# Land Tenure Systems and Service Delivery in Sembabule District

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**Abstract:** The study assessed the relationship between land tenure systems and service delivery in Sembabule District. Quantitative research with non-experimental, co-relational, and cross-sectional and survey design was adopted. The target population was 160 respondents, which composed of the government officials, farmers and the business community. A sample size of 113 respondents were selected using simple random and purposive sampling techniques to collect primary data using the research questionnaire. Study findings showed that there is a strong positive relationship between land tenure systems in place and the level of agricultural development as this was evidenced by a correlation coefficient(r) of 0.758 that was statistically significant since the p value (0.000) < 0.01, results also revealed a moderate positive relationship between land tenure systems in place and the level of commercial development as indicated by a correlation coefficient(r) of 0.553 that was statistically significant since the p value (0.000) < 0.01, results also revealed a moderate positive relationship between land tenure systems in place and the level of commercial development as indicated by a correlation coefficient(r) of 0.553 that was statistically significant since the p value (0.000) < 0.01, and a strong positive relationship between land tenure systems in place and the level of infrastructural development as shown by a correlation coefficient(r) of 0.769 that is statistically significant since the p value (0.000) < 0.01. The study concludes that land tenure influences the level of agricultural output, as well as customary land ownership increases land access to most farmers and that land tenure security influences the nature of crops grown for the time period. The study recommends that governments should put up legal reforms that eliminate discrimination; create or extend individual freehold and leasehold, group title, and land restitution; and upgrading customary land rights through community trusts

Keywords— Land; Tenure; Systems; Service; Delivery;

# SECTION ONE

# Background of the study

Before the coming into force of the 1995 Constitution of Uganda, customary land holding was not recognized as a legal tenure. Only three land tenure systems existed. These were; leasehold, mailo and freehold. Customary tenants were regarded as tenants at sufferance and could be evicted any time at whim of the state. In 1975, the Land Reform Decree (Decree No. 3 of 1975) was passed and with it came many radical changes; all land in Uganda was declared public and vested in Uganda Land Commission. No person would hold an interest in Land greater than a leasehold except the Uganda Land Commission (ULC) and accordingly mailo and freehold interests were converted into leases for a period of 99 years with effect from 1st June 1975. Consent from ULC was required before one would transfer his leasehold. Customary tenants became tenants at sufferance i.e., although they may have come onto land and occupied it lawfully, by this law; their continued stay thereon became unlawful. It became unlawful for one to acquire fresh customary tenure without permission from what is termed in the law as the 'prescribed authority'. A customary tenant was restricted in transferring his customary interest- could not transfer the interest without notice to the prescribed authority. The promulgation of constitution brought with it very significant changes. The radical title to land was vested in the citizens of Uganda, the Land Reform Decree was abolished and the systems of land tenure that were in existence before independence re-instated. These were stated as customary tenure, Mailo tenure, freehold tenure and leasehold tenure.

Land-use models can broadly be understood as tools that help us in understanding and analyzing the sometimes-complex linkages and feedbacks between different drivers of land-use change.

However, there are a number of definitions of land-use models. For example, Heistermann *et al.*, (2006) defined land-use model as 'a tool to compute the change of area allocated to at least one specific land-use type.' (Verburg P. H., 2004) define a land-use model as a 'tool to support the analysis of the causes and consequences of land use dynamics'.

Heistermann et al., (2006) reviews land-use models at continental to global scales and categorizes them into a) geographic land-use models, including empirical-statistical and rule- or process-based models b) economic land-use models and c) integrated models. Geographic models are those that allocate area or commodity demand on suitable locations with suitability based on local characteristics. Economic models use supply and demand of land-intensive commodities as a base for allocation of land (albeit at large geographical scales), while integrated models combine these two approaches with an economic analysis of world markets and policies to quantify demand and supply and allocation of land use based on geographic analysis.

According to Cambridge English dictionary, service delivery refers to the act of providing a service to customers: Service delivery: refers to a relationship between policy makers, service providers, and consumers of those services, and encompasses both services and their supporting systems. In public administration, we make a distinction between service delivery and service provision. Service

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provision generally refers to the principal actor (mainly a government department) offering services either directly or indirectly. However, in this our study, we conceptualize service delivery as the actual policy implementation/ or delivery, and the agencies doing so.

According to Olima & Obala, (1998) defined land tenure as an instrument that facilitates access to land which has an effect on development that arises out of perception of security of the intended investments on land by occupants. Further (Lall.,S. Vs Freire M,. Yuen.B. Rajack. R. & Helluin J.J, 2009) defines land tenure as a social relationship comprised of rules (legal and customary) set up by societies that regulate how people relate to land. And for this study, Land tenure is conceptualized as the conditions and institutional arrangements under which land is held, used and transferred. As an outcome of historical and social forces, it varies between societies.

In Uganda, the way land is used, managed and transferred has far reaching implications on Economic development. More than 80% of the population are employed by Agricultural sector, 69% are into Subsistence farming and the sector contributes 24% of the GDP and 40% of the export earnings. Nevertheless, the Government also acknowledges the slow growth of agricultural productivity over the last five years, with a decline in per capita food production also due to a population increase (Ministry of Agriculture, 2018)

According to the Auditor General's report (2017), it was observed that Sembabule District does not have title to the land where its offices are located and the healthy centers and schools. This implies that the land is exposed to encroachers and disputes. This further explains how private infrastructure development can be limited since there is no guaranteed security and protection. From an infrastructure perspective, unsatisfactory tenure relations can be a serious impediment to investment in roads, housing and other services, and to poor people gaining equitable access to them. This has significant financial and social costs: exploitation and abuse by landlords, especially of female-headed households; crime in no-go areas; and disease. On the other hand, provision of infrastructure can lead to dispossession of those with weak rights.

### Problem statement

The service sector is an important component of any country's economy. It makes direct and significant contributions to the GDP iob creation and further provides crucial inputs for the rest of the economy thus having significant impact on investment climate which is an essential determinant of growth and development. Some service sectors such as health, education, water and electricity are also directly relevant in achieving social development. However, extension of these facilities in most parts of the country is still a challenge as this is costly and involves many compensation technicalities. Bamugemerire (2019) justifies this as she said "the issues of compensation remain a highly contentious matter in Uganda especially in cases where government acquires private land for establishment of public facility or infrastructure. Further, according to the Auditor General's report (2017), it was observed that Sembabule District does not have title to the land where its offices are located and the healthy centers and schools. This implies that the land is exposed to encroachers and disputes. This significantly impacts service delivery as development projects are delayed and, in some situations, denied. It was however not clear of the rightful cause and since most compensation involve from the land tenure systems, and it was for this reason the researcher investigated the relationship between Land tenure systems and service delivery in Sembabule District.

### General objective of the study

The main objective of the study was to investigate the relationship between land tenure systems and service delivery in Sembabule District.

### **Specific objectives**

- 1. To assess the relationship between land tenure systems and agricultural development in Sembabule District.
- 2. To examine the relationship between land tenure systems and commercial activities in Sembabule District.
- 3. To find out the relationship between land tenure systems and infrastructure development in Sembabule District.

