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EFFECTS OF GENDER AND LAND USE RIGHTS ON CANE PRODUCTION IN TONGAREN SUB-COUNTY, BUNGOMA COUNTY, KENYA

MARUTI PALANG'A MOSES[1], AMOS NGIRA[2] & PROTAS FWAMBA KHAEMBA[3]

[1]Mount Kenya University, School of Social Sciences (Palangamoses710@email.com)

[2]Pwani University, school of Environmental Studies (a.ngira@pu.ac.ke.)

[3]Kenyatta University, school of Social Sciences (fwmba8@email.com.)

Corresponding Author;

Protas F. Khaemba

0ECID.0RG/0000-0002-4811-026)

ABSTRACT

Sugarcane is one of the main economic crops grown in Kenya, particularly in western Kenya.Low and decline incane production has led to the sugar industry go through a recession in the last decade. Many farmers are uprooting cane in favour of other commercial crops.Kenya is supposed to be self-sufficient in sugar production due to the favorable physical conditions supporting cane productivity. However, it has become a net importer of sugar in the recent years. This paper looks at the impact of farmers' socio-economic factors affecting sugarcane production in Tongaren Sub-county, Kenya. The paperexamines effects of gender and land use rights on cane production in Tongaren Sub-county, Bungoma County, Kenya. The target population was 260 registered sugarcane farmers. A simple random sampling was used in the selection of 100 respondents. Piloting was carried out in Bumula Sub-county, Bungoma County, to test the validity and reliability of the research tool. Content validity was determined by research experts to ensure that the questionnaire is relevant to the research.The Cronbach's alpha coefficient of determination was 0.87.The data was analyzed using SPSS version 23.0 and presented in the form of tables and graphs. The results of the study found that the gender of farmers had a significant effect on sugar cane production ($\beta = 0.170$, $p < 0.05$) while land use rights has a significant effect on sugar cane yield with a $\beta = 0.231$ and $p < 0.05$. The study concluded that the gender of farmers and land use rights significantly impact on sugar cane production. This paper recommends that more women should be empowered to own land as they are the major contributors to the production of cane production as opposite to the male counterparts

Keywords: Farmers, Gender, land use rights, production, sugarcane, Tongaren Sub-county

1.0 INTRODUCTION

Sugar is one of the greatest powerful plants in the world because of the role it plays in the daily lives of most people (Balick & Cox, 2020). Sugarcane accounts for about 75% of the world's sugar demand, with the remaining 25% coming from sweet cabbages (Onwema and Sinha, 2003). Due to the high demand for sugar, there is a need to increase its production. The average sugarcane yield in the world is estimated at 70 tons per hectare, Peru has the highest yields - 133 tons per hectare, Guatemala - 104 tons / ha, and Colombia - 101 tons / ha among others (Priyadarshan & Jain, 2022). The main indicators of sugarcane production include good

sugarcane prices, good weather conditions, increased sugarcane planting area, increased sugarcane production and investment in non-fertilizer use (Michelson et al, 2023).

The support for natural production and expansion of cane is a top priority for most of the African countries (Wada et al, 2017). However, the significant growth in diabetes is adversely affecting global cane output anduse (Kane, 2017). However, the sustainability of the industry has been helped by heavy rainfall and rainfall accumulation in wetter areas due to climate change (Knox et al., 2010).

Many sub-Saharan African countries (SSAs) produce sugar, but only five of them account for half of overall output (FAO, 2015); For instance, South Africa (23%), Sudan (9%), Kenya (7%), Swaziland (7%) and Mauritius (7%). Between 2000 and 2013, cane production in sub-Saharan Africa was twice that of the total sugar-produced 1961 and 1999 (Kalinda and Chisanga, 2014).

In terms of production, Sub-Saharan Africa (SAA) has very low productivity compared to other regions because adverse climate, insufficient input and poor mechanization (Nyambo et al., 2022). These factors play important. For example, in South Africa, sugarcane production is more than 1 t / ha / month (Nyambo et al., 2022) compared to other parts of the world. Sugarcane is a perennial crop of the family. It grows in warm and humid conditions but requires plenty of water to grow (Close & Breakwell, 2018).

In Kenya, agriculture is the spine of the nation's economy, accounting for 75% of the country's industrial base and 57% of its exports (Mitullah et al., 2017). It account for more than 50 percent of the agricultural sector's manpower; especially young farmers (Som et al., 2018). The sugar industry is the third largest investor in agricultural sector (GDP) after tea and coffee (Mati, & Thomas, 2019). The sugar industry is a major investor in agriculture, directly and indirectly providing at least 25 percent of Kenya’s million people. The share of agriculture in the gross national product is 15%. It is an important source of livelihood for employers and families (Shirai, Y., & Rambo, A., 2017). Sugar covers an area of 123,622 hectares, of which 111.19 hectares are in the hands of minority farmers and the remaining 12,433 hectares belong to the community (Owiti, 2019). The sugar industry provides both direct and indirect use employment to over half a million people in Kenya (Kenya Industry Bulletin 2008, COMESA 2008). It employs 500,000 people (Simiyu, 2021).

