondent participates in crop production or as one of the household chores and not the main occupation. Therefore, the independent variable can either be categorical or continuous or both. The formula for the model is expressed below;

$$Li = \ln \left[\frac{Pi}{1-Pi} \right] = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + \dots - B_kX_k + U_i \dots \dots \dots (2)$$

$$Li = \ln \left[\frac{Pi}{1-Pi} \right] = \text{Logit of a Youth participation in agricultural crop production activities}$$

Where, $Pi = P[y=1]$

Where $y=1$ If a respondent participates in agricultural crop production activities as a primary occupation and $y=0$ otherwise

B_0 = constant of the equation, B_1 - B_6 = coefficient of the parameter to be estimated

Descriptive statistics, including frequency counts, means and percentages were used to examine the socio-economic characteristics that influence rural youth to participate in crop production activities.

The content Analysis Method as recommended by Josilowski (2017) and Mayring (2014) was used to analyse qualitative data. Transcripts from KIs interviews and FGDs were transcribed and coded into emergent themes and analysed (Mayring, 2014). This was informed by the interpretative phenomenological approach for purposes of understanding the phenomenon under investigation (Josilowski, 2017).

2.5 Results and Discussion

In the first part of this section the socio-demographic characteristics of youths involved in crop production are described, followed by the last part that presents the socio-economic characteristics predicting the likelihood of rural youth's participation in crop production activities.

2.5.1 Socio-demographic characteristics of the rural youth crop producers in the study area

The study findings in Table 2.1 present the major demographic characteristics that were considered in this study. These included: the age of respondents, sex of respondents, marital status, education level, residency of respondents and land ownership status of respondents. These socio-demographic characteristics were considered in the study to identify their influence on rural youth's participation in crop production activities.

2.5.1.1 Age of respondents

The study findings in Table 2.1 reveal that the highest age percentage 33.6% of the rural youth crop producers fall within the 23 - 27 years age range. The findings also corroborate with the study by Mende *et al.*, (2015) who found that the youth between the ages of 20-35 years are perceived to be more grown up and self-dependent who see agriculture as the most important income generating activity for their wellbeing while the young between 15-19 years are still young and dependent so they do participate in agriculture through working in their family farms in order to secure the families' socio-economic needs. Therefore, youth are more receptive to new ideas and practices, whereas at an advanced age such as elderly, people find it difficult to change practices (Akudugu, 2012).

2.5.1.2 Sex of respondents

The study findings in Table 2.1 also show that more than half (52.1%) of the respondents were male. In a female FGD held at Mtamba on 10th August 2018, the participants narrated that men get more involved in the crop production activities compared to women because women most of the time need to balance the responsibilities including taking care the children, domestic chores and farming at the same time. Furthermore, the study by Chikezie (2012) revealed that the low percentage of the female youth participation in agriculture production could be attributed to the fact that females are usually involved in several other activities outside farming like food vending, tailoring, petty trading and hair dressing. However, the study findings differ or contradict with those by Juma *et al.* (2018) who reported dominance of women in the farming enterprise in Kenya. This is due to the reason that women traditionally don't own land. Therefore, women are forced to work as casual labourers in the farms in order to get money for renting out farms. After getting farms they invest more of their labour force on the rented farm as well. For the men and women who participate in crop production are forced to remain in the rural areas where farms are available instead of moving to towns where they can't find them.

2.5.1.3 Marital status of respondents

The study findings in Table 2.1 reveal that 41.4% of the respondents were single, more than half of the respondents were married (50.9%). Marriage entails some kind of responsibility including providing food for the family. It was also affirmed by one KI (VEO) in Mtamba that:

“...this village is entirely dominated by Waluguru, who are also matrilineal, traditionally in matrilineal culture women or maternal uncles used to control land and hence during marriage it is the man who moves to wife’s family, the wife would remain having a strong power over land issues, the maternal uncle could even decide where to bury their daughter but things have changed over time because of many things including intermarriage, workforce, market force, commercialization of land allowing even the husbands to control land. Therefore, marriage is a very important institution here; it confers status, respect and maturity for a man to be assigned a portion of land for crop production activities...” (KI Mtamba 10th August 2018).

A study by Mende *et al.*, (2015) and Machimu (2017) indicated that marital status has a remarkable positive implication in crop production activities whereas for the married couples need to farm in order for their families to remain food secure. Furthermore, for the married, they may also not want to move to urban areas for the fear of breaking the family/ marriage and opt to remain and continue with crop production activities as a source of income and food for their survival.

2.5.1.4 Education level of respondents

The study findings in Table 2.1 also indicate that majority (60.4%) of the respondents had attained primary education level. This implies that the majority of respondents had a basic education level with more emphasis on reading and writing, followed by 38.1% of the respondents who had attained a secondary education level. In a female FGD held at Tulo on 30th July 2018, participants reported that they see no point of going to town

since they are not professionals, they lack vocational skills. They asked why they should go to town where they cannot find decent jobs. Therefore, agriculture was mentioned to be the main job for them. Educational status is an important personal trait as it is a predictor of an individual's level of understanding of government policy strategies aimed at enhancing farm output, income and farmer's welfare Douglas *et al.* (2017). Moreover, education is also thought to create a favorable mental attitude for the acceptance of new practices (Waller, 1998 and Caswell, 2001).

2.5.1.5 Residence of the respondents

The study findings in Table 2.1 also show that 44.1% of the respondents still reside at their parents/ guardians home. More than half (55.9%) of the respondents are not residing at their parents/ guardians home, they have their own houses to stay and own land for farming, with the fear of losing them majority of the youth opt to remain in their rural areas and actively engage in crop production activities instead of moving to town, some of them are married and they have families to take care of including providing food for the family. In one of the key informant interviews with the Kiganila village executive officer on 16th July 2018, it was affirmed that:

“...it has been a tendency by the youth in this village wishing to be self-independent, they would ask their parents/ guardians for a portion of land and for those who are in position to purchase a piece of land they would do so and build their own houses especially for those who are married or for those who wish to get married soon or later....” (KI Kiganila 16th July 2018).

2.5.1.6 Land ownership status and experience in crop production

The study findings in Table 2.1 also show that 48.6% of the rural youth crop producers acquired land. More than half (51.4%) of the rural youth crop producers never acquired land and 37% of the respondents used parent's land followed by tiny proportion (22.8%) of respondents who rented out farms. This implies that farmer's farm size is determined by what plot of land is allocated to him or her per growing season. In a male FGD held at Kibangiri on 10th August 2018, participants reported that ownership of land is the main component in the farming process however majority of the rural youth do not own pieces of land. They wondered how they could engage in crop production if the government does not take action. The findings are also in line with those by International Fund for Agriculture Development (IFAD) (2011) that tenure issues affect every day's choices of farmers about the extent to invest in the long-term wellbeing of their land or to adopt new technologies and innovations.

Table 2. 1: Socio-economic characteristics of rural youth crop producers (n =399)

Characteristics	Category	Frequency	Per cent
Age group in years	18 - 22	129	32.1
	23 - 27	134	33.6
	28 - 32	100	25.1
	33 - 35	36	9.2
Sex	Male	208	52.1
	Female	191	47.9
Marital status	Married	203	50.9
	Single	165	41.4
	Divorced	12	3.0
	Widow	19	4.7
Education level	Primary education	241	60.4
	Secondary education	152	38.1
	College/University level	6	1.5
Still residing at parent's home	Yes	176	44.1
	No	223	55.9
Land ownership	Yes	194	48.6
	No	205	51.4
	Used parents' land	151	37.8

Rented out	91	22.8
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2.5.2 Socio-economic characteristics predicting the likelihood of rural youth's participation in crop production

Direct logistic regression was performed to examine the socio-economic characteristics that influence youth's participation in crop production activities. The model contained five independent variables (Age, Education, Sex, access to loan, In contact with the AEOs). The full model containing all predictors was statistically significant, $\chi^2(df=5, N=399)=153.096, p<0.001$, indicating that the model was able to distinguish between those who participate as their main occupation and those who don't participate as their main occupation. The model as whole explained between 31.9% (Cox and Snell R square) and 42.5% (Nagelkerke R squared) of the variance in main occupation status. As shown in Table 2.2 only three independent variables were statistically significant.

Table 2. 2: Logistic Regression predicting the likelihood of rural youth's participation in crop production (n =399)

Factors	B	S.E.	Wald	Df	Sig.	Odds ratio
Age of the respondents	0.249	0.034	54.175	1	0.000	1.282
Education level	-0.949	0.269	12.391	1	0.000	0.387
Sex of the respondents	-1.103	0.254	18.915	1	0.000	0.332
Access to loan	-0.060	0.249	0.058	1	0.810	0.942
In contact with the AEOs	-0.042	0.300	0.020	1	0.888	0.958
Constant	-4.022	1.237	10.567	1	0.001	0.018

Model fitting information: Cox and Snell $R^2 = 0.319$, Nagelkerke $R^2 = 0.425$. ($p = 0.000$);

2.5.2.1 Age of respondents

The strongest predictor of the participation in crop production activities was age, recording an odds ratio of 1.282. This indicated that for every additional year in age leads to 1.282 times more likely to participate as the main occupation. This could be attributed to increasing consciousness and self-realization of the importance of crop production with age based on experience. Girei and Giroh (2012) also affirm that the level of involvement in farming tends to increase with the optimum age group this is because as the age increase more responsibility are attached including making sure that their respective families are food secure but also meeting the economic needs of the families through the income that has been generated from crop production activities.

2.5.2.2 Education level of respondents

The odds ratio of 0.387 for education level was less than 1, indicating that those with higher education level from secondary to college were 0.387 times less likely to participate in crop production activities compared to those with no or with primary level of education. Previous studies such as those by Agboola *et al.* (2014) and Amrouk *et al.* (2013) established that ordinary educational level can bare positive implication on farming outcomes. These results contradict the findings by Douglas *et al.* (2017) and Kimaro *et al.* (2015) who established that literate farmers are better knowledgeable about current technologies for better production than illiterate farmers, hence their productivity increases, and they get greater farms' return. This might be because this

study considered farmers as a homogenous group and education seems to have higher payoff to productivity in modern than in traditional agriculture and youth want to practise modern agriculture that uses more of technical skills.

2.5.2.3 Sex of respondents

The odds ratio of 0.332 for the sex of the respondents was less than 1, indicating that women were 0.332 times less likely to participate in crop production activities compared to men. In a female FGD held at Mtamba on 10th August 2018, the participants narrated that men get more involved in crop production activities compared to women because women most of the time need to balance the responsibilities including taking care children, domestic chores and farming at the same time. Furthermore, the study by Chikezie (2012) revealed that the low percentage of the female youth participation in crop production could be attributed to the fact that female usually involved in several other activities outside farming like food vending, tailoring, petty trading and hair dressing. Moreover, the less participation by women in crop production might have been also attributed by other cultural factors including land tenure issues. It was also affirmed by one KI (VEO) in Mtamba that:

“Traditionally for example, it was very difficult to sell land amongst Waluguru, but because of market forces it has made it possible for them to sell land and allowing even men to buy and control land and get more involved in crop production activities ...” (KI Mtamba 10th August 2018).

In Tanzania, customary practices often require women to access land through their fathers, brothers, husbands or other male relatives who control the land (Moyo, 2016). The study findings in Figure 2.1 reveal that 28.9% of female respondents inherited land from family.