### SECTION TWO

### METHODOLOGY

### Research design

This study undertook quantitative research with non-experimental, co-relational, and cross-sectional and survey design. Co-relative research is one that is interested in testing whether two or more variables are co-related whereas Survey re-search is that involving a relatively large number of respondents or informants. More so, cross-sectional design involves getting responses from informants at once. The study used a cross-sectional trend in order to reduce time and cost(s) involved.

### **Study Population**

The researcher carried out a study on "the relationship between Land Tenure systems and Service delivery in Sembabule District". The target population was 160 respondents. This composed of the government officials, farmers and the business community.

### Sample size and sapling procedure

A sample size of 113 respondents were assessed in fulfillment of attaining the research objectives of the study based on Morgan and Krejcie table as given by Amin, (2005). The researcher also employed a combination of sampling techniques. Simple random sampling technique was used to give equal opportunity to eligible respondents to avoid biased findings. Likewise, the researcher adopted purposive sampling technique that helped in selecting respondents perceived to have vast information regarding the study.

### **Data Collection Methods and Instruments**

The researcher used research questionnaires that were administered to respondents in a cross-sectional manner. The respondents filled the questionnaires with the presence of the researcher. This intended to build a better report and atmosphere for the respondents to answer questions.

### **Sources of Data Collection**

The researcher collected primary data by using questionnaires so as to get first hand raw data that have never been acquired by any one for the same purpose. Further, questionnaires were used because they collect responses with minimum errors and have high level of confidentiality. In addition, the researcher used already existing literature to relate with the findings that came from the field.

### Validity of Research Instruments

According to Golafshani (2003), validity determines whether the research items truly measure what they are intended to measure or how factual the research results are. This study ensured validity of research findings prior to the administration of the research instruments. Content validity ratio was employed to determine the content validity index using the formula below and a CVI of 0.7 and above was considered satisfactory.

CVI

Relevant Question Items in the Questionnaire

_	
_	Total Number of Question Items in the Questionnaire
	Table 1: Showing the validity of the questionnaire

	Total No. of Items	No. of items judged relevant	CVI
Agricultural development	28	25	0.89
Commercial development	19	16	0.84
Infrastructure development	22	17	0.77
Average			0.83

### Source: Primary data (2021)

The end product gives the content validity of the research instrument. According to Amin, (2005), if CVI is more than 0.7 then the instrument is considered valid and since the instrument had a CVI of 0.83, then the researcher considered the questionnaire satisfactory.

### 3.6.2 Reliability of Research Instruments

According to Golafshani (2003), reliability is the extent to which results of a study are consistent over time and there is an accurate representation of the total population under study. The reliability of the research instruments was ascertained through pre-testing to cross check the consistency and accuracy of the questions and answers obtained. A Cronbach alpha test was particularly carried out to establish the reliability of the questionnaire from where R sqd

(Alpha) value of 0.82 that is above 0.7 was accepted as recommended by Amin, (2005).

Table 2: Reliability results of the instruments

0.82	69
Alpha	of items
Cronbach	Number

Source: Primary data (2021)

### **Data Analysis and Presentation**

After data collection, it was cleaned, sorted and entered in SPSS. All the respondents' opinions and views obtained from the field were matched and coded using numerals. A combination of both descriptive statistics and inferential statistics were used in the study. Descriptive statistics such as mean and standard deviation were used to describe the data and further presented in form of contingency tables. Measures of association such as correlation, regression and ANOVA were used to examine the relationship between the independent and dependent variables.

### SECTION THREE

### DATA ANALYSIS AND DISCUSSION OF FINDINGS

### Respondent bio data

This section represents respondent's bio data regarding the respondent's gender, level of education, age, marital status, relationship with household head and where the household head was born as given in table 5 below.

		Frequency	Percentage
Gender	Male	73	70.2
	Female	31	29.8
Age	<25	13	12.5
	25-40	52	50.0
	41-55	26	25.0
	>55	13	12.5
Education	Primary	13	12.5
level	Secondary	13	12.5
	Tertially	13	12.5
	degree and	65	62.5
	postgraduate		
Marital	Married	82	78.8
status	widow/widower	8	7.7
	Divorced	1	1.0
	Single	13	12.5
Relation	I am the	54	51.9
with	household		
household	head		
head	spouse to the	25	24.0
	household		
	head		

### Table 3.1: Showing the demographic statistics

	son/daughter	13	12.5
	to the	10	12.0
	household		
	head		
	neau		
	non relative	12	11.5
Where	in this village	39	37.5
was the	in another	26	25.0
household	village within		
head	the district		
born?	another district	39	37.5
	Total	104	100.0

Source: Primary data (2021)

From the table 5 above, the researcher investigated the gender ratio that participated in the study and the study findings revealed that majority 70.2% were male as compared to 29.8% female. The male dominance in the study is attributed to its concentration on the land tenure as this information is majorly obtained by male gender than it is with the females in the African set up.

In addition, the researcher investigated the age composition in the study and the study findings revealed that majority were aged between 25-40 years as given by 50%, followed by those of 41-55 years represented by 25%, and lastly those below 25 years and above 55 years as each is given by 12,5%. The majority being between 25-40 years is attributed to the fact that it's the age that is most productive to human nature as it's in this time that most men are employed, as well as doing private businesses.

The researcher further investigated the level of education of the respondents and results indicated that majority 62.5% obtained a university degree, followed by those of primary, secondary and tertially institutions as each is represented by 12.5% in table above. The majority being educated is attributed to the fact that the case study involved much the educated in order to have a dipper understanding of how land tenure system operates in the district.

Furthermore, the researcher investigated the marital status of respondents and study findings revealed that majority were the married as given by 78.8%, followed by the singles (12.5%), then the widowed (7.7%) and lastly the divorced as represented by 1%.

In order to ascertain the validity of the responses from the respondents, the researcher investigated the relationship between the respondent and the household head as the study concentrated on someone that understood the land tenure systems influence on the development and the study findings revealed that majority 51.9% were household heads, 24% being spouses to the household heads, then followed by 12.5% son and daughters to the household head and lastly, the 11.5% for respondents that were not related to the household head but lived within the household and were above 18 years of age.

Regarding land tenure system in the area, he asked them of whether the household heads were born and the study findings revealed that majority, 37.5% had been born in the area and also from another district, were as 25% were born in another village but within the district. This temped the researcher to further investigate whether they lived in the area in the year 2020 and study findings revealed a 100% agreement as shown in the table 6 below implying that the respondents clearly understood what was going on in their area in respect to the land tenure systems and their influence on development.

## Empirical findings in relation to study objectives

Land tenure system and agricultural development

The researcher assessed the land tenure influence on the agricultural development through looking at the animal production and crop production sections differently and after assessed the relationship between the land tenure and agricultural development.

## Animal production section

The researcher first investigated the land access and ownership of the household under study and the results are as given in table 7 below.