The sugar industry saves more than $ 250 million a year in foreign exchange to Kenya, significantly contributing to taxation (Oduor, 2019). The sugar industry contributes to the development of infrastructure through road construction and maintenance, and the provision of various social services. The sector also contributes to the conservation of the environment and energy, and therefore grants donor support through grants (Kenya Human rights Commission. (2014). Due to the strength of the sugar industry, the Kenyan government continues to provide subsidized fertilizers to farmers to increase sugarcane production (Waswa et al., 2012). Within the COMESA environment, the industry will have to increase its competitiveness across the value chain and reduce production costs for it to remain significant (Obasaju et al., 2021).

Sugarcane has been cultivated in western Kenya for over 40 years (Netondo et al., 2010). Yet, production has either remained low or declining. It is the cheapest crop to grow and the largest source of income for farmers in the region, with 81.3% benefiting from sugarcane cultivation

(Owiti, 2019). The declining production of cane is a concern to both the central and countygovernments and researchers. Therefore, this papers examines the impact of gender and land use rights on cane production in Tongaren Sub-county, Bungoma County, Kenya.

2.0 MATERIALS AND METHODS

2.1 Materials

Reddy (2018) posed that sugarcane was cultivated by the elderly women of Chipowa, Zimbabwe. Most women planted sugarcane after the death of their husbands. He found out the farms were poorly mechanized. While, a study in Kwara State, Nigeria, found that 65% of the farmers were male. Of these male farmers, 70% were aged 31 and 40 years. The aim of this study is to determine whether gender equality is achieved in this sub-region (Ogunjinmi & Ogunjinmi, 2022).

The role of women in agriculture is increasing, their access to productive resources remains a top priority (Quisumbing & Pandolfelli, 2010). African culture often discriminates against women in areas where land is inherited, making it difficult to expand agricultural activities (Anyanwu and Agu, 2016). A study on the impact of sugarcane inflows on small farmer settlements in Sao Paulo, Brazil, shows that these families are experiencing economic recession, with many reducing cane acrage (Jones, 2020). The study used descriptive design.

Clainos and Ledwin (2011) examined the economic factors affecting the production of small sugarcane farmers in Zimbabwe to identify the economic challenges faced by farmers. The study found lack of equipment, low sugar mill prices, high transportation costs, limited training and an inability to increase sugarcane productivity as main factors affecting cane production.

A study by Ramulu (2014) found that sugarcane production in India has a significant positive impact on cane pricing and yields. The study had adopted a balanced research model in the research process. Ali & Khan (2012) in their paper on sugar policy analysis in Pakistan found that sugarcane production was promoted by policies that encouraged sales of sugar rather than import substitutes. For this reason, it was necessary to produce sugar in the most efficient way in order to compete with other players in the world.

A study on factors influencing cane production, found that seed varieties, land use rights, gender, climatic conditions and technology were the main causes of crop cane variability (Molotoks et al., 2021). Their study concluded that the combination of farmers' characteristics in terms of gender, land ownership and investments are causes of crop changes. Therefore, accessibility to these factors determines the success of cane productivity.

Zulu (2017) observed that the input cost of sugarcane cultivation largely depended on the service life of agricultural machinery and farmers demographic characteristics that lead to unequal levels of input and output of sugarcane production systems. The research is based on descriptive design and production function analysis. Cherubin (2021) suggested that sugarcane production can be increased through proper land use

According to a study by Upton (2016) on the economics of tropical farming systems observed that land rights have significant influence on cane production. While, Lowes (2018), in his

research on sugar production in Zimbabwe, concluded that the farmers' gender and age affected cane production on many of the Zimbabwean farms.

Wada and others (2017) found that inadequate land and land use rights were major obstacles to sugarcane production in Nigeria. The study recommends land confiscation and expropriation issues are sorted out as they had negative impact on sugarcane production. According to O'Sullivan, M. (2017) study on sex and poverty in South Africa, found that women compared to men, have fewer opportunities to acquire and control property including land and financial services).

A study by Tarimu and Takamura (2018) in Tanzania found that sugar production was far less than the country's annual demand. Study found that if the barriers to agricultural production are removed, the country could become a sugar exporter. The study identified factors as land ownership and improper agricultural practices as militating against cane production in Tanzania. Mazwi & Muchetu, (2015) discovered that training restrictions especially women and lack of access to inputs affected cane farming in Zimbabew. Research adopted a descriptive design. Eddy (2018) survey of Chipwa Sugar Factoryin Zimbabwe found that 73% of land is rented out and lack of land ownership rights has a negative impact on investment and sugarcane production.