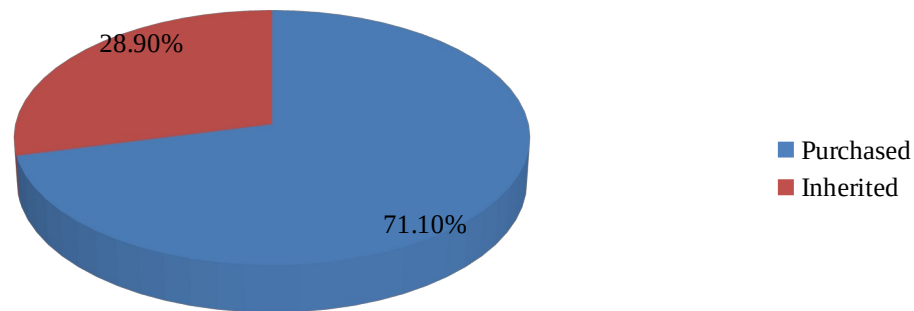


Figure 2. 1: Forms of land ownership in crop production activities among the rural female youth crop producers

2.6 Conclusion and Recommendations

Rural youth hold a positive perception about agriculture, they see their social and economic development being generated from agricultural activities they engage in, where they get food and income to meet their financial needs. The majority of respondents are married, they have families to take care of but again a tiny proportion of respondents still residing at the parents/ guardians house where they offer labour and actively engage in crop production to make sure that the families are food secure. Considerably the indigenous knowledge and the primary education level that majority of rural youth attained entirely help them to internalize on how best they could engage and improve their crop production activities.

It is therefore recommended that since a majority of the rural youth possess a basic primary level of education as the highest academic qualification mixed up with indigenous knowledge of farming techniques. The ministry of Agriculture and the

Ministry of Labour, Employment and Youth Development in collaboration with other agricultural stakeholders should host agricultural trainings to equip the youth with innovative knowledge to enable them to adopt new technologies and technical packages which could guarantee higher productivity.

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CHAPTER THREE

3.0 PERCEPTION OF RURAL YOUTH TOWARDS PARTICIPATION IN CROP PRODUCTION IN MOROGORO DISTRICT, TANZANIA.

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3.1 Abstract

This paper examines the perception and factors predicting rural youth's perception of participation in crop production activities in the Morogoro district. An understanding of this perception towards crop production by the youth is key in engaging the youth in agriculture and hence reduces the migration of the youth to urban areas. A convergent parallel mixed methods research design was adopted for this study. Qualitative data from

Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) were collected using interview guides while quantitative data were obtained by administering questionnaires to a random sample of youth. Additionally, a 5 point Likert scale was used to measure the levels of rural youth's perception of participation in crop production activities. Furthermore, the content Analysis Method was used to analyse qualitative data. Data from KIIs interviews and FGDs were transcribed and coded into emergent themes and analysed. Descriptive statistics, including frequency counts, means and percentages were used to describe the perception of rural youth towards participation in crop production activities in Morogoro district. An ordinal logistic regression model was used to analyse factors that determine youths' perception on crop production activities. The findings revealed that 74.2% of the rural youth held a positive perception towards participation in crop production, more than half (55.1%) of the respondents agreed with the statement that "I see there is adequate monetary gain from crop production activities", In the parameter estimates table the coefficients, their standard errors, the Wald test, degree of freedom and associated p-values (Sig.). both access to inputs and cool climate condition were statistically significant expected with a 1.65 and a 0.73 increase in the ordered log odds of being in a higher level of youths perception on the participation in crop production activities respectively. Though the majority of the youth hold a positive perception towards participation in crop production, 98.5% of the youth disagreed with the statement that "I think the government has put much more effort on youth engagement in farming activities" this implies that the youth have not recognized the different initiatives taken by the government including policy strategies that

empower youth on crop production activities. Therefore, the Ministry of Agriculture in collaboration with other relevant stakeholders should sensitize the efforts by the government on youth's engagement in crop production activities.

Key words: Rural youth, Perception, crop production, Tanzania

3.2 Introduction

Rural youth are the future of the agricultural sector, investing in the young population living in rural areas is said to be a key to enhancing agricultural productivity and food security (FAO, 2013). Young people have enormous potential for innovation and risk-taking that is often at the core of growth and development in rural areas particularly in smallholder agriculture (Ayel *et al.*, 2017). Young farmers and producers often have greater capacity for innovation and entrepreneurship than older adults (Brooks *et al.*, 2013; AGRA, 2015). This capacity may better equip them to address the emerging requirements of agriculture and the rural economy (IFAD, 2010).

Furthermore, rural youth have an important responsibility for their development and wellbeing as well as for the improvement of the community they live in. Because of their energy, enthusiasm and relatively uncommitted time, young men and women therefore are valuable human resources for agricultural and rural development (Agboola *et al.*, 2015). Given the opportunity, organization, direction and support, rural youth can participate and contribute significantly to agricultural and rural development (IFAD, 2010). Therefore as future adult participants in agricultural and rural development, rural

youth need to be prepared to improve their capabilities in crop production and to conserve productive resources in the rural environment.

To realise its potential, several policy strategies have been put in place to attract the youth to participate in agriculture in Tanzania. Some of these strategies include: in the late 1970s the Government established agricultural training institutes in some parts of the country which included the Ministry of Agriculture Training Institutes (MATI) and Livestock Training Institutes (LITI now LITA, i.e. Livestock Training Agencies) which offer demand driven short and long term courses at certificate and diploma levels in agricultural based programmes to equip young farmers and other stakeholders with better farming skills and agribusiness management. The formulation of Kilimo Kwanza (URT, 2009), whose 8th Pillar is on Science, Technology and Human Resources for Kilimo Kwanza to support provision of agricultural loans and land to entrepreneurial agricultural graduates so as to retain youth in agriculture.

In 2011 Sokoine University of Agriculture (SUA), through the Department of Agricultural Economics and Agribusiness launched the Sokoine University Graduate Entrepreneurs Cooperative (SUGECO) to provide entrepreneurship skills that could enable its graduates to engage in agriculture (Mori and Olomi, 2013). Similarly, the 2013 National Agriculture Policy underscored the importance of facilitating access to productive resources including labour saving technologies, surveyed land and irrigation infrastructure for the youth (URT, 2013).

These efforts are also reflected in the 2016-2021 National Strategy for youth involvement in agriculture which emphasizes on promoting decent livelihood in the agricultural sector. These strategies have had appreciable impact as a number of youth have resorted to various kinds of income generating activities in agriculture particularly crop production (Agboola *et al.*, 2015; Oluwasola, 2015; Gulamiwa, 2015; FAO, 2013; Njenga *et al.*, 2012; Ruta, 2012).

Evidence from other studies reveal that, youth prefer to move into towns and engage in non-agricultural activities as they seem to be more rewarding compared to crop production (Grando *et al.*, 2016). But, there are still some youth who opt to remain in their rural areas and are still actively engaged in crop production activities despite the challenges they face. Establishing their perception on being engaged in crop production will be useful in attracting them to remain in rural areas and actively participating in crop production activities. This paper examines the perception and factors predicting rural youth's perception of participation in crop production activities in the Morogoro district.

3.3 Theoretical Framework

This paper is supported by the Theory of Planned Behaviour as an interpretive lens (Ajzen, 1991). The study is primarily concerned with identifying the factors underlying the formation and change of behavioural intent. It assumes that a person's behavioural intent is determined by an individual's attitude toward behavior, subjective norms and perceived behavioural control. The theory is based on the assumption that, behavioural intent is a proxy measure for behaviour. It represents a person's motivation in the sense of her or his conscious plan or decision to perform certain behavior where the stronger

the intention is, the more likely the behavior will be performed. Attitude toward behavior refers to the degree to which a person has positive or negative feelings of the behavior of interest. It entails a consideration of the outcomes of performing the behavior. Subjective norm refers to the belief about whether the significant others think he or she will perform the behaviour (Ajzen, 1991). It relates to a person's perception of the social environment surrounding the behaviour. Perceived behavioural control refers to the individual's perception of the extent to which performance of the behaviour is easy or difficult. It increases when individuals perceive they have more resources and confidence (Ajzen, 1991).

Therefore, the intent of the rural youth to participate in crop production falls under a number of perception considerations including; land access, input availability and affordability, market, price determination, availability of agricultural extension services and availability of transportation in order for them to actively engage in crop production activities. Individuals usually behave in a rational manner in the sense that they take available information into account and implicitly or explicitly consider their alternative actions. An individual's intention to act or not to act is attributed to a number of determinants of the course of action.

3.4 Conceptual Framework

The behaviour or desire or motive to do something or not to do something is always attributed by an individual's attitude toward behaviour, subjective norms and perceived behavioral control. The Conceptual Framework for this study demonstrates the

interrelationship between independent and dependent variables. It assumes that the independent variables (perceptions, credit facilities, agricultural knowledge, education level, family background, policy and strategies, age, lack of other job alternatives and availability of land) have influences on (the dependent variable) youth participation in crop production.

3.5 Methodology

3.5.1 Description of the study area

This study was conducted in the Morogoro district. The district is one of the six districts of the Morogoro region, others being Ulanga, Kilombero, Kilosa, Mvomero and Gairo. Morogoro district is formed by two councils namely Morogoro District Council and Morogoro Municipal Council. According to the 2012 National Population Census Morogoro district had a total youth population of about 90,176 (URT, 2013). Morogoro district is divided into three ecological zones namely; mountainous areas, low mountainous zones and Savannah zones all of which are favourable for agricultural activities (URT, 2013). Moreover, there are about nine rivers passing through Morogoro district including; Mgeta Kafa, Ruvu, Wami, Msongozi, Mbulumi, Mkata, Mkondoa, Madukwa and Ngerengere of which they are potential for agricultural activities (URT, 2013). The major agricultural activities carried out in the district include small scale farming (food e.g.; maize, paddy, beans, cassava and cash crops e.g.; cotton and sugar cane), cattle keeping (mainly indigenous livestock e.g. cattle and goats). The study area is also purposively chosen due to its vast potential in crop production because of the favourable arable land and availability of water for agricultural activities to be effectively and efficiently carried out. This favourable environment for crop production

is hypothesized to most likely attract the youth to remain in the rural areas to engage in crop production.

3.5.2 Research Design

A convergent parallel mixed methods research design was used for data collection (Creswell, 2014). The design allows the researcher to converge quantitative and qualitative data to provide a comprehensive analysis of the research problem. It also enables the collection of both quantitative and qualitative data at the same time and then integrates the information into the interpretation of the overall results (Creswell, 2014).

3.5.3 Sampling techniques and sampling procedures

A multistage sampling technique was used to obtain the study sample. The sampling techniques for this study included purposive and a simple random sampling. The selection of study sample followed the existing administrative units namely divisions, wards and villages. The purposive sampling was used to obtain the study area (Morogoro district) where simple random sampling was used to obtain three divisions (Mvuha, Matombo and Mikeke) from Morogoro District Council. Six wards (Mvuha, Serembala, Tawa, Kisenu, Mkambarani and Mikeke) were randomly selected two from each of the divisions randomly sampled. Furthermore, a random sampling technique was used to obtain the twelve villages namely; Tulo, Dala (Kilengezi), Kiganila, Magogoni, Kitungwa, Tawa, Mtamba, Kibangiri, Mtego wa Simba, Mkambarani, Mikeke and Lubungu. According to the United Nations, the youth is a person between the age of 18-35 (UN, 2010). Thus, a list of youth between the ages of 18-35 were established and

eventually involved in a study with the assistance of the Village Executive Officers and the Village Agricultural Extension Officers.