### Table 3: Showing the land access and ownership

	Response	Frequency	Percent
Own agricultural land	Yes	104	100.0
Number of	1	65	62.5
owned	2	39	37.5
Acreage of	< one acre	11	10.6
	1-4 acres	36	34.6
	5-10 acres	15	14.4
	> 10 acres	42	40.4
	Total	104	100.0

Source: Primary data (2021)

On understanding whether land tenure system influences the agricultural developments, the researcher first assessed whether the respondents owned land and also engaged in agricultural production and the study findings revealed 100% agreement.

The researcher further assessed the number of parcels owned and accessed by the respondents, and the study findings revealed that majority, 62.5% had one parcel, and the rest 37.5% had two parcels. This prompted the researcher to know the acreage of the land possessed and the results are as the table 7 above.

From the table 7 above, results indicated that majority of the people have on average over 10 acres of land as given by 40.6%, followed by 34.6% for those of 1-4 acres, then 14.4% for those between 5-10 acres, and lastly those of less than one acre as given by 10.6%. with majority having above 10 acres, this implies that land is available to undertake agricultural developments in the area.

Having ascertained the land availability, the researcher run a multiple response analysis on the agricultural activities undertaken by respondents.

### Table 4: showing agricultural activities in the area

Agricultural activity Frequencies				
		Responses		Percent
		Ν	Percent	Cases
agricultural activity undertaken	land used for crop farming	104	66.7%	100.0%
	land used for animal farming	52	33.3%	50.0%
Total		156	100.0%	150.0%
a. Dichotomy group tabulated at value 1.				

Source: Primary data (2021)

Study findings revealed that all respondents undertook crop production as given by 100.0% of cases, whereas 50% respondents carried on animal farming. Of those that did animal farming, the researcher carried out a multiple response analysis to know the animals reared by the respondents and the study results as in the table 9 below.

\$livestock Frequencies					
		Respo	onses	Percent of	
		N	Percent	Cases	
livestock owned	Cattle	39	33.9%	62.9%	
	Sheep	13	11.3%	21.0%	
	Turkey	6	5.2%	9.7%	
	Goats	41	35.7%	66.1%	
	Pigs	16	13.9%	25.8%	
Total 115 100.0% 185.5%					
a. Dichotomy group tabulated at value 1.					

Source: Primary data (2021)

Study findings revealed that majority 35.7% reared goats, followed by 33.9% for those of cattle, then 13.9% for those of pigs, 11.3% for sheep and lastly the 5.2% for those that reared turkeys.

### Table 6: Showing ownership of the grazing parcel

	Frequency	Percent
Own	52	80.0
Rent	13	20.0
Total	65	100.0

#### Source: Primary data (2021)

The researcher further assessed the ownership of the grazing parcels for those that undertook animal farming and the study findings revealed that 80% respondents owned land whereas 20% were using rented land.

Having ascertained the land ownership, the researcher investigated the documentation of the grazing parcel and the study findings are as in the table 11 below.

### Table 7: showing grazing parcel tenure system

Responses Percent				
				of
		N	Percent	Cases
grazing parcel documentation	customary land ownership of grazing parcel	30	30.6%	46.2%
	freehold certificate	15	15.3%	23.1%
	Leasehold	14	14.3%	21.5%
	purchasing agreement	26	26.5%	40.0%
	rental land agreement	13	13.3%	20.0%
Total		98	100.0%	150.8%
a. Dichotomy group tabulated at value 1.				

### Source: Primary data (2021)

From the table 11 above, the researcher run a multiple response analysis to investigate the land documentation obtained by respondents on the grazing parcels and the study results revealed that majority of the respondents were using customary land ownership as given by 30.6% responses, followed by 26.5% for purchasing agreements, then 15.3% for freehold certificate, 14.3% for leasehold certificate, and lastly 13.3% for those that had rental agreements.

### Table 8: showing the tenure security

	Frequency	Percent
No	26	40.0
Yes	39	60.0

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Total	65	100.0	Results in the table 13 above revealed that all respondents grew
Source: Primar	y data (2021)		both maize and beans as given by 100% cases and 15.2%

The researcher further investigated amongst those that owned the grazing parcel on whether they feel secure from eviction from the land and the study results indicated that 60% feel secure whereas 40% respondents were unsecure.

### **Crop production**

From those that undertook crop farming, the researcher run a multiple response analysis to ascertain the different food crops grown in the area and the results are as in the table 13 below.

## Table 9: showing crop production

Crop production Frequencies					
		Respo	onses	Percent of	
		N	Percent	Cases	
crops grown by	Maize	104	15.2%	100.0%	
respondents	sweet potatoes	52	7.6%	50.0%	
	Millet	39	5.7%	37.5%	
	Groundnuts	39	5.7%	37.5%	
	Beans	104	15.2%	100.0%	
	Irish	26	3.8%	25.0%	
	Coffee	65	9.5%	62.5%	
	Vegetables	26	3.8%	25.0%	
	Bananas	91	13.3%	87.5%	
	Cassava	78	11.4%	75.0%	
	Yams	13	1.9%	12.5%	
	Watermelon	13	1.9%	12.5%	
	fruit trees	36	5.2%	34.6%	
Total	1	686	100.0%	659.6%	
a. Dichotomy group tabulated at value 1.					

Source: Primary data (2021)

Results in the table 13 above revealed that all respondents grew both maize and beans as given by 100% cases and 15.2% responses, followed by those growing bananas as given by 13.3%, then those of cassava as given by 11.4%, and lastly yams and watermelon being the least grown crops in the area as represented by 1.9% responses.

# Table 10: showing land tenure on which crops are grown

	Frequency	Percent
Customary	65	62.5
Freehold	26	25.0
Leasehold	13	12.5
Total	104	100.0

# Source: Primary data (2021)

The researcher further investigates the land tenure systems on which the above crops are grown as these included perennial crops and study findings revealed that majority of the crops were grown on the customary land as given by 62.5%, whereas others were on freehold represented by 25% and the least grown on leasehold as given by 12.5%.

Results in this section pertain the descriptive statistics on the influence of land tenure systems on the agricultural development in Sembabule district from where respondents were introduced different statements to have their say. Their responses were computed by making an aggregate of responses given by respondents to the 5-point Likert scale (1= strongly disagree, 2 =Disagree, 3 =Not sure, 4 =Agree, 5 =strongly agree), which were categorized according to their means & standard deviations.

# Table 11: showing the land tenure system and agricultural development

	SA	Α	D N	D	S D	M ea n	St d. D
Land tenure influences the level of agricultural output	28 (26 .9)	54 (51. 6)	16 (1 5. 4)	6 (5. 8)	0 (0)	4	0. 81 3
Customary land ownership increases land access to most farmers	29 (27 .9)	61 (58. 7)	1( 1)	13 (1 2. 5)	0 (0)	4. 02	0. 89 2
Land tenure security influences the nature of crops grown for the time period	44 (42 .3)	43 (41. 3)	2 (1. 9)	14 (1 3. 5)	1 (1)	4. 11	1. 03 3

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Government authorities guide how farming is done in the area	4 (3. 8)	49 (47. 1)	13 (1 2. 5)	38 (3 6. 5)	0 (0)	3. 18	0. 98 3
Freehold gives liberty to farmers to boost their production	60 (57 .7)	17 (16. 3)	3 (2. 9)	14 (1 3. 5)	10 (9. 6)	3. 99	1. 42 4
Mailo land favors agricultural production in terms of long-term agriculture investment	2 (1. 9)	39 (37. 5)	9 (8. 7)	54 (5 1. 9)	0 (0)	2. 89	0. 98 5
Land tenure determines the size of land that is used for agricultural production	27 (26 )	58 (55. 8)	3 (2. 9)	3 (2. 9)	13 (1 2. 5)	3. 8	1. 22 6
Land tenure systems influence soil preservation of land	1 (1)	70 (67. 3)	18 (1 7. 3)	15 (1 4. 4)	0 (0)	3. 55	0. 74 9
Land tenure systems determine land use and fertilizer application	37 (35 .6)	45 (43. 3)	3 (2. 9)	16 (1 5. 4)	3 (2. 9)	3. 93	1. 12 6
Land tenure improves the land rights which further determines the agricultural output	15 (14 .4)	67 (64. 4)	3 (2. 9)	17 (1 6. 3)	2 (1. 9)	3. 73	0. 96 8

Source: Primary data (2021)

Results in table 15 above revealed that Land tenure influences the level of agricultural output as this was in agreement with 78.5% (26.9%+51.6%) responses compared to only 5.8% in disagreement and 15.4% not certain. This implies that land tenure influences agricultural output and this is further supported by a high mean of 4 and a low standard deviation of 0.813.

In addition, the researcher investigated whether customary land ownership increases land access to most farmers and the study findings revealed a big agreement of 86.6% with only 1% uncertain and 12.5% contrary. This implies that customary land is much easier accessible to most individual as it involves little restrictions hence much output from farmers as further evidenced by a higher mean of 4.02 and low standard deviation of 0.892.

On whether land tenure security influences the nature of crops grown for the time period, study findings revealed that a much agreement of 83.6% with only 1.9% uncertain and 14.5% disagreement. This implies that not every crop is grown in each tenure as most perennials are not favorable on tenure systems like leasehold as these involve much time for output and this is further explained by a high mean of 4.11 and a standard deviation of 1.0333.

Furthermore, the researcher investigated whether government authorities guide how farming is done in the area from where the

study findings revealed that majority 50.9% were in agreement, with 12.5% uncertain and 36.5% in disagreement. However much there are many people in agreement, a mean of 3.18 implies that people don't agree that government does agricultural intervention as it should and this is further supported by a low standard deviation of 0.983.

The researcher also investigated whether freehold gives liberty to farmers to boost their production and the study findings revealed that majority were in agreement with the statement, with 2.9% uncertain and 23.1% contrary. This implies that freehold tenure by its nature help farmers do much farming and hence much output. This is further explained by a high mean of 3.99 and the standard deviation of 1.424.

On whether mailo land favors agricultural production in terms of longterm agriculture investment, results revealed a strong disagreement as this was evidenced by 51.9% responses, with 39.4% in agreement and 8.7% uncertain. This implies that mailo land doesn't favor long-term agricultural investments hence limited production and this is supported by a mean of 2.89 and 0.985 standard deviation.

Study findings further revealed that land tenure system determines the size of land that is used for agricultural production as this was supported by 81.8% agreement, with only 2.9% uncertain and 15.4% contrary. This implies that tenure systems that are not much restricted allow much farmer access to land that others as evidenced by a mean of 3.8 and 1.226 standard deviation.

Results in the table above revealed that land tenure systems influence soil preservation as this was in agreement with 68.3% responses and only 14.4% contrary. This is further explained by a mean of 3.55 and 0.749 standard deviation.

Lastly, study findings revealed that land tenure improves the land rights that further determines the agricultural output as this was supported by a 78.8% agreement with only 18.2% in disagreement and 2.9% uncertain. This implies that land tenure through improving land rights increases agricultural production hence much agricultural developments as further explained by a mean of 3.73 and standard deviation of 0.968.

The researcher further run a Pearson's correlation coefficient to test the relationship between land tenure systems in place and the level of agricultural development and the study findings are as in the table 16 below.

		agricultural development	land tenure system
agricultural development	Pearson Correlation	1	0.758**
	Sig. (2- tailed)		0.000
	N	104	104
land tenure system	Pearson Correlation	0.758**	1

# Table 12: showing the relationship between agricultural development and land tenure system

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	Sig. (2- tailed)	0.000	
	N	104	104
**. Correlation i	s significant at t	the 0.01 level (2-ta	ailed).

# Source: Primary data (2021)

Results in table above shows that there is a strong positive relationship between land tenure systems in place and the level of agricultural development. This is evidenced by a correlation coefficient(r) of 0.758 that is statistically significant since the p value (0.000) < 0.01. This implies that agricultural production greatly improves with the favorable land tenure systems such as customary and freehold as this favor agricultural growth.

Regression analysis was further done to determine the strength of the relationship between land tenure system and agricultural development. And this was summarized in the model below.

Table 13: showing the model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.758ª	0.575	.571	.802		
a. Predictors: (Constant), agricultural development						

# Source: Primary data (2021)

Table 17 above indicates that the coefficient of determination (Adjusted  $R^2$ ) value is 0.571; this implies that 57.1% of the variation in Agricultural production can be explained by the tenure system in place.

### Land tenure system and commercial development

From those that undertook commercial production, the researcher run a multiple response analysis to ascertain the different commercial activities that people in the area engage in and the results are as in the table 18 below.

# Table 14: showing the commercial activities undertaken in the area

commercial activity Frequencies				
		Respo	onses	Percent of
		N	Percent	Cases
commercial activity	flour milling machine	6	3.5%	5.8%
engaged in	milk packaging and production	6	3.5%	5.8%

	retail business	39	22.9%	37.5%		
	mobile banking business	13	7.6%	12.5%		
	wholesale trade	14	8.2%	13.5%		
	craft work like carpentry	6	3.5%	5.8%		
	private enterprises like education and clinics	7	4.1%	6.7%		
	bar and restaurant business	26	15.3%	25.0%		
	property selling such as land	13	7.6%	12.5%		
	hotel management	14	8.2%	13.5%		
	commercial farming	26	15.3%	25.0%		
Total		170	100.0%	163.5%		
a. Dichotomy	a. Dichotomy group tabulated at value 1.					

# Source: Primary data (2021)

Results in the table 18 above revealed that majority of business people engage in retail trading as given by 22.9%, then followed by those engaged in both commercial farming and bar and restaurant businesses as given by 15.3%, then those of hotel management and wholesale trade coming into the third position as given by 8.2% and the least being those engaged in flour milling, milk production and craft work as each is given by 3.5%.