Therefore, the sample size for the study was calculated from the following formula by (Cochran, 1973 and also cited by Bartlett *et al.*, 2001).

$$n = \frac{N}{1 + N(e)^2} \dots\dots\dots(1)$$

n= sample size

N=the population size

e =the level of precision

$$n=90176/1+90176(0.05)^2=399$$

The sample size = 399 youth

3.5.4 Data Collection

A structured questionnaire with closed-ended questions was used to collect quantitative data on the perception of rural youth towards participation in crop production activities in Morogoro district. Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) were also used as the main methods of qualitative data collection. A checklist was used to gather data from 10 key informants (6 Village Executive Officers; 2 agro-input dealers and 2 Ward Agricultural Extension Officers). Moreover, twenty four focus group discussions (FGDs) two from each village, each of which consisted of 9-12 youth crop producers were conducted (Barbour, 2011).

The perception was measured by using a Likert scale (Likert, 1932). The study used a 5 points Likert scale (5 = strongly agree, 4 = agree, 3= undecided, 2 = disagree and 1 = strongly disagree). Responses from all statements were combined to create a measurement of a Perception Scale (PS). Numerical values for the response options were reversed when calculating the overall score. The higher values indicated positive perception towards crop production while low values indicated negative perceptions.

The overall scores on the Likert scale were categorized into positive, neutral and negative perception. The highest possible score was calculated by multiplying 10 statements by 5 points to get 50 points, while the middle point was calculated by multiplying 10 statements by 3 points to get 30 points, and the lowest possible score was calculated by multiplying 10 statements by 1 point to get 10 points (Kothari, 2004). Therefore, 30 was the cut-off point and stood for neutral perception. Hence, scores from 10 to 29 on the overall scores were considered as negative perception; while 31 to 50 stood for positive perception.

3.5.5 Data analysis

Ordinal logistic regression as adopted from Wesbard and Britt (2014) was used to analyse factors that determine youths' perception on crop production activities. This is because the dependent variable was measured at three nominal categories, namely positive, neutral and negative perception (Wesbard and Britt, 2014). The assumptions of ordinal regression requires: first the dependent variable which is measured on an ordinal level, one or more of the independent variables is continuous, categorical or ordinal. Secondly, there should be no multi-collinearity which means that there should be no two or more independent variables which are highly correlated with each other and thirdly, there must be proportional odds, which means that each independent variable has an identical effect at each cumulative split of the ordinal dependent variable. In this study, these assumptions were tested and found that the technique is appropriate for data analysis to examine factors that determine youths' perceptions toward crop production activities.

The model analysis involved Wald-statistics and significant level of p values at 5%. The coefficient β value bears a negative or positive sign implying that negative or positive impact on the chances of the higher category in shaping perception. The Wald statistics were used to assess the contribution of the predictors to the outcome. If the variable is significant at a p-value less or equal to 5%, then the predictor is making significant contribution to the prediction of the dependent variable (Weisburd and Britt, 2014).

$$P(Y) = \frac{e^{\alpha + \beta_1 X_1 + \dots + \beta_k X_k}}{1 + e^{\alpha + \beta_1 X_1 + \dots + \beta_k X_k}}$$

Where:

$P(Y)$ = the probability of occurring (positive, negative or neutral perception), e = the natural log, α = the intercept of the equation, β_1 to β_k = coefficients of the predictor variables, X_1 to X_k = predictor variables entered in the ordinal regression model (Table 1.1), and Y = outcome (dependent variable).

Table 3. 1: The variables used in the ordinal logistic regression equation

Symbol of the Explanatory Variables	Explanatory Variables	Explanation The probability of respondents being grouped (1 = negative, 2 = neutral, 3 = positive)
X_1	Access to AEOs	1= Yes, 0 =No
X_2	Land ownership	1= Yes, 0 = No
X_3	Sex	1= Male, 0 =Female
X_4	Education level	1= Secondary to above, 0= otherwise
X_5	Marital status	1 = Married, 0= otherwise
X_6	Access to loan	1 = Yes, 0= No
X_7	Input affordability	1= Yes, 0= No
X_8	Access to Input	1= Yes, 0= No
X_9	Cool climate condition	1= Matombo, 0= otherwise

Descriptive statistics including frequencies and percentages were used to summarise the results. The content Analysis Method as recommended by Josilowski (2017) and Mayring (2014) was used to analyse qualitative data. Data from KIs interviews and FGDs were transcribed and coded into emergent themes and analysed (Mayring, 2014). This was informed by the interpretative phenomenological approach for purposes of understanding the phenomenon under investigation (Josilowski, 2017).

3.6 Results and Discussion

In the first part of this section the levels of rural youth's perception of participation in crop production activities are discussed. The second part presents the factors that determine rural youth's perception of participation in crop production activities

3.6.1 Levels of rural youth's perception towards participation in crop production activities in Morogoro district

The study findings in Fig. 3.1 reveal that 74.2% of the youth interviewed held a positive perception of crop production. This might be attributed to the fact that, crop production helps the youth to improve their standard of living and promote socio-economic development within their households by generating cash from selling crop produce and selling labour in the farm fields. For example it was affirmed in a female FGD held at Lubungu that farmers grow crops throughout the year during the rainy season they plant cereals, during the dry season they grow and water vegetables and fruits. Youth are attracted to the production of crops in both short incubation periods to make quick money but also long incubation period for generating income as well (Gurung *et al.*, 2016).

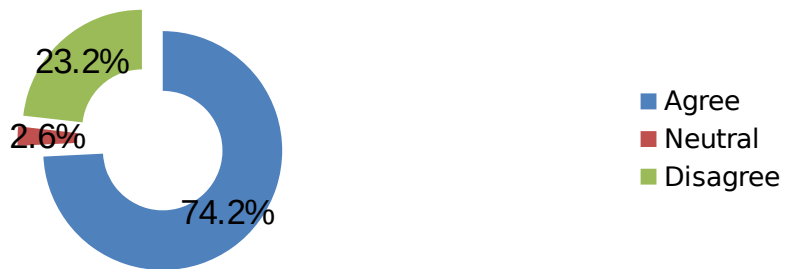


Figure 3. 1: Categories of perception towards crop production activities among the rural youth crop producers

The study findings in Table 3.2 further show that more than half (55.1%) of the respondents agreed with the statement that “I see there is adequate monetary gain from crop production activities”. This might be attributed to the fact that income is being generated throughout the year from the different crops they grow that are with shorter and long term incubation periods in the crop production activities. This is also confirmed by the Social Cognitive Career Theory (SCCT) which postulates that people are more likely to engage in an activity which leads to positive and payable outcomes, and this develops a positive perception of the activity (Lent *et al.*, 1994). For example, in an interview with one of the government officials for the Kisenu ward it was pointed out that:

"....as I have said earlier that majority of the youth in our ward are farmers whose life highly depends on agriculture and it is quite true that there is adequate monetary gain from crop production because we see farmers purchasing iron roofing sheets, building nice houses soon after selling their crop produce again people are nowadays motivated to buy solar power as you can see the solar panels from different houses all of which are the results of farming..." (KI, 22nd August, 2018)

The study findings in Table 3.2 also indicate that 98.5% of the respondents disagreed with the statement that “I think the government has put much more effort on youth engagement in farming activities” this is attributed to the fact that youth view or consider the government to be the major source for the agricultural sector’s survival if anything missing or has gone wrong the government is always in for it. For example, in one of the FGDs held at Dala (Kilengezi) on 30th August, 2018 it was revealed that there is a lot to be done, youth consider the government to have not done anything concerning the youth, youth look to be marginalized, no clear stipulated policies for the youth to access land, tough conditions over loan access, subsidies are not getting or reaching on time no permanent and reliable market for the crop produce.

Additionally, in a study by Leavy and Hossain (2014) they contend that in meeting youth’s aspiration in agriculture youth should be involved as major key stakeholders in all matters pertaining to the formulation and enactment of the agricultural strategies and policies to enhance good returns. In particular, the study findings in Table 3.2 also indicate that 63.2% of the respondents disagreed with the statement that “I see youth and the national agricultural livestock policies favour youth engagement in crop production” whereby, the overall objective of the policy was to empower and guide youth and other stakeholders in the implementation of youth development issues including agricultural activities. However, the policy recognized agriculture and animal husbandry as the largest possible employer for youths completing primary and secondary schools as well as those in higher learning institutions. “The government in collaboration with stakeholders shall provide conducive environment, develop and promote labour intensive infrastructure for youth to participate effectively in agriculture” (URT, 2007:48). This implies that the policy strategies are well written but they haven’t been implemented for the youths to realize the potentials that lies in being involved in agriculture.

The study findings in Table 3.2 also reveal that 77.9% of the respondents disagreed with the statement that “I think services offered by financial institutions provide chances of improving crop production activities” Loans are the most commonly offered financial services to the youth. Although, many times accessing loans remains difficult for young people. First of all, youth often lack the required collateral such as land or savings to obtain credit from financial institutions (FAO, 2014). In a male FGD conducted at Kiganila on 30th July 2018, it was revealed that youth need to access loans but the conditions attached for loan access are very tough, they require one to make a commitment and in most cases they want the youth to agree to offer a piece of land as a collateral if they fail to pay back the loan however majority of them do not own pieces of land.

Table 3. 2: Levels of rural youth’s perception towards participation in crop production (n=399)

Statement to measure		Disagree		Neutral		Agree	
		n	%	n	%	n	%
1	Crop production is the way of life for me to be proud of	100	25.1	3	8	296	74.2
2	I see there is adequate monetary gain from crop production	160	40.1	19	4.8	220	55.1
3	I see Youth and the national agricultural livestock policies favour youth engagement in crop production.	252	63.2	138	34.6	9	2.3
4	I think the government has put much more effort on youth engagement in farming activities	393	98.5	6	1.5	00	00
5	I think services offered by financial institutions provide chances of improving crop production activities	311	77.9	13	3.3	75	18.8
6	I see crop production is for the elderly people	338	84.7	61	15.3	00	00
7	I see crop production is for less educated ones	328	82.2	35	8.8	36	9.0
8	I think it is not possible to make saving from crop production	242	60.7	01	03	156	39.1
9	I think services offered by farmers’ association do not give chances of improving crop production activities	250	62.7	134	33.6	15	3.8
1	In general crop production has satisfactorily	163	40.9	00	00	236	59.1

0 improved my wellbeing

The study findings in Table 3.2 also indicate that 84.7% of the respondents disagreed with the statement that “I see crop production is for the elderly people” Youth are more needed to actively engage in crop production activities because they are the most active segment of the population and the engine that can produce the most in society (Aphunu and Atoma, 2010). Furthermore, Girei and Giroh (2012) affirm that the level of involvement in farming tends to increase with the optimum age group and similarly starts to drop with an increase in age. The study findings in Table 3.2 also indicate that 82.2% of the respondents disagreed with the statement that “I see crop production is for less educated ones” For example, in one of the FGDs held at Dala (Kilengezi) on 30th April, 2018, it was revealed that the youth disagree with that, in fact the agricultural sector needs people who are educated and skillful in terms of agricultural practices so that they can transform the sector people who are well educated and they have invested a lot of money in the paddy projects and it is from them sometimes that the youth secure jobs to support their lives. Crop production activities appear to be more attached to the youth who live in the rural areas where the majority of them are not or are semi educated.

The study findings in Table 3.2 also indicate that more than half (62.7%) of the respondents disagreed with the statement that “Services offered by farmers’ association do not give chances of improving crop production activities” In an interview with the KI held at Mikese it was further confirmed that

“.... youth have benefited a lot from the services offered in the farmer’s association for example in the TUJIKOMBOE farmers’ group, members received agricultural training and improved tomato seeds from a group of agricultural

supporters from Finland and they were looking forward to putting up a tomato paste plant....” (KI, 22nd August, 2018)

For example in a country like Taiwan the farmers' association acts as a channel to make government plans and policies known to all the farmers. By the same token, the farmers can express their views about government plans or make their problems known to the government. This two-way communication system has helped to make government agricultural plans to meet the felt needs of the farmers (Wang, 2016).

The study findings in Table 3.2 also indicate that more than half (60.7%) of the respondents disagreed with the statement that “I think it is not possible to make saving from crop production” Corroboratively, Oluwasola (2015) asserts that crop production is very profitable with income far exceeding the cost of production. In the same line, Mariyono (2018) added that profit from crop production can increase the income of the farm households. For example, in one of the FGDs held at Kitungwa, on 30th July, 2018, it was revealed that youth are capable of supporting their families because of the savings they make from crop production activities, though the saving keeps on fluctuating depending on how much they get from the field, there are times they get a lot of money sometimes just small amount of money for the family survival.

The study findings in Table 3.2 also indicate that more than half (59.1%) of the respondents agreed with the statement that “In general crop production has satisfactorily improved my wellbeing” this is also true from the findings in Table 3.3 which confirm that more than half (50.1%) of the respondents were satisfied with the benefits achieved from crop production activities. In a male FGD held on 13th august 2018 at Lubungo it was further revealed that crop production has positively promoted youth’s lives some of

them own assets including a motorcycle that also help them to generate income from the boda boda business they do after farming activities. Therefore, crop production has also enabled many of the rural youths to invest in off- farm activities and continued generating income for the social and economic needs and development.

Table 3. 3: Benefits expected and the overall frequency of satisfaction

Benefits	Category	n	%
Satisfied with the benefit achieved	Yes	200	50.1
	No	199	49.9
Benefits expected	Build and own a house	104	26.1
	To start up a retail shop	171	42.9
	To purchase a motorcycle	109	27.3
	To purchase a farm	170	42.6

3.6.2: Factors that determine rural youths' perception of participation in crop production

The full model containing all predictors was statistically significant $\chi^2(df=9, N=399)=36.857, p<0.000$ indicating the model was able to distinguish the levels of participation in crop production. The model as a whole explained between 8.8% (Cox and Snell R square and 11.98% (Nagelkerke R squared) of the variance in the level of participation in crop production

In the parameter estimates Table 3.4 we see the coefficients, their standard errors, the Wald test, degree of freedom and associated p-values (Sig.). both access to inputs and

cool climate condition are statistically significant; other variables included in the model such as access to AEOs, land ownership, sex, education level, marital status, access to loans, and input availability were not statistically significant.

3.6.2.1 Access to inputs

For access to inputs we expect a 1.65 increase in the ordered log odds of being in a higher level of youths' perception of the participation in crop production unlike those who don't have access to inputs.

3.6.2.2 Cool climate condition

Also, in cool climate, we expect a 0.73 increase in the ordered log odds of being in a higher level of youths' perception towards participation in crop production activities compared to other areas. For example Matombo area has a cool climate due to its high altitude. The land is very steep and the temperature varies between 18-20C for the greater part of the year. The area has a bimodal rainfall distribution. The main crops produced include tropical and sub-tropical crops such as banana and plantations, pineapple and citrus fruits trees other crops include coconuts, coffee, cocoa and spices such as black pepper, cinnamon and ginger which constitute cash crops of the area. Maize and upland rice mainly serve as food crops. Vegetables are for home consumption and market especially tomatoes and leafy vegetables. A study by Massawe (1992) on farming systems and agricultural production among small farmers in the Uluguru mountain area further indicated that the soil in Matombo may be grouped as red leached soils or latosols. The natural vegetation is mainly mixed with Miombo woodlands, grassland with scattered trees is also common especially in the lowland areas.

Table 3. 4: Factors that determine rural youths' perception towards participation in crop production (n =399)

Factors	Estimate (β)	Std Error (SE)	Wald	df	Sig.
Access to AEOs	0.435	0.307	2.004	1	0.157
Land ownership	-0.283	0.310	0.831	1	0.362
Sex	-0.349	0.259	1.810	1	0.179
Education level	0.167	0.285	0.342	1	0.559
Marital status	0.028	0.317	0.008	1	0.929
Access to loans	0.275	0.257	1.151	1	0.283
Input affordability	0.243	0.351	0.476	1	0.490
Access to inputs	1.651	0.360	20.988	1	0.000
Cool climate	0.733	0.291	6.326	1	0.012

Model fitting information: Cox and Snell R^2 = 0.088, Nagelkerke R^2 = 0.1198. (p = 0.000);

3.7: Conclusion and Recommendations

In this paper, it has been established that the majority of youth hold positive perceptions of crop production activities. Youth are perceived to be energetic in terms of the labour force in crop production activities compared to the other age groups like the elderly. More than half of the youth interviewed were satisfied with the benefits achieved and that the crop production has improved their wellbeing. However, with positive perceptions and the sector is profitable, it has been further established that with the money obtained from crop production activities, the majority of the rural youth tend to invest in off- farm activities including establishing retail shops in the villages. Rural youth have continued working with limited resources in the crop production activities in

such a way that it has contributed to low outputs and thus opting to invest in off- farm activities like retail shop business.

This study therefore recommends that the government should involve the youth and other stakeholders in the reform and formulation of the development policies which support rural youth participation in crop production activities. The Ministry of Agriculture in collaboration with other stakeholders should sensitize the efforts by the government on youth engagement in crop production activities, it appears that the youth have not recognized the different initiatives by the government including policy strategies that empower youth on crop production activities. By so doing they will tap more youth in crop production activities and improve rural economy as well as reducing the rate of youth migration from rural areas to urban areas. Rural youth should organize themselves in groups in order to share knowledge and experience for the improvement of agriculture production. This will also help them to secure loans from micro and macro credit institutions. The Ministry of Agriculture and the Ministry of Labour, Employment and Youth Development and other relevant stakeholders should provide more sensitization programs for rural youth participation for their awareness on crop production and their development. Given the opportunity, organization, direction and support, rural youth can participate and contribute significantly to agricultural and rural development.

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CHAPTER FOUR

4.0 FACTORS FACILITATING RETAINING OF RURAL YOUTH IN CROP PRODUCTION ACTIVITIES IN MOROGORO DISTRICT, TANZANIA.

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4.1 Abstract

This paper examines factors that contribute towards retaining rural youth in crop production activities in the Morogoro district. A convergent parallel mixed methods research design was adopted for the study. Quantitative data were obtained by administering questionnaires to a random sample of youth while Qualitative data from Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) were collected using interview guides. Descriptive statistics, including frequency counts, means and percentages were used to describe the factors that contribute to retaining rural youth in crop production activities. The content Analysis Method was used to analyse qualitative data. Transcripts from KIIs interviews and FGDs were transcribed and coded into emergent themes and analysed. The findings revealed that 87.7% of the respondents indicated to have been hired as casual labourers in crop production activities, 66.7% of the rural youth confirmed that farm inputs were available, and 84.5% of the respondents

affirmed that the farm inputs were affordable. The demotivating factors were reported as follows: that more than half (53.9%) of the crop producers were not satisfied with the services offered by buyers, more than half (54.1%) of the respondents had no access to loan. In spite of the demotivating factors, 87.2% of the respondents confirmed about the wish to continue with crop production activities. Therefore, factors that motivate and retain rural youths in crop production have direct implications on their social and economic outcomes. This study therefore suggests that with appropriate assistance from local government authorities youths should be encouraged to formulate farmers' groups or cooperatives. This will help them to be easily recognized for funding and training on better farming practices, increased productivity and entrepreneurship skills as most of facilitators require farmers to be in groups.

Key words: Rural youth, factors, crop production, Tanzania

4.2 Introduction

The Involvement of youths in various agricultural activities is perceived to be a significant engine for agricultural development (Gulamiwa, 2015; FAO, 2013). The youth are perceived to be energetic, creative and innovative which are the important pillars for agricultural development (Agboola *et al.*, 2015; Oluwasola, 2015; Njenga *et al.*, 2012). It is generally argued that the agricultural sector has the potential to fuel a sustainable inclusive growth process, providing jobs and supporting diversification (AGRA, 2015; Brooks *et al.*, 2013; FAO, 2013). To fulfil its potentials some scholars contend that the sector must first become more profitable, competitive, and intellectually stimulating (Brooks *et al.*, 2012, Proctor, 2012). However, the farming outcomes depend

on the strategies used in the daily implementation of agricultural practices, a well-picked up strategy does not only increase farmer's income but can also lead to overall sustainable community development (Grando *et al.*, 2016). Given the significance of the agricultural sector in providing employment for the youth, much has been written concerning the sector in recent years. In particular, some studies have focused on policies for engaging the youth (Ayel *et al.*, 2017; Losch, 2014; Rutta, 2012). The type of crops the youths engage in order to earn quick money (Brooks *et al.*, 2013; Rutta, 2012; Proctor *et al.*, 2012). The crucial role the youth have in ensuring the prosperity and sustenance of crop production and ensuring food security (Mutua *et al.*, 2017; Nguyen *et al.*, 2016; Anania, 2016; AGRA, 2015; FAO, 2014; Naamwintome and Bagson, 2013; White, 2012) Youth migration and the impact on agriculture (Laevy and Smith, 2010; Adekunle *et al.*, 2009).

Despite the crucial role played by the youth in ensuring food security, most youth prefer to move to towns and engage in non-agricultural activities as they seem to be more rewarding compared to crop production (Grando *et al.*, 2016). But, there are those youth who opt to remain in their rural areas and are still actively engaged in crop production activities despite the challenges they face. Determining the factors that motivate them to remain in rural areas will be useful in creating a favourable environment in attracting the rural youth to engage themselves in agriculture in rural areas. This paper examines the different factors contributing towards retaining the rural youth in crop production activities using the Morogoro district as a case study.

4.3 Theoretical Framework

This paper is supported by the Theory of Planned Behaviour as an interpretive lens (Ajzen, 1991). The study is primarily concerned with identifying the factors underlying the formation and change of behavioural intent. It assumes that a person's behavioural intent is determined by an individual's attitude toward behavior, subjective norms and perceived behavioural control. The theory is based on the assumption that, Behavioural intent is a proxy measure for behaviour. It represents a person's motivation in the sense of her or his conscious plan or decision to perform certain behavior where the strong the intention is, the more likely the behavior will be performed. Attitude toward behavior refers to the degree to which a person has positive or negative feelings of the behavior of interest. It entails a consideration of the outcomes of performing the behavior. Subjective norm refers to the belief about whether significantly others think he or she will perform the behaviour. It relates to a person's perception of the social environment surrounding the behaviour. Perceived behavioural control refers to the individual's perception of the extent to which performance of the behaviour is easy or difficult. It increases when individuals perceive they have more resources and confidence (Ajzen, 1991).

Therefore, the intent of the rural youth to participate in crop production falls under a number of factors including; land access, input availability and affordability, market, price determination, availability of agricultural extension services and availability of transportation in order for them to actively engage in crop production activities. Individuals usually behave in a rational manner in the sense that they take available information into account and implicitly or explicitly consider their alternative actions. An individual's intention to act or not to act is attributed to a number of determinants of the course of action.