Table 15: showing the la	nd tenure on	which the business is
	stablished	

	Frequency	Percent
Customary	65	62.5
Freehold	13	12.5
Leasehold	26	25.0
Total	104	100.0

# Source: Primary data (2021)

The researcher further assessed the land tenure system on which the businesses are set up and the study findings revealed that majority 62.5% was established on customary land, then 25%

established on the leasehold tenure and lastly 12.5% established on the freehold tenure system.

### Table 16: showing the beneficial business in the area

\$beneficial Frequencies					
		Respor	nses	Percent	
		Ν	Percent	- or Cases	
business activity is beneficial	gotten money to pay utility bills and school fees	78	26.1%	75.0%	
	provide for the family and relatives	26	8.7%	25.0%	
	got money to buy land for expansion	39	13.0%	37.5%	
	medical bills payments	78	26.1%	75.0%	
	family utilities	78	26.1%	75.0%	
Total		299	100.0%	287.5%	
a. Dichotomy group tabulated at value 1.					

Source: Primary data (2021)

Having ascertained the businesses carried out in the area and the tenure system on which they are established, the researcher run a multiple response analysis to investigate how beneficial are these business to human development and the study findings revealed that these businesses have helped people in paying utility bills, school fees, medical bills and family utilities as given by 26.1% responses, then use the money obtained in buying land for expansion purposes as given by 13% responses and lastly, they have helped in catering for family and relative needs as represented by 8.7% responses. Results in this section pertain the descriptive statistics on the

Results in this section pertain the descriptive statistics on the influence of land tenure systems on the commercial development in Sembabule district from where respondents were introduced different statements to have their say. Their responses were computed by making an aggregate of responses given by respondents to the 5-point Likert scale (1= strongly disagree, 2 =Disagree, 3 =Not sure, 4 =Agree, 5 =strongly agree), which were categorized according to their means & standard deviations.

# Table 17: showing influence of land tenure systems on the commercial development

	SA	А	DN	D	SD	mean	Std. D
Land tenure influences the nature of business done	67 (64.4)	21 (20.2)	1 (1)	13 (12.5)	2 (1.9)	4.33	1.11
Freehold land tenure system encourages long-term investment	29 (27.9)	57 (54.8)	4 (3.8)	12 (11.5)	2 (1.9)	3.95	0.979
Leasehold tenure encourages temporary investment/ enterprise	40 (38.5)	57 (54.8)	0(0)	6 (5.8)	1 (1)	4.24	0.806
Family co-operation/ wrangles in customary ownership influences the level of transactions and commercial activity progress	19 (18.3)	54 (51.9)	11 (10.6)	16 (15.4)	4 (3.8)	3.65	1.068
Long-term investments are majorly encouraged by Mailo and freehold land tenure systems	30 (28.8)	43 (41.3)	3 (2.9)	15 (14.4)	13 (12.5)	3.6	1.369
Land rights and ownership influence credit accessibility that is a big factor in business	52 (50)	30 (28.8)	7 (6.7)	13 (12.5)	2 (1.9)	4.13	1.112
Tenure security determines the amount of credit accessed and hence investment	25 (24)	64 (61.5)	3 (2.9)	10 (9.6)	2 (1.9)	3.96	0.913
Communal land ownership hinders business development due to lack of organized control	41 (39.4)	36 (34.6)	0 (0)	14 (13.6)	13 (12.5)	3.75	1.419
Customary land tenure increases the level of subsistence farming	31 (29.8)	61 (58.7)	0 (0)	12 (11.5)	0 (0)	4.07	0.873
Freehold encourages investment and increased production of both agriculture and non-agricultural products	21 (20.2)	47 (45.2)	3 (2.9)	32 (30.8)	1 (1)	3.53	1.157

# Source: Primary data (2021)

Results in table 21 above revealed that land tenure influences the nature of business done as this was in agreement with 84.6% responses compared to only 14.4% in disagreement and 1% uncertain. This implies that land tenure has a great impact on the businesses that are done in particular area as this is further supported by a high mean of 4.33 and 1.11 standard deviation. In addition, the researcher investigated whether freehold land tenure system encourages long-term investment and the study findings revealed a much agreement with the statement of 82.7%, 13.4% disagreement and only 3.8% not sure. This implies that freehold tenure favors growth as the owner has the mandate to set up any business hence improved commercial development. And this is further supported by a mean of 3.95 and 0.979 standard deviation. On whether leasehold tenure encourages temporary investment, the study findings were in agreement as this was in agreement by 93.3% with only 6.7% contrary. This implies that majority of the leasehold businesses are temporary and this hinders commercial growth. With respect to whether family co-operation/ wrangles in customary ownership influences the level of transactions and commercial activity progress, study findings revealed that majority 70.2% were in agreement, 19.2% contrary and 10% uncertain. This implies that when there is cooperation amongst family members in respect to land ownership, then business grows hence improved commercial development. And this is supported by a mean of 3.65 and 1.068 standard deviation.

The researcher further investigated whether land rights and ownership influence credit accessibility that is a big factor in business and the study findings revealed that majority 78.8% were in agreement, with 14.4% contrary and 6.7% uncertain. This implies that when one has proper documentation and full authority over land, he/she can easily access credit that in turn lead to business growth. Furthermore, study findings revealed that tenure security determines the amount of credit accessed as this was supported by 85.5% responses, with 11.5% in disagreement and 2.9% not sure. This was further supported by a mean of 3.96 and 0.913 standard deviation. Results also revealed that communal land ownership hinders business development due to lack of organized control as this was supported by 74% responses with 26% contrary. This implies that there is always limited business development in communal land ownerships as evidenced by a mean of 3.75 and 1.419 standard deviation.

Lastly, the study findings revealed that freehold tenure encourages investment and increased production of both agriculture and non-agricultural products as this was supported by 65.4% responses with 31.8% disagreement and 2.9% not sure. This is further explained by a mean of 3.53 and 1.157 standard deviation.

The researcher further run a Pearson's correlation coefficient to test the relationship between land tenure systems in place and the level of commercial development and the study findings are as in the table 22 below.

# Table 18: relationship between land tenure systems and commercial development

		land tenure system	commercial development			
land tenure system	Pearson Correlation	1	.553**			
	Sig. (2- tailed)		.000			
	N	104	104			
commercial development	Pearson Correlation	.553**	1			
	Sig. (2- tailed)	.000				
	N	104	104			
**. Correlation is significant at the 0.01 level (2-tailed).						

Source: Primary data (2021)

Results in table above shows that there is a moderate positive relationship between land tenure systems in place and the level of commercial development. This is evidenced by a correlation coefficient(r) of 0.553 that is statistically significant since the p value (0.000) < 0.01. This implies that commercial development greatly improves with the favorable land tenure systems.

Regression analysis was further done to determine the strength of the relationship between land tenure systems in place and the level of commercial development. And this was summarized in the model below.

# Table 19: model summary

Model	R	R	Adjusted	Std. Error		
		Square	R Square	of the		
		-		Estimate		
1	.553ª	.306	.299	1.025		
a. Predictors: (Constant), commercial development						

# Source: Primary data (2021)

The table above indicates that the coefficient of determination (Adjusted R<sup>2</sup>) value is 0.299; this implies that 29.9% of the variation in commercial development can be explained by the tenure system in place.