4.4 Conceptual Framework

The behaviour or desire or motive to do something or not to do something is always attributed by an individual's attitude toward behaviour, subjective norms and perceived behavioral control. The Conceptual framework for this study demonstrates the interrelationship between independent and dependent variables. It assumes that the independent variables (perceptions, credit facilities, agricultural knowledge, education level, family background, policy and strategies, age, lack of other job alternatives and availability of land) have influences on (the dependent variable) youth participation in crop production.

4.5 Methodology

4.5.1 Description of the study area

This study was conducted in the Morogoro district. The district is one of the six districts of the Morogoro region, others being Ulanga, Kilombero, Kilosa, Mvomero and Gairo. Morogoro district is formed by two councils namely Morogoro District Council and Morogoro Municipal Council. According to the 2012 National Population Census Morogoro district had a total youth population of about 90,176 (URT, 2013). Morogoro district is divided into three ecological zones namely; mountainous areas, low mountainous zones and Savannah zones all of which are favourable for agricultural production (URT, 2013). Furthermore, there are nine rivers passing through Morogoro district including; Mgeta Kafa, Ruvu, Wami, Msongozi, Mbulumi, Mkata, Mkondoa, Madukwa and Ngerengere of which they are so potential for agricultural activities (URT, 2013). The major agricultural activities carried out in the district include small scale farming (food such as maize, paddy, beans, cassava and cash crops e.g. cotton and

sugar cane), cattle keeping (mainly indigenous livestock e.g. cattle and goats). The study area is purposively chosen due to its vast potential in crop production because of the favourable arable land and available water for agricultural activities. Such a favourable environment for agricultural production is more likely to attract the youth to remain in the rural areas to engage in crop production. From the study findings the following are the types of crops grown in the study area which include; maize, paddy, sunflower, peas, cassava, banana, vanilla, clove, tomato, watermelon. The study findings reveal that the most preferred crop by the rural youth was maize (81.2%). Maize has been the most important staple food for many areas in Tanzania (ACT *et al.*, 2010). Maize provides 60% of dietary calories and more than 35 percent of utilizable protein to the Tanzanian population. It is also a major source of income for the majority of smallholders. Maize is produced for both home consumption and the market (about 40% is sold, mostly locally) (FAO, 2010). Annual per capita consumption is 73 kg per person per year. Consumers prefer white flint maize (ACT *et al.*, 2010).

4.5.2 Research design

A convergent parallel mixed methods research design was used for data collection (Creswell, 2014). The design allows the researcher to converge quantitative and qualitative data to provide a comprehensive analysis of the research problem. It also enables the collection of both quantitative and qualitative data at the same time and then integrates the information into the interpretation of the overall results (Creswell, 2014).

4.5.3 Sampling techniques and sampling procedures

A multistage sampling technique was used to obtain the study sample. The sampling techniques for this study included purposive and a simple random sampling. The selection of study sample followed the existing administrative units namely divisions, wards and villages. The purposive sampling was used to obtain the study area (Morogoro district) where simple random sampling was used to obtain three divisions (Mvuha, Matombo and Mikeke) from Morogoro District Council. Six wards (Mvuha, Serembala, Tawa, Kisenu, Mkambarani and Mikeke) were randomly selected two from each of the divisions randomly sampled. Furthermore, a random sampling technique was used to obtain the twelve villages namely; Tulo, Dala (Kilengezi), Kiganila, Magogoni, Kitungwa, Tawa, Mtamba, Kibangiri, Mtego wa Simba, Mkambarani, Mikeke and Lubungo. According to the United Nations, the youth is a person between the age of 18-35 (UN, 2010). Thus, a list of youth between the ages of 18-35 were established and eventually involved in a study with the assistance of the Village Executive Officers and the Village Agricultural Extension Officers.

Therefore, the sample size for the study was calculated from the following formula by (Cochran, 1973 and also cited by Bartlett *et al.*, 2001).

$$n = \frac{N}{1 + N(e)^2} \dots\dots\dots(1)$$

n= sample size

N=the population size

e =the level of precision

$$n=90176/1+90176(0.05)^2=399$$

The sample size = 399 youth

4.5.4 Data collection

Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) were used as the main methods of qualitative data collection. A checklist was used to gather information from 10 key informants (6 Village Executive Officers; two agro-input dealers and two Ward Agricultural Extension Officers). Moreover, 24 focus group discussions (FGDs) two from each village, each of which consisted of 9-12 youth crop producers were conducted (Barbour, 2011). A structured questionnaire with closed-ended questions was used to collect quantitative data on the factors that facilitate the retaining of rural youth in crop production activities.

4.5.5 Data analysis

Descriptive statistics, including frequency counts, means and percentages were used to describe the factors that motivate and demotivate rural youth in crop production activities.

The content Analysis Method as recommended by Josilowski (2017) and Mayring (2014) was used to analyse qualitative data. Transcripts from KIIs interviews and FGDs were transcribed and coded into emergent themes and analysed (Mayring, 2014). This was informed by the interpretative phenomenological approach for purposes of understanding the phenomenon under investigation (Josilowski, 2017).

4.6 Results and Discussion

In the first part of this section the different factors that motivate and retain rural youth in crop production activities are discussed. Followed by the second part which presents the

factors that demotivate rural youth in crop production activities. The last part is about the desire to or not to continue with crop production activities by rural youth.

4.6.1 Factors motivating the rural youth in crop production activities in Morogoro district

4.6.1.1 Hired labourers

Crop production enables the rural youth to secure jobs in their respective rural areas. The study findings in Table 4.1 show that 87.7% of the respondents indicated to have been hired as casual labourers in crop production activities. This implies that majority of rural youth get directly and fully involved in the crop production activities. In a female FGD conducted at Tulo on 30th July 2018, it was revealed that majority of the youth offer labour power to other pig plantations like the paddy projects where they get paid 8000/= a day. The money they collect helps them to buy improved seeds, renting out farms and for the few families they use the money to hire tractors during land cultivation season instead of going to town where they can't find decent jobs since they are not professionals. Furthermore, from stories told by those who live in urban areas that there is no notable improvement in wealth instead they are told of experiencing a lot of difficulties such as poor earnings, high utility bills, difficult to get affordable food, leaving parents unattended, hard to get friends (most people are too impersonal), very artificial life. With all that they opt to remain and engage in crop production activities as the main job for them.

Table 4. 1: Factors that motivate and demotivate rural youth in crop production activities (n = 399)

Factors	Response category	Frequency	Percentage
<i>MOTIVATING FACTORS</i>			
Availability of hired labourers	Yes	350	87.7
	No	49	12.3
Availability of indigenous knowledge	Fellow youth	195	48.9
About weather patterns	Parents	171	42.9
	Village meetings	24	6.0
	Extension officers	9	2.2
Farm inputs availability	Yes	266	66.7
	No	133	33.3
Farm inputs affordability	Yes	337	84.5
	No	62	15.5
<i>DEMOTIVATING FACTORS</i>			
Presence of the AEOs	Yes	199	49.9
	No	200	50.1
Reliable market	Yes	200	50.1
	No	199	49.9
Price information	Market centers	91	22.8
	Fellow youth	99	24.8
	Brokers	209	52.4
Access to loan	Yes	180	45.1
	No	219	54.9

The study findings in Table 4.2 reveal the reasons and characteristics of the preferable hired labourers. More than half (87.7%) of the respondents who reported to have been hired as labourers affirmed that the youth were more preferred in the crop production activities and the reasons were 63.4% of the respondents said that the youth are energetic, followed by 24.3% of the respondents who pointed out that youth are easy to get because they don't have many responsibilities at home. The findings in Table 4.2 also show that all of the 87.7% of the hired labourers as respondents they revealed that

wages were paid based on the unit area cultivated. Additionally 87.7% of the hired labourers indicated that male were mostly preferred in terms of gender. In a female FGD conducted at Tulo on 30th July 2018, it was revealed that men are often believed to be able in work activities that are tough because they have more energy and that it takes a shorter period of time for them to finish the task given compared to the women who have other responsibilities at home.

Table 4. 2: The reasons and characteristics of the preferable hired labourers (n=350)

Variable	Category	n	%
Preferable hired labourers	Youth	350	87.7
Reasons for hiring the youth	Energetic	221	63.4
	Easy to get	85	24.3
Wages reached based on	Acres cultivated	350	87.7
Referred hired labourers in terms of gender	Male	350	87.7
Reasons for preferring the male	Energetic	211	60.4
	Don't have many responsibilities compared to women	95	27.3

4.6.1.2 Availability of indigenous knowledge about weather patterns

The availability of indigenous knowledge about weather patterns has motivated and retained the youth in crop production activities. The study findings in Table 4.1 reveal that 48.9% of the respondents received knowledge about weather patterns from their fellow youth, followed by 42.9% of the respondents who received knowledge about weather patterns from the parents. Majority of rural youth communicate about weather forecast information which is usually based on the previous agricultural season experience which has facilitated the rural youth to predict and remain engaging in crop

production activities. Ziergovél & Opere (2010) adds on that rural farmers highly depend on indigenous knowledge to predict about weather condition through various local weather indicators such as plants, animals, insects, the solar system and wind in predicting the rain onset, through that they spearhead the motive for the farmers to remain in farming activities.

4.6.1.3 Availability of farm inputs

Farm inputs are the main components in crop production activities. Whereby, the study findings in Table 4.1 show that more than half (66.7%) of the respondents indicated that the farm inputs were readily available at the village level. This implies that the availability of farm inputs motivated the rural youth in one way or the other to engage in crop production activities. This ease of availability of agricultural inputs is likely to boost agricultural inputs and hence raise their incomes. The findings are also in line with (AGRA 2013; FAO, 2013) who postulated that for agriculture to prosper, farm inputs need to be available, affordable, accessible, this is essential for improving the productivity and incomes of smallholder farmers in developing countries. In a female FGD conducted at Tulo on 30th July 2018, it was confirmed that the agro inputs shops are available at the village, if they don't get the agro inputs from the village shops the possible alternative is that they usually ask for the people who will be going to town anytime soon so that they can help to buy for them in town, sometimes they use the bus conductors but they give them some token as an appreciation.

4.6.1.4 Affordability of farm inputs

The study findings in Table 4.1 show that 84.5% of the respondents reported that the farm inputs were affordable. The affordability of the farm inputs is being supported by the findings in Table 4.3 which show the frequency of using the farm implements/tools during land cultivation, whereby all (100%) of the respondents indicating to have often used a hand hoe during land cultivation followed by 17.5% of the respondents indicated to have occasionally used an oxen plough and 17.0% of the respondents indicated to have occasionally used a tractor during land cultivation. In a female FGD conducted at Mkambalani on 30th July 2018, it was revealed that majority of the youth still rely on a hand hoe as means of cultivation, hand hoes are plenty in the shops at the village and they are sold at Tshs 5000/= the price is said to be reasonable and affordable.

Table 4. 3: Frequency of using farm implements by rural youth crop producers (n = 399)

Farm implements/tools		Often n	%	Occasionally n	%	Never n	%
1	Tractor	00	00	68	17.0	331	83.0
2	Power tiller	00	00	29	7.3	370	92.2
3	Oxen plough	25	6.3	70	17.5	304	76.2
4	Hand hoe	399	100	00	00	00	00

4.6.2 Factors that demotivate the rural youth in crop production activities in Morogoro district

4.6.2.1 Agricultural Extension Services

The study findings in Table 1.1 show that 49.9% of the respondents were not aware of the presence of the Agricultural Extension Officers (AEOs). Whereby, 50.1% of the respondents knew about the presence of the AEOs. The AEOs are very important in

ensuring proper agricultural technologies are being communicated and practised, it is important that agricultural extension services are provided in the right frequency and time (Rutatora and Matee, 2001). The findings in Table 1.4 further show that 24.3% of the respondents only made contacts with AEOs during the crop production season. This implies that majority of the rural youth crop producers don't seek or inquire agricultural extension services from the AEOs. For the respondents who made contact with the AEOs, the frequency of contacts made to AEOs were as follows; 44.3% of the respondents made just one contact with the AEO, 41.2% of the respondents made twice contacts to AEOs and 14.4% of the respondents made thrice contacts with the AEOs. In a female FGD conducted at Tulo on 30th July 2018, it was revealed that AEOs were not in the village and they have never seen them. There was a time they really suffered from the invasion of pests in their crops and they asked for help from the WEO through their VEO, time went by they never got any assistance, majority of them went direct to the Agro vet shops to inquire for assistance so whatever they were told they kept on sharing the information that's how they helped one another. It was also affirmed by one KI (VEO) in Mtamba that:

“... there was a time in our usual meetings I asked the Ward Executive Officer (WEO) about the AEOs and I was told that he came to report to the Ward office and requested for time to go and organize for his reporting for work but he never came back whenever he was called his phone was never picked up.....” (KI Mtamba 10th August 2018)

Table 4. 4: Awareness, contacts, purposes and frequency use of the available Agricultural Extension Officers

Variable	Category	n	%
Awareness of the presence of the AEOs	Yes	200	50.1
	No	199	49.9
Contacts made to AEOs	Yes	97	24.3
	No	302	75.7
Frequency of contacts made to AEOs during crop production sea During the crop production season	Once	43	44.3
	Twice	40	41.2
	Thrice	14	14.4
Purposes of the contacts made to AEOs	Occurrence of diseases	66	16.5
	Invasion of Pests	71	17.8

4.6.2.2: Reliability of the market

The study findings in Table 4.1 show that almost half (49.9%) of the respondents indicated to have no reliable market for the crop produce. However, the findings in Table 4.5 show that 37.6% of the respondents who had no reliable market depended much on brokers for selling their crop produce, followed by 29.1% of the respondents who had no reliable market also depended on the needy of the person who wanted to buy the crop produce. Poor access to agricultural markets, rural farmers have for so long depended on subsistence farming living other participants (traders and intermediaries) benefiting more (Magesa, 2014). The study findings in Table 4.5 show that more than half (53.9%) of the crop producers were not satisfied with the services offered by buyers. Furthermore, the study findings in Table 4.5 revealed that 39.3% of the

respondents who were not satisfied by the services offered by buyers low price was mentioned as the main factor followed by 34.6% of the respondents who were also not satisfied with the services offered by buyers who also said that buyers would sometimes buy the crop produce sometimes not depending on the quality of the crop produce needed and the price mentioned.

4.6.2.3: Price determination

The study findings in Table 4.1 show that more than half (52.4%) of the respondents usually inquire price information from brokers, followed by 24.8% of the respondents who normally inquire price information from their fellow rural youthful farmers and 22.8% of the respondents receive price information from the market centres. Traders usually take advantage of farmers' ignorance of the market price and extract a rent from them by offering very low prices for their produce because the farmers' uncertainty about market prices is usually high due to communities' remoteness and poor communication with market places (Subervie *et al.*, 2014). In a male FGD held at Kiganila on 30th July 2018, it was revealed that, buyers usually come and dictate their own price which in fact they are very low compared to the cost farmers incur in their crop production activities. If the farmers complain much the buyers would leave not purchasing their crop produce.

Table 4. 5: Reliable market and Price determination

Factor	Category	n	%
Is the market reliable?	Yes	200	50.1
	No	199	49.9
If No	We depend on brokers	150	37.6
	Depends with the needs of the person who wants to sell	116	29.1
Sources of price information	From the market centres	91	22.8
	Fellow youthful farmers	99	24.8
	Brokers	209	52.4
Whether satisfied with the services offered by buyers	Yes	168	42.1
	No	215	53.9
	Neutral	16	4.0
Reasons for not being satisfied with buyers	Prices are very low	154	39.3
	Sometimes they buy, sometimes they don't buy	138	34.6

4.6.2.4: Access to Loans

The study findings in Table 4.1 show that more than half (54.1%) of the respondents had no access to loans. Furthermore, the findings in Table 4.6 show that 38.8% of the respondents who had no access to loans complained about the high interest rates that are usually charged, followed by 36.8% of the respondents who also complained about the difficult conditions always attached towards loan access. In a male FGD conducted at Kiganila on 30th July 2018, it was revealed that youth really need to access loans but the conditions attached for loan access are very tough., They require one to make a commitment and in most cases they want the youth to agree to offer a piece of land as a collateral in case they fail to repay the loan; it should be also noted that majority of the

youth don't own pieces of land. Additionally, The KI (VEO) from Dala (Kilengezi) also affirmed that:

“... when we are about to start the land preparation and cultivation season there are people who normally come from town with their money and commitment papers with the aim of providing loan to the farmers and they want us leaders to be the witnesses and persuade farmers to obtain the loans but the challenges I see are the difficult conditions attached to loan requirements but again the interest rate is very high for example you are given Tshs 100,00/= and you are supposed to return Tshs 250,000/= in a three months' time or you return 4 bags of maize or rice. It is really very tough but there are youth who normally come to access the loans” (KI Dala (Kilengezi) 10th August 2018)

Loans are the most commonly offered financial products to youth. Although, many times accessing credit remains difficult for young people. First of all, youth often lack the required collateral such as land or savings to obtain credit from financial institutions (FAO, 2014).

The study findings in Table 4.1 also show that 45.1% of the respondents who had access to loan. The findings in Table 4.6 went further showing that 41.0% of the respondents got the loan from their fellow youth, followed by 39.9% of the respondents who got the loan from individuals out of their village. Furthermore, the findings in Table 4.6 show the reasons or the use of the loans by rural youth in the crop production activities as follows; 26.3% of the respondents used the loan to purchase pesticides, 25.1% of the respondents used the loan to rent farms, 11.3% of the respondents used the loan to hire

tractors during the cultivation season and 3.3% of the respondents used the loan to hire an Oxen plough during the cultivation season.

Table 4. 6: The situation behind access to Loan (n=180)

Variable	Response category	n	%
Accessibility to loan	Yes	180	45.1
	No	219	54.1
Where	Fellow youth	73	41.0
	Individuals from other villages	71	39.9
	Institutions or Organizations	34	19.1
Reasons for loan access	Rent farms	100	25.1
	Hired a tractor	45	11.3
	Hired an Oxen plough	13	3.3
	Bought pesticides	105	26.3
Reasons for those who did not access loan	High interest rate	155	38.8
	Tough conditions	147	36.8

4.7: The desire for the rural youth to continue with crop production activities

Despite the challenges rural youth face in pursuing the crop production activities, the study findings in Table 4.7 show that 87.2% of the respondents still need to continue with the crop production activities. Furthermore, 77.2% of the respondents revealed that they needed to continue with crop production activities because they don't have any other job to do and they need to generate income for their social and economic development needs. While, 34.1% of the respondents affirmed that they wanted to continue with crop production because they need food at home.

Table 4. 7: The desire for the rural youth to continue with crop production activities

Variable	Category	n	%
The needy to continue	Yes	348	87.2
	No	51	12.8
The reasons that keep rural youth in crop production activities	I don't have any other job	308	77.2
	We cultivate in order to get food at home too	136	34.1

4.8: What else do rural youth wish to do apart from crop production activities

While 12.8% of the respondents don't wish to continue with crop production activities instead they are opting for the following; the study findings in Table 4.8 show that 4.3% of the respondents wish to start up a charcoal business, 4.3% of the respondents wish to start raising pigs, 3.0% of the respondents wish to start rearing chicken, 1.8% of the respondents wish to start raising goats and only 1.3% of the respondents wish to start keeping cows.

Table 4. 8: What else rural youth wish to do apart from crop production activities

Variable	Category	n	%
What else do rural youth opt to do apart from crop production	No	51	12.8
	Charcoal business	17	4.3
	Rearing chicken	12	3.0
	Raising pigs	17	4.3
	Raising goats	7	1.8
	Keeping cows	5	1.3

4.9: Conclusion and Recommendations

Factors that motivate and retain rural youths in crop production have direct implications on their social and economic outcomes. However, the environment against crop production activities is surrounded by demotivating factors such as no or limited access

to land, poor farming techniques with no agricultural extension services, the usage of poor farming tools such a hand hoe, dependence on brokers for inquiring price information and as potential buyers or the source of market for the crop produce. Therefore, there is a need to address the demotivating factors so as to tap more youth in crop production activities instead of them opting to move to urban areas where they are confronted with difficulties and hardships in coping with life in town.

This study therefore suggests that with some assistance from local government authorities youths should be encouraged to formulate farmers' groups or cooperatives. This will help them to be easily recognized for funding and trainings on better farming practices and entrepreneurship skills as most of facilitators require farmers to be in groups. This can also improve their bargaining power and improve access to bulk buyers through aggregation of crops and promoting their commodities as a team. Moreover, the ministry of agriculture and the ministry of labour, employment and youth development in collaboration with other agricultural stakeholders should provide bank guarantees or make sure that the agricultural related policies and legislation recognize the many facets of land rights and usage by the youth.

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CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Major Findings and Conclusions

This study aimed at determining the participation of youth in crop production activities in the Morogoro district. The research issue for this study was the socio-economic characteristics that influence youth's participation in crop production activities in Morogoro district; the perception of youth towards participation in crop production activities in Morogoro district and establishing factors facilitating retaining of youth in crop production activities in Morogoro district. Hence, the major findings of this study which are used as the basis for recommendations are highlighted in the following subsections.

5.1.1 Socio-economic characteristics influencing rural youth's participation in crop production activities

Chapter two of this study discussed the socio-economic characteristics that influence youth's participation in crop production activities to address the first objective. The findings show that more than half (52.1%) of the respondents were male, this is because men are often trusted in work activities that are tough because they have more energy and it takes a shorter period of time for them to finish the task given compared to the women who are awaited by several responsibilities at home. The findings also indicate that majority (60.4%) of the respondents had attained primary education level. This implies that the majority of respondents had a basic education level with more emphasis on reading and writing that wouldn't give them decent jobs in town if at all they were to move to urban. However, more than half (51.4%) of the rural youth crop producers

never acquired land. This implies that farmer's farm size is determined by what plot of land is allocated to him or her per growing season. The full model containing all predictors was statistically significant, $\chi^2(df=5, N=399)=153.096, p<0.001$, explained between 31.9% (Cox and Snell R square) and 42.5% (Nagelkerke R squared) of the variance in main occupation status where three independent variables were statistically significant namely; age, this affirms that the level of involvement in farming tends to increase with the optimum age group this is because as the age increases more responsibilities are attached including making sure that their respective families are food secure but also meeting the economic needs of the families through the income that has been generated from crop production activities. Education, the odds ratio of 0.387 for education level was less than 1, indicating that those with higher education level from secondary to college were 0.387 times less likely to participate in crop production activities compared to those with No or with primary level of education and sex of the respondents, the odds ratio of 0.332 for sex of the respondents was less than 1, indicating that women were 0.332 times less likely to participate in crop production activities compared to men.