2.2.3 Land tenure system and infrastructure development

Results in this section pertain the descriptive statistics on the influence of land tenure systems on the infrastructural development in Sembabule district from where respondents were introduced different statements to have their say. Their responses were computed by making an aggregate of responses given by respondents to the 5-point Likert scale (1= strongly disagree, 2 =Disagree, 3 =Not sure, 4 =Agree, 5 =strongly agree), which were categorized according to their means & standard deviations.

# Table 20: showing influence of land tenure systems on the infrastructural development

	SA	A	DN	D	SD	mean	Std. D
Land tenure systems influence the nature of infrastructure development	51 (49)	53 (51)	0 (0)	0 (0)	0 (0)	4.5	0.502
Compensation challenges with different land tenure systems influence the quality and nature of infrastructure	57 (54.8)	24 (23.1)	1 (1)	11 (10.6)	11 (10.6)	4.01	1.397
Limited land tenure documentation mainly with customary ownership delays public infrastructure development	53 (51)	37 (35.6)	3 (2.9)	0 (0)	11 (10.6)	4.1	1.216
Mailo land favors road and other infrastructure development as negotiations are between few parties	24 (23.1)	31 (29.8)	26 (25)	23 (22.1)	0 (0)	3.54	1.079
Leasehold influences the development of low standard infrastructure since government and people don't fully take control of the existing land	0 (0)	40 (38.5)	38 (36.5)	26 (25)	0 (0)	3.13	0.784
Freehold influences construction of quality infrastructure since ownership is guaranteed	26 (25)	52 (50)	13 (12.5)	13 (12.5)	0 (0)	3.88	0.932
Customary land ownership in developed towns delays infrastructure development since there are land wrangles and high compensation challenges involved	41 (39.4)	51 (49)	0 (0)	12 (11.5)	0 (0)	4.16	0.915
Existence of sustainable businesses on land influence the infrastructure development	12 (11.5)	51 (49)	27 (26)	4 (3.8)	10 (9.6)	3.49	1.07
Land security influences the nature and quality of infrastructure development	51 (49)	4 (3.8)	13 (12.5)	25 (24)	11 (10.6)	3.57	1.538
Poor health facilities in the place are attributed to the nature of land tenure in the area	26 (25)	13 (12.5)	0 (0)	39 (37.5)	26 (25)	2.75	1.569

# Source: Primary data (2022)

Study findings in table 24 above revealed that land tenure systems influence the nature of infrastructure development as this was supported by 100% responses with non in disagreement. This implies that people agree that infrastructural development is largely dependent on the tenure system in place and the more favorable it is, the much better infrastructure is built. This is further supported by a high mean of 4.5 and 0.502 low standard deviation.

In addition, results in the table 24 above revealed that compensation challenges with different land tenure systems influence the quality and nature of infrastructure developed as heavy compensations hinder public development compared to limited compensations. This is further explained by a mean of 4.01 and 1.397 standard deviation. Study findings revealed that there is limited land tenure documentation mainly with customary ownership which in turn

delays public infrastructure development as this was supported by 86.6% responses and only 10.6% contrary. This is further explained by a mean of 4.16 and 1.216 standard deviation.

With respect to whether mailo land favors road and other infrastructure development as negotiations are between few parties, study findings revealed a slight agreement of 52.9% with 25% respondents not sure and 22.1% contrary. With a 25% response in the uncertain state implies that there is limited sensitization on mailo land negotiations and its developments in the study area. Study findings are further explained by a mean of 3.54 and 1.079 standard deviation.

On whether leasehold influences the development of low standard infrastructure since government and people don't fully take control of the existing land, study results indicated a 38.5% agreement, with

many persons (36.5%) not sure and 25% in disagreement. With a big margin in the disagreement, implies that they don't agree that leasehold encourages poor infrastructure development as this is further explained by the mean of 3.13 and 0.784 standard deviation. The study also revealed that freehold influences construction of quality infrastructure since ownership is guaranteed as majority 75% were in agreement with the statement, with 12.5% uncertain and 12.5% contrary. This is further explained by a mean of 3.88 and 0.932 standard deviation.

Furthermore, study findings revealed that customary land ownership in developed towns delays infrastructure development since there are land wrangles and high compensation challenges involved as this was supported by the majority 88.4%, with a mean of 4.16 and 0.915 standard deviation.

With respect to existence of sustainable businesses on land influencing infrastructure development, study findings revealed that majority 60.5% were in agreement with the statement and 13.4% contrary as 26% were not sure. This is further explained by a mean of 3.49 and 1.07 standard deviation.

Lastly, study findings revealed that poor health facilities in the place are not attributed to the nature of land tenure in the area as majority 62.5% were in disagreement compared to the 37.5% in agreement. This implies that land tenure system doesn't influence public health infrastructure as the funding is majorly contributed by government based on the people's needs. This is further explained by a low mean of 2.75 with 1.569 standard deviation.

The researcher further run a Pearson's correlation coefficient to test the relationship between land tenure systems in place and the level of infrastructural development and the study findings are as in the table 25 below.

		land tenure system	infrastructure development			
land tenure system	Pearson Correlation	1	.769**			
-	Sig. (2- tailed)		.000			
	N	104	104			
infrastructure development	Pearson Correlation	.769**	1			
	Sig. (2- tailed)	.000				
	N	104	104			
**. Correlation is significant at the 0.01 level (2-tailed).						

# Table 21: showing the relationship between land tenure systems and infrastructural development

Source: Primary data (2021)

Results in table 25 above shows that there is a strong positive relationship between land tenure systems in place and the level of infrastructural development. This is evidenced by a correlation coefficient(r) of 0.769 that is statistically significant since the p value (0.000) < 0.01. This implies that infrastructural development greatly improves with the favorable land tenure systems.

Regression analysis was further done to determine the strength of the relationship between land tenure systems in place and the level of infrastructural development. And this was summarized in the model below.

Table 22: showing the Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.769ª	.591	.587	.787		
a. Predictors: (Constant), infrastructure development						

Source: Primary data (2021)

The table 26 above indicates that the coefficient of determination (Adjusted  $R^2$ ) value is 0.587; this implies that 58.7% of the variation in infrastructural development can be explained by the tenure system in place.

# **Discussion of study findings**

Land tenure system and agricultural production

The study findings revealed that majority of the crops were grown on the customary land as given by 62.5%, whereas others were on freehold represented by 25%. These findings are supported by the research by Place, (2009) who found out that investments can take place without fully individualized and titled ownership and may occur in areas dominated by customary tenure. Results revealed that Land tenure influences the level of agricultural output as this was in agreement with 78.5% responses compared to only 5.8% in disagreement and with a high mean of 4 and a low standard deviation of 0.813. however, these study findings disagree with findings by Pender et al., (2004) who asserts that land tenure arrangements have little impact on agricultural production.