5.1.2 The perception of rural youth towards participation in crop production activities in the Morogoro district

Youths' perception towards participation in crop production holds a positive perception at 74.2%. This is attributed to the fact that, crop production helps the youth to improve their standard of living and promote socio-economic development within their families by generating cash from selling crop produce and selling labour in the farm fields. More than half (55.1%) of the respondents agreed with the statement that "there is adequate monetary gain from crop production activities", In the parameter estimates table the

coefficients, their standard errors, the Wald test, degree of freedom and associated p-values (Sig.). both Access to Inputs and cool climate condition were statistically significant expected with a 1.65 and a 0.73 increase in the ordered log odds of being in a higher level of youths perception on the participation in crop production activities respectively. Though the majority of the youth hold a positive perception towards participation in crop production, (98.5%) of the youth disagreed with the statement that “The government has put much more effort on youth engagement in farming activities” this implies that the youth have not recognized the different initiatives by the government including policy strategies that empower youth on crop production activities.

5.1.3 Establishing factors facilitating retaining of rural youth in crop production activities in Morogoro district.

Youth establish considerable factors that facilitate retaining them in crop production activities as follows;

The availability of farm inputs motivated the rural youth to engage in crop production activities. Whereby, the study findings show that more than half (66.7%) of the respondents indicated that the farm inputs were readily available at the village level. This ease of availability of agricultural inputs is likely to boost crop production activities and hence raise their incomes. The study findings also show that 84.5% of the respondents reported that the farm inputs were affordable. The majority (100%) of the respondents use a hand hoe as the main tool during land cultivation which is sold 5000/= the price was said to be reasonable and affordable.

However, the demotivating factors in crop production included the following 49.9% of the respondents were not aware of the presence of the Agricultural Extension Officers (AEOs). Majority of rural youth usually go direct to the agro vet shops to inquire for assistance whenever there is a problem in the farms sometimes they are given wrong treatment prescription because the agro vet dealers are after profit. The study findings show that more than half (53.9%) of the crop producers were not satisfied with the services offered by buyers, buyers would sometimes buy the crop produce sometimes not depending on the quality of the crop produce needed and the price mentioned. The study findings show that more than half (54.1%) of the respondents had no access to loan. Youth really need to access loan but the conditions attached for loan access are very tough, they require one to make a commitment and in most cases they want the youth to agree to offer a piece of land as a collateral in case they fail to repay the loan, meanwhile it should be also noted that majority of the youth don't own pieces of land.

5.2 Recommendations

The study advances the following recommendations to enhance youths' participation in crop production activities and attaining desired farming outcomes in the study area and other areas of Tanzania with a similar context.

5.2.1 Enhancing rural youths perception of crop production activities

Based on the study's observation that investing in crop production activities of both short incubation and long term incubation periods has enabled the rural youth to generate income throughout a year and this has catalysed youth's positive perception towards crop production. Therefore, the local government in collaboration with the youth and other agricultural development partners are urged to create high income

generating farming activities like growing high value crops and identifying niche markets for the products to motivate the youths' interest in crop production activities.

Furthermore, the Ministry of Agriculture and the Ministry of Labour, Employment and Youth Development should put in place a supportive structure like producer incentive for all the youth participating in crop production and assist in arranging lucrative markets for youth products inside and outside the country. This will help them to realize their ambition in crop production activities and ultimately improve their perception towards the agricultural sector.

5.2.2 Establishing factors facilitating retaining of youth in crop production activities in Morogoro district.

It was observed that while land size, access to loans, availability of the farm inputs, absence of AEOs, source of price determination, market for the produce, weather information have direct repercussion to crop production activities. The government through the Ministry of Agriculture in collaboration with local government authorities and other agricultural development partners are urged to set up infrastructure for youth to comfortably engage in crop production activities for example setting aside land specifically for youth project and irrigation systems. The local government should partner with research academic institutions such as Sokoine University of Agriculture in equipping the youth with farming and entrepreneurial skills to enable them to adopt new technologies and technical packages which could guarantee higher productivity and production. The local government, in collaboration with the youth and other agricultural development partners, should come up with strategies to showcase the career paths of successful young farmers as exemplary models to motivate the youth while improving the image of the industry in their eyes. In the same vein, higher value crops can be

produced in demonstration areas to show young people the income that can be generated from crop production. The government through its Ministry of Constitutional Affairs and Justice and policy makers should make sure that policy and legislation recognize the many facets of land rights and usage by speeding up and blending the current land formalization programme with the creation of awareness on tenure security. This could make financing of agriculture attractive to the formal banking industry and will help the youth to realize their technology modernized farming desire by using their land as collateral.

5.2.4 Areas for further research

The study recommends the following areas for further research, which were not focus of this study:

- i. This study did not focus on other factors which in one way or the other contribute to the household's income such as animal husbandry which is also a major part of the agricultural practice carried out by youth in some of the villages visited. Therefore, knowing the influence of animal husbandry to the contribution of youth's social and economic development this will unveil the remaining reasons to the factors that keep rural youth in the villages instead of moving into towns and engage in non-agricultural activities.
- ii. Future researchers should concentrate on researching on every single crop produced by youths so as to identify the influences and enable policy makers to improve and implement appropriate intervention programmes that will enhance productivity and perception towards the sector.

- iii. The future research based interventions for improving the rural youth engagement in crop production activities should target the youth based on their different segments capabilities. For example considering how youth access funds, the quality of the crops under production and land size under farming.

5.2.5 Contribution of study to the body of knowledge

- i. The study on one hand provides evidence to the factors that keep rural youth in crop production activities and the associated benefits that have motivated youth's interest in crop production activities. On the other hand, it provides the associated evidence to the factors that demotivate rural youth in crop production activities. This is critical for key stakeholders to design and take possible actions to help the rural youth engaging in crop production activities. This is done by banking on positive factors and dealing with demotivating factors.
- ii. The study unveils the perception of rural youth towards participation in crop production activities. Youth have a positive perception towards crop production activities. This is attributed to the fact that youth generate income throughout a year by engaging in crop production of both incubation periods. For example, during the shorter incubation period they might opt to produce and sell vegetables and during the long incubation period they produce and sell cereals.
- iii. This study contributes in the understanding of why a section of youth remains in rural in crop production while the majority migrates to town.

APPENDICES

Appendix 1: A Questionnaire on the Determinants of Youth's Participation in Crop Production in Morogoro District, Tanzania

Background Information

1. Village name.....
2. Ward name.....
3. Age of the respondent (Years)
4. Sex of the respondent (1) Male (2) Female
5. What is your highest level of education?
 1. No formal education
 2. Primary
 3. Secondary education
 4. College/ University education
 5. Others (specify)
6. Are you still residing at your parents/guardian house? (1) Yes (2) NO
7. Marital status: (1) Married (2) Single (3) Divorced (4) Widow (5) Other (specify)
8. Household size:..... Males Females
9. How many acres of land does your family own?.....
10. Do you personally own land?

(1) Yes (2) NO
11. If Yes, how many acres of land do you own?.....
12. How did you acquire this land?

(1) Purchase (2) Inherited (3) Allocated by the village government (4) Other, specify

13. If NO, give reasons why?

14. How did you come to decide to engage yourself in crop production?.....

15. Who primarily influenced you to engage in crop production?

(1) Parents (2) Fellow youth (3) Relatives (4) Others,
Specify.....

16. Why the mentioned person

.....

17. Why do you think others are leaving for the urban areas?.....

.....

18. What do you think should be done in order to motivate the youth to remain in rural areas?.....

.....

.....

19. For how long have you been engaging in crop production?

.....

20. Mention the major types of crops that you are involved in order of priority

1.

2.

3.

4.

5.

6.

7.

21. Give reasons for your order of priority

above.....

22. Who is engaged more in crop production in your village?

(1) Youth (2) middle age (3) old (4) Very old

23. Give reasons.....

24. Of the group mentioned above, who is engaged more in terms of gender?

(1) Male (2) Female

25. Give reasons why.....

26. Have you ever hired laborers for the crop production activities?

(1) Yes (2) NO

27. Which are the mostly preferable hired laborers?

(1) Youth (2) middle age (3) old (4) Very old

28. Give reasons why?.....

29. For the hired laborers, wages are reached based on?

(1) Hours spent (2) acres cultivated (3) Other, specify

30. From the group mentioned above, which ones are more hired in terms of gender?

(1) Male (2) Female

31. Give reasons why.....

32. Where do you get information about the weather condition?

(1) Fellow Youth (2) middle age (3) old (4) Very old (5) Newspapers (6) Radio

(7) Village meetings (8) Extension officers

(9) Others, specify.....

33. Do you know who your Agricultural Extension Officer is?

(1) Yes (2) NO

34. Have you ever made any contact with him/her?

(1) Yes (2) NO

35. If Yes, how many times have you come in contact with him/her during last year crop production season?

(1) Once (2) Twice (3) Thrice (4) More

36. What was the purpose for the contact?

(1).....

(2).....

(3).....

37. If NO, why?.....

38. Have you ever had any seminar on youth and crop production?

(1) Yes (2) NO

39. Have you ever attended any of the seminars on youth and crop production?

(1) Yes (2) NO

40. If NO, give reasons.....

41. If Yes, How often have you attended the seminars?

(1) Once (2) Twice (3) Thrice (4) More

42. If Yes, what specifically was the purpose of the seminar?

(i)

(ii)

(iii)

43. Who provided such seminars?

(iv)

(v)

(vi)

44. Were there any attendance payments for the seminars?

(1) Yes (2) NO

45. If Yes, How much?

46. Are the farm inputs available in your village markets?

(1) Yes (2) NO

47. If NO, give reasons.....

48. If Yes, are the farm inputs affordable?

(1) Yes (2) NO

49. Indicate the frequency of using the following farm implements during land cultivation

Farm implements/tools	Often	Occasionally	never
Tractor			
Power tiller			
Oxen plough			
Hand hoes			

50. Indicate in the Table below farm inputs and the amount used in the last crop production season

	Input	Supplier	Units	Quantity	Price per unit	Transport cost	Total Amount	Source of Fund
1	Fertilizer							
.								
2	Chemicals							
.								
3	Equipments							
.								

51. The table below weighs on youths' perception towards crop production activities; you are required to indicate your response by putting a tick (✓) in the box of your choice.

Statement to measure		1	2	3	4	5
		S A	A	U	D	SD
1	Crop production is the way of life to be proud of					
2	There is adequate monetary gain from crop production					
3	Youth and the national agricultural livestock policies favour youth engagement in crop production.					
4	The government has put much more effort on youth engagement in farming activities					
5	Services offered by financial institutions provide chances of improving crop production activities					
6	Crop production is for the elderly people					
7	Crop production is for less educated ones					
8	It is not possible to make saving from crop production					
9	Services offered by farmers' association do not give chances of improving crop production activities					

10	In general crop production has satisfactory improved my wellbeing					
----	---	--	--	--	--	--

52. What are the challenges during land preparation and cultivation?

- (1).....
 (2).....
 (3).....

53. How did you solve the challenges mentioned above?

- (1).....
 (2).....
 (3).....

54. Do you have a reliable market for selling your produce?

- (1) Yes (2) NO

55. If No, why?

56. If Yes, How?

57. Can you afford to transport what you produce to the market?

- (1) Yes (2) NO

58. If NO, give reasons.....

59. If Yes, how do you transport the produce to the market place? How many km are there and how much does it cost? (Tick the answer)

Means of transport	Unit (Kg/km)	Cost
1.Trucks		
2.Bicycle		
3.Head load		
4.Ox-cart		
5.Others specify		

60. Where do you get or inquire price information about the produce?

- (1) From market centers (2) Fellow youth farmers (3) radio (4) Newspapers (5) Brokers (6)Others, specify.....

61. Are you satisfied with the following services offered by buyers?

	Service	1. Yes 2. No 3. Neutral	If Yes, How?	If No, Why?
1.	Price			
2.	Quality control			
3.	Weighing			
4.	Payment time			
5.	Communication in case of payment delay			
6.	Others (specify)			

62. Have you received any loan/credits for crop production?

(1) Yes (2) NO

63. If No, why.....

64. If Yes, from which institution/ organization?

65. What type of a loan did you get?

1.....
2.....

66. Do you get any constraints in accessing loan/credits? If, Yes (Please mention main constraints)

1.....
2.....
3.....

67. How do you cope with the mentioned constraints above?

1.....
2.....
3.....

68. What are your views concerning financial services provided to the youth engaging in crop production?

1.....
2.....
3.....

69. Apart from the financial institutions, are there any association(s)/organization(s) that assist you in the crop production?

(1) Yes (2) NO

70. If Yes, mention the organisation(s)

.....

71. If No, Why?

72. If Yes, what benefits do you get? (Rank the alternatives as per your understanding)

1. Technical support
2. Farm inputs support
3. Transportation arrangements support.....
4. Financial support
5. Extension service support
6. Training support
7. Others (specify)

73. How does the association/organization motivate you to remain in the rural area?

74. Are you a member of any association/organization?

(1) Yes (2) NO

75. If NO why, give reasons.....

76. What are your opinions regarding the services offered by farmers' association/organization in terms of enabling people to join your farmers association?

1. Too tough 2. Reasonable..... 3. Easy

77. What is your view regarding crop producers farmers association/organization membership growth?

1. Increasing..... 2. Declining

78. If increasing what are the reasons?

- (i)
- (ii)
- (iii)

79. If declining what are the reasons?

- (i)
- (ii)
- (iii)

80. How many times have you attended in the association meeting this year?

- (i) One
- (ii) Twice
- (iii) Three to six times
- (iv) More than six times

81. What do you consider to be the major obstacles towards effective participation of members in the association activities?

- (i)
- (ii)
- (iii)

82. Who are the decision-makers in the association?

1. Leaders 2. All members 3. Other (specify)

83. What are your general views about crop producers' farmers association with respect to the following issues:-

- (i) Group management/leadership
- (ii) Financial management.....
- (iii) Economic performance
- (iv) Goal achievement
- (v) Leadership accountability
- (vi) Implementation strategies

84. What benefits did you expect to get from crop production activities?

- (i)
- (ii)
- (iii)

85. Are you satisfied with the benefits you have achieved?

1. No
2. Yes

86. If NO, why?

.....

.....

87. Which benefits have you achieved so far?

- (i)
- (ii)
- (iii)
- (iv)

88. Have you invested the benefits in other non-farm activities?

1. No
2. Yes

89. If NO, why haven't you managed to invest in other nonfarm activities? (Give reasons)

- (i)
- (ii)
- (iii)

90. Do you wish to invest in nonfarm activities in the future?

- (1) Yes (2) No

91. If Yes, give reasons.....

92. If NO, give reasons.....

93. If Yes, mention the activities

- (i)
- (ii)
- (iii)
- (iv)

94. Have you managed to save money from crop produce sale last season?

- 1. No
- 2. Yes

95. If yes, state the amount in TAS.....

96. Do you think you still need to continue with crop production?

- 1. No
- 2. Yes

97. If yes, what are the most important factors that keep you in crop production? (Rank answers as per order of importance)

- 1
- 2
- 3.....

98. If NO, what else do you expect to do instead of crop production?.....

99. Why have other youths decided to move to urban areas?

- 1
- 2
- 3.....

100. What things convinced the youth to move to urban areas?

- 1
- 2
- 3.....

101. Which of the challenge(s) below does need your solution address? Please only tick the most relevant boxes (you may tick more than one box).

1..... Limited or no access to land (including inheritance issues; access to finance to purchase land;

Land grabbing; customs and traditions that hinder youth's access to land)

2..... Limited or no access to finance (including lack of access to savings; credit; and insurance)

3..... Limited or no access to input and output markets (including access to information on markets; capacity to counter other market actors; access to niche markets)

4..... Limited or no access to knowledge, skills and information (including agriculture in schools; vocational training; intergenerational knowledge sharing; leadership skills; ICTs; image of agriculture; financial literacy, business and entrepreneurship skills; business advisory services)

5..... Problematic intergenerational transfer of family farms and small-scale agricultural enterprises (including bureaucracy; installation aid; succession planning)

6..... Limited or no engagement of youth in policy dialogue (including youth organization; representation and leadership; space for dialogue)

102. If there other challenges apart from the mentioned above, please explain

- 1
- 2
- 3.....

103. Does the challenge affect male and female youth differently?

(1) Yes (2) NO

104. If Yes, how?.....

105. Then, how far have you been addressing the challenges ticked up above?

- 1
- 2
- 3.....

Appendix 2: A Checklist for Focus Group Discussion (FGD) on the Determinants of Youth's Participation in Crop Production in Morogoro District, Tanzania

Division.....Ward.....

Village.....Date of interview.....

1. What drives the youths to urban areas?
2. What makes some youths to remain in the rural areas?
3. What is the likely impact of youth migration to urban areas?
4. Is it easy for the youth to access land in your village?
5. How likely are the youth likely to obtain loans?
6. How do you find with the conditions attached for accessing loans from the financial institutions?
7. Are the farm inputs available and affordable?
8. Are the markets readily available for your crop produce?
9. How easy is it to get advice from your agricultural extension officer?
10. What are the challenges the youths encounter as they participate in crop production?
11. What can be done to encourage more youths to stay in rural areas?

Appendix 3: A Checklist for Key Informant Interviews on the Determinants of Youth's Participation in Crop Production in Morogoro District, Tanzania

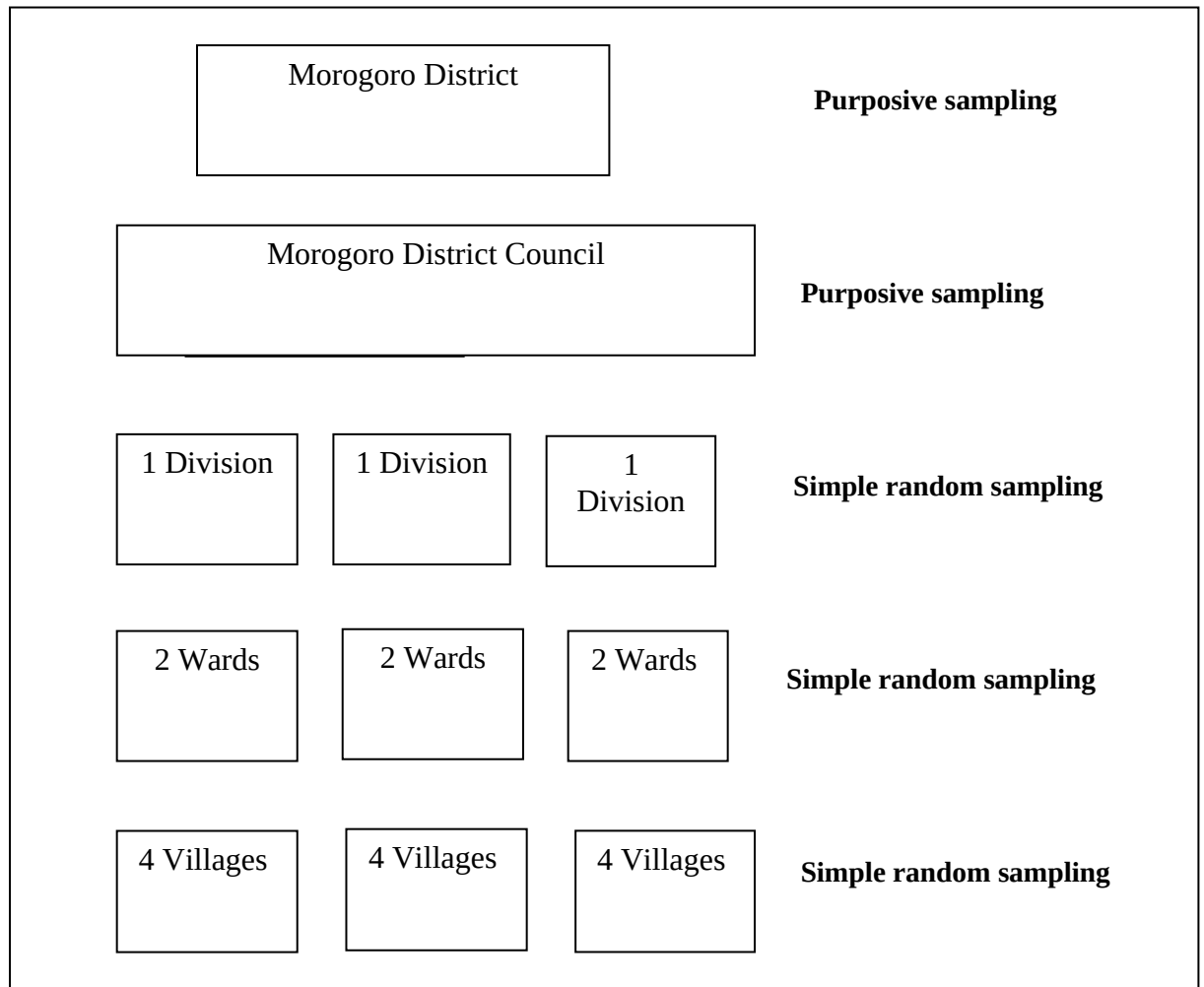
Division.....Ward.....

Village.....Date of interview.....

1. What drives the youths to urban areas?
2. What makes some youths to remain in the rural areas?
3. What is the likely impact of youth migration to urban areas?
4. Is it easy for the youth to access land in your village?
5. How likely are the youth likely to obtain loans?
6. How do you find with the conditions attached for accessing loans from the financial institutions?
7. Are the farm inputs available and affordable?
8. Are the market readily available for your crop producer?
9. How easy is it to give advice to crop producers by agricultural extension officer?
10. What are the challenges the youths encounter as they participate in crop production?
11. What can be done to encourage more youths to stay in rural areas?

Appendix 4: Description of explanatory variables as used in binary regression model

Variables	Units	Description	Expected sign
Age (X_1)	Years	Age of respondent	-
Sex (X_2)	Dummy	Sex (Male=1, Female = 0)	-
Marital status (X_3)	Dummy	Marital status (married=1, single=2, divorced=3)	+
Household Size(X_3)	Number	Total number of household members	+
Education (X_4)	Years	Years of schooling	indefinite
Access to Credits (X_8)	Dummy	1=Yes if accessed credit ten years 0 otherwise	+
Access to agr extension service (X_8)	Dummy	1=Yes if accessed extension service, 0 otherwise	+
Access to land	Dummy	1= Yes if accessed to land, 0 otherwise	+
Agricultural knowledge	Dummy	1= Yes if has agricultural knowledge, 0 otherwise	+
Lack of other job alternatives	Dummy	1=Yes if lack of other job alternatives, 0 otherwise	+
Family income	Dummy	1=Yes if family income, 0 otherwise	+

Appendix 5: Schematic presentation of the sampling schedule

Appendix 6: Schematic presentation of the sampling schedule

DIVISIONS	WARDS	VILLAGES
MVUHA	MVUHA	TULO
		DALA(KILENGEZI)
	SEREMBALA	KIGANILA
		MAGOGONI
MATOMBO	TAWA	TAWA
		KITONGWA
	KISENU	MTAMBA
		KIBANGIRI
MIKESE	MKAMBARANI	MTEGO WA SIMBA
		MKAMBARANI
	MIKESE	MIKESE
		LUBUNGO