The researcher investigated whether freehold land tenure system encourages long-term investment and the study findings revealed a much agreement with the statement of 82.7%, 13.4% disagreement and only 3.8% not sure. This implies that freehold tenure favors growth as the owner has the mandate to set up any business hence improved commercial development. These findings however disagree with findings of Place & Otsuka, (2002) who concluded that tenure had no impact on the productivity of crop farming.

In addition, the researcher investigated whether customary land ownership increases land access to most farmers and the study findings revealed a big agreement of 86.6% with only 1% uncertain and 12.5% contrary. This implies that customary land is much easier accessible to most individual as it involves little restrictions hence much output from farmers as further evidenced by a higher mean of 4.02 and low standard deviation of 0.892. this aligns with findings of Nkonya et al., (2008) who asserted that customary tenure was associated with higher agricultural productivity.

Study findings revealed that Land tenure systems influence soil land preservation as well determine land use and fertilizer application from where these were supported by means of 3.55 and 3.93 respectively. And these findings align with the findings of Pender et al., (2004) who asserts that use of fertilizers and pesticides was shown to be greater for households with a larger share of freehold or leasehold tenure.

Study findings revealed that land tenure improves the land rights that further determines the agricultural output as this was supported by a 78.8% agreement with only 18.2% in disagreement. This disagrees with the findings from studies of Hunt (2005); Bruce & Migot-Adholla, (1994); and Haugerud, (1989) who asserts that land titling does not consistently lead to increased investment.

Results in table above shows that there is a strong positive relationship between land tenure systems in place and the level of agricultural development. This is evidenced by a correlation coefficient(r) of 0.758 that is statistically significant since the p value (0.000) < 0.01. This implies that agricultural production greatly improves with the favorable land tenure systems such as customary and freehold as this favor agricultural growth. This is further supported by Atwood, (1990) who asserts that tenure security is needed to "increase efficient land use and agricultural production by easing land transfers, providing collateral for agricultural loans, and increasing incentives to adopt new technology, on farm investment, and soil conservation practices". However, these disagree with Pender et al., (2004) who asserts that land tenure arrangements have little impact on agricultural production. Place & Otsuka, (2002) also comes in asserting that tenure have no impact on the productivity of crop farming.

### Land tenure system and commercial production

Study findings on land rights and ownership influencing credit accessibility that is a big factor in business revealed that majority 78.8% were in agreement, with 14.4% contrary and 6.7% uncertain.

And these study findings align with results of Pender et al., (2004) who asserts that different tenure systems provide enough tenure security but as the commercialization of agriculture increases as well as demand for formal titles increases to access formal credit to boost business growth.

Results on whether family co-operation/ wrangles in customary ownership influence the level of transactions and commercial activity progress revealed that majority 70.2% were in agreement, 19.2% contrary and 10% uncertain. This implies that when there is cooperation amongst family members in respect to land ownership, then business grows hence improved commercial development. And this is supported by a mean of 3.65 and 1.068 standard deviation. However, these findings disagree with Lane (1990) who asserts that communal systems have rules that ensure against environmental exploitation, and that government acquisition of communal land for private commercial farming has led to land degradation.

Results also revealed that communal land ownership hinders business development due to lack of organized control as this was supported by 74% responses with 26% contrary. This implied that there is always limited business development in communal land ownerships as evidenced by a mean of 3.75 and 1.419 standard deviation. However, these study findings disagreed with Place, (2009) who asserts that investments can take place without fully individualized and titled ownership and that may occur in areas dominated by customary tenure.

The researcher further investigated whether land rights and ownership influence credit accessibility that is a big factor in business and the study findings revealed that majority 78.8% were in agreement, with 14.4% contrary and 6.7% uncertain. This implies that when one has proper documentation and full authority over land, he/she can easily access credit that in turn lead to business growth. This aligns with findings of Deininger and Squire (1998) who asserts that collateral-based explanation according to which highly unequal distribution of assets excludes only credit constrained individuals from making profitable indivisible investments. At the same time, Kasirye finds that financial service providers tend to move away from securitized loans as landed households are unwilling to use land as collateral to access credit (Kasirye, 2007). Indeed, some financial institutions are trying to expand access to finance, for instance by using the leasing of equipment or machinery (World Bank, 2009).

Furthermore, study findings revealed that tenure security determines the amount of credit accessed as this was supported by 85.5% responses, with 11.5% in disagreement and 2.9% not sure. This was further supported by a mean of 3.96 and 0.913 standard deviation. These align with Pender et al., (2004) who asserts that different tenure systems provide enough tenure security but as the commercialization of agriculture increases then, there is increased demand for formal titles to access formal credit. However, these disagree with Petracco and Pender, (2009) who found out that there is no significant difference between all freehold households and all customary households and access to any credit using UBOS data from 2005/2006 (classifying household by mailo, customary, freehold and leasehold status).

Study findings revealed that long-term investments are majorly encouraged by Mailo and freehold land tenure systems as this was supported by 70.1% in agreement, with 2.9% uncertain and 26.9% in disagreement. However, these findings disagree with Deininger & Ali, (2008) who asserted that full land ownership had a quantitatively large investment effect compared to occupancy on mailo land. Lastly, study findings revealed that freehold tenure encourages investment and increased production of both agriculture and non-agricultural products as this was supported by 65.4% responses with 31.8% disagreement and 2.9% not sure. This is further explained by a mean of 3.53 and 1.157 standard deviation. This further aligns with Pender et al., (2004) who asserts that type of tenure has been linked to the selection of crop types, which can have an impact on productivity. According to Pender et al., (2004), legumes are planted more on rented land as they can yield sufficient profit in a short term to pay the rent. In addition, Kyomugisha (2008) found out that crop rotation was less frequent on mailo than freehold, maybe due to insecurity about future access to land.

Land tenure system and infrastructure development.

Study findings in table above revealed that land tenure systems influence the nature of infrastructure development as this was supported by 100% responses with non in disagreement. This implies that people agree that infrastructural development is largely dependent on the tenure system in place and the more favorable it is, the much better infrastructure is built. This is further supported by a high mean of 4.5 and 0.502 low standard deviation. The study findings align with those of Dowall and Clarke, (1996) who asserts that poor tenure, cadastral and registration systems are one of the factors hindering efficient growth of cities in developing countries. This is further affirmed by the study by Fekade (2000) who highlighted unreformed tenure relations as one of the casual factors for efficient provisions of affordable developable land in most cities of Sub-Saharan Africa.

In addition, results in the table above revealed that compensation challenges with different land tenure systems influence the quality and nature of infrastructure developed as heavy compensations hinder public development compared to limited compensations. The study findings agree with Herbertson K., (2012) who asserts that Xayaburi developer didn't comply with laws requiring it to fully compensate and relocate those with both formal and customary land rights. And that this caused a big expense on the cost to investors in ignoring local land rights resulted in financial harm ranging from huge increases in operating expenses to outright abandonment of the project (Munden, 2012).

Study findings revealed that there is limited land tenure documentation mainly with customary ownership which in turn delays public infrastructure development as this was supported by 86.6% responses and only 10.6% contrary. This is further explained by a mean of 4.16 and 1.216 standard deviation. This aligns with findings of International Finance Corporation Performance Standards, (2012) who revealed that it's important to respect and strengthen local land rights through effective due diligence, assessments, and community consultations reflected in widely followed standards and guidelines, such as the VGGT to have a better infrastructure in place that's both beneficial to the community and government.

Furthermore, study findings revealed that customary land ownership in developed towns delays infrastructure development since there are land wrangles and high compensation challenges involved as this was supported by the majority 88.4%, with a mean of 4.16 and 0.915 standard deviation. However, these disagree with findings of Bashaasha et al., (2006) who conducted a study in Adjumani district which revealed that the amount of land owned was the most important determinant of wellbeing. Depletion of assets such as land has been associated with chronic poverty (Hickey, 2005), and the lack of access to land has been shown to significantly affect both the intensity of land management and rural poverty (Pender et al., 2004).

# SECTION FOUR

### CONCLUSIONS AND RECOMMENDATIONS

### Summary of the study findings

### Land tenure system and agricultural development

Results in table above revealed that Land tenure influences the level of agricultural output as this was in agreement with 78.5% (26.9%+51.6%) responses compared to only 5.8% in disagreement and 15.4% not certain and this was further supported by a high mean of 4 and a low standard deviation of 0.813.

In addition, the researcher investigated whether customary land ownership increases land access to most farmers from where the study findings revealed a big agreement of 86.6% with only 1% uncertain and 12.5% contrary. This implies that customary land is much easier accessible to most individual as it involves little restrictions hence much output from farmers as further evidenced by a higher mean of 4.02 and low standard deviation of 0.892.

Study findings further showed that there is a strong positive relationship between land tenure systems in place and the level of agricultural development as this was evidenced by a correlation coefficient(r) of 0.758 that was statistically significant since the p value (0.000) < 0.01. In addition, results revealed a coefficient of determination (Adjusted R<sup>2</sup>) value of 0.571 implying that 57.1% of the variation in Agricultural production can be explained by the tenure system in place.

## Land tenure systems and commercial development

Study findings on land tenure system and commercial production revealed that majority 62.5% of the businesses were established on customary land, then 25% established on the leasehold tenure and lastly 12.5% established on the freehold tenure system.

In addition, study findings revealed that land tenure influences the nature of business done as this was in agreement with 84.6% responses compared to only 14.4% in disagreement and 1% uncertain and was further supported by a high mean of 4.33 and 1.11 standard deviation. On whether leasehold tenure encourages temporary investment, the study findings were in agreement as this was in agreement by 93.3% with only 6.7% contrary.

Furthermore, results in table revealed a moderate positive relationship between land tenure systems in place and the level of commercial development as this was evidenced by a correlation coefficient(r) of 0.553 that was statistically significant since the p value (0.000) < 0.01. This implies that commercial development greatly improves with the favorable land tenure systems. In addition, the coefficient of determination (Adjusted R<sup>2</sup>) value of 0.299 implied that 29.9% of the variation in commercial development can be explained by the tenure system in place.

# Land tenure system and infrastructure development

Study findings revealed that land tenure systems influence the nature of infrastructure development as this was supported by 100% responses with non in disagreement. This implies that people agree that infrastructural development is largely dependent on the tenure system in place and the more favorable it is, the much better infrastructure is built. This was further supported by a high mean of 4.5 and 0.502 low standard deviation.

In addition, results revealed that compensation challenges with different land tenure systems influence the quality and nature of infrastructure developed as heavy compensations hinder public development compared to limited compensations as this was explained by a mean of 4.01 and 1.397 standard deviation.

Study findings further revealed a strong positive relationship between land tenure systems in place and the level of infrastructural development as this was evidenced by a correlation coefficient(r) of 0.769 that is statistically significant since the p value (0.000) < 0.01. This implies that infrastructural development greatly improves with the favorable land tenure systems. With the coefficient of determination (Adjusted R<sup>2</sup>) value of 0.587; this implied that 58.7% of the variation in infrastructural development can be explained by the tenure system in place.

Conclusions of the study

## Land tenure system and agricultural development

Based on the study findings, the researcher concludes that land tenure influences the level of agricultural output, as well as customary land ownership increases land access to most farmers and that land tenure security influences the nature of crops grown for the time. This implies that customary land is much easier accessible to most individual as it involves little restrictions hence much output from farmers. In addition, that freehold gives liberty to farmers to boost their production. However, Mailo land does not favor agricultural production in terms of long-term agriculture investment.

### Land tenure systems and commercial development

Based on the study findings, the researcher concluded that land tenure influences the nature of business done and that leasehold tenure encourages temporary investment. Also land rights and ownership influence credit accessibility hence boost business growth. Additionally, customary land tenure increases the level of subsistence farming by farmers. However, study results also revealed that leasehold tenure encourages temporary investment/ enterprise as well as family co-operation/ wrangles in customary ownership influence the level of transactions and commercial activity progress.

### Land tenure system and infrastructure development

Based on the study findings, the researcher concludes that land tenure systems influence the nature of infrastructure development and that compensation challenges with different land tenure systems influence the quality and nature of infrastructure that is developed in the area. In addition, there is limited land tenure documentation mainly with customary ownership that in turn delays public infrastructure development in the area. However, study findings disagree that mailo land favors road and other infrastructure development as negotiations are between few parties as well as leasehold doesn't necessary influence the development of low standard infrastructure.

Recommendations of the study

### Land tenure system and agricultural development

Based on the study findings, the researcher recommends that governments should put up legal reforms that eliminate discrimination; create or extend individual freehold and leasehold, group title, and land restitution; and upgrading customary land rights through community trusts and common property associations in order to boost agricultural growth. These land reforms and settlement programs should push for a more equitable land and property rights distribution.

## Land tenure systems and commercial development

Based on the study findings, the researcher concludes that there is need to reconcile legality provided by the government with the legitimacy provided by local institutions for the administration of land tenure. And also, the government must still play an important role by providing the framework necessary to regulate land tenure arrangements, and by promoting secure access to land and more secure transactions in order to boost commercial production. The government should also involve integrating subdivisions in Sembabule district in order to increase provision of essential services that will uplift and provide conducive standards of living for the people.

### Land tenure system and infrastructure development

The study recommends that there should be education and engagement of both government and local communities in cases of infrastructure provisions as early as possible in order to understand all tenure claims and proposed development on the specified land, including a due diligence process that accordingly investigates possible plans for proposed land by government or other stakeholders as this would reduce the land wrangles and further fasten infrastructural developments in the area.

In relation to compensation challenges, the researcher recommends that due diligence analysis in a comprehensive social and environmental impact assessment that identifies the potential impacts on land rights, livelihoods, human rights, food security, and the environment, that also describes whether and how negative impacts can be mitigated should be done. This assessment should include particular attention to land and resource rights of women, youth, minorities, pastoralists, and other vulnerable groups such that the infrastructural developments may be of value to all the natives.

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