MO and others (2016) study on land ownership and productivity in corn production in Swaziland, discovered that land ownership affects corn productivity. Land ownership in developing countries can lead to poverty reduction, rural development and global food security (Pawlak & Kołodziejczakm, 2020). The report recommended issuance of title deeds to land owners to encourage open up the land for investment and move beyond subsistence agriculture. Dendi (2013) study of factors affecting sugarcane production by farmers in the Mayoni found that sugarcane production in Mumias decreased from 137 tonnes / hectare in 1973 to 18 tonnes / hectare in 2010. Many people are focusing on leasing land andthis affects cane production.

Netondo et al. (2010) study on the impact of cane planting on plant crop diversity in Mumias, western Kenya, found that 68% of the land was planted with sugarcane and the rest with subsistence agriculture. The study used random samples, and concluded that the reasons for the decline in sugarcane planting area were high input costs and land being in the hands of the elderly farmers. According to Anangwe (2014), in the study of socio-economic factors influencing the use of fertilizers by sugarcane growers in the Mumias region of Kenya, the decline in sugarcane production was due to improper use of fertilizers and lack of land ownership rights.

Many reviewed studies were conducted in different contexts and geographical location; therefore, the results of these studies cannot be generalized to the current study locale. This study attempts to narrow down to impact of gender and land use rights on sugarcane production in Tongaren Sub-county, Bungoma County, Kenya.

2.2 Methodology

The paper adopted a descriptive research design in order to be able to clarify current issues in sugarcane farming dynamics in Bungoma County, Kenya. This design is considered suitable for this study because it allows researchers to interpret the data without manipulating the study

variables. The study was carried out in Tongaren Sub County, Bungoma County, Kenya. The sub-county is among the 9 sub-counties in the County. The sub-county has largely been dominated by maize farming. However, cane farming is a new entrant in the sub-county but farmers are already uprooting the crop just after one cane planting cycle. According to the 2019 census, the study locale has 858,389 people, with an area is 2,069 km2.

The economic system of the sub-county is managed by agriculture, with a focus on the sugar and maize industry. The area receives heavy rainfall throughout the year, and as a huge agricultural potential.

According to Bungoma North Sugar Factory Report (2023), there are 260 registered sugar farmers in Tongaren Sub-County, Bungoma County, Kenya. The study used Yemeni (1967) formula to obtain aq sample size of 100 farmers. The study used a random sampling technique and farmers list supplied by field officers to obtain the names of farmers to be interrogated. A questionnaire is a good way of gathering information. The study used mixed methods of data collection, which included questionnaire, interviews, Focus group discussions and field observation sheet. A pilot study was carried out in Webuye West Sub-county to confirm the validity. The coefficient of reliability ronbach's alpha determination was found to be 0.87. According to Kothari (2004), at least 10% of the population should participate in this study. This was performed to identify errors in the data collection tools, allowing adjustments to be made to make the data collection more reliable.

The collected data was stored accurately and cleaned sequentially to facilitate analysis. The study utilized descriptive statistics to analyze data and presented in frequencies and percentages. Data analysis was performed using SPSS 23.0 and cast a regression model of use ($Y = \alpha + \beta1X1 + \beta2X2+ \beta3X3+ \beta4X4 + ε$).Where; Y represents sugarcane production, α a constant, β1, β2, β3, β4 are coefficients of independent variables X1(Farmer's gender) and X2 (land use rights) and ε, an Error term. The results of the analysis were presented through tables and graphs.

A test of normalcy was performed. Evaluation on gender measurements on the histogram or probability model (p - p), was ensured for checks to see if there is a balance in or near the middle of the distribution line using Kolmogorov-Smirnov test (Lind et al.,, 2012).The explanation for the causes of inflation (VIF) showed a rate of return on each variable as not all variables were controlled. This distinction was a common point of judgment on tolerance less than 0.10 or VIF values greater than 10 (Lind, Marchl & Wathen, 2012)

3.0 RESULTS AND DISCUSSIONS

Fowler (2014) defines the response rate as the average number of respondents in the total number of participants. Out of a total of 100 registered farmers, 95 were available giving a return rate of 95%. This shows that the response rate is 95%. This means that the questionnaire was sufficient for analysis. Field (2013) estimated that 75% response rate is sufficient for the analysis. Fosnacht et al., 2017).

Table 2 Reliability Results

Objective	Alpha value	Number of items
Sugarcane production	0.783	4
Farmer's gender	0.811	4
Ownership of land	0.815	4

The study results showed that the cane production Cronbach's alpha reliability test was 0.783. The reliability on gender was 0.811; while Land uses rights was 0.815. The outcomes of the study suggest that all variants have an alpha test level above 0.70, so all were considered reliable and therefore suitable for data analysis.

3.1 Gender of the Respondents

The study collected population information based on gender as shown in Figure 3.1 below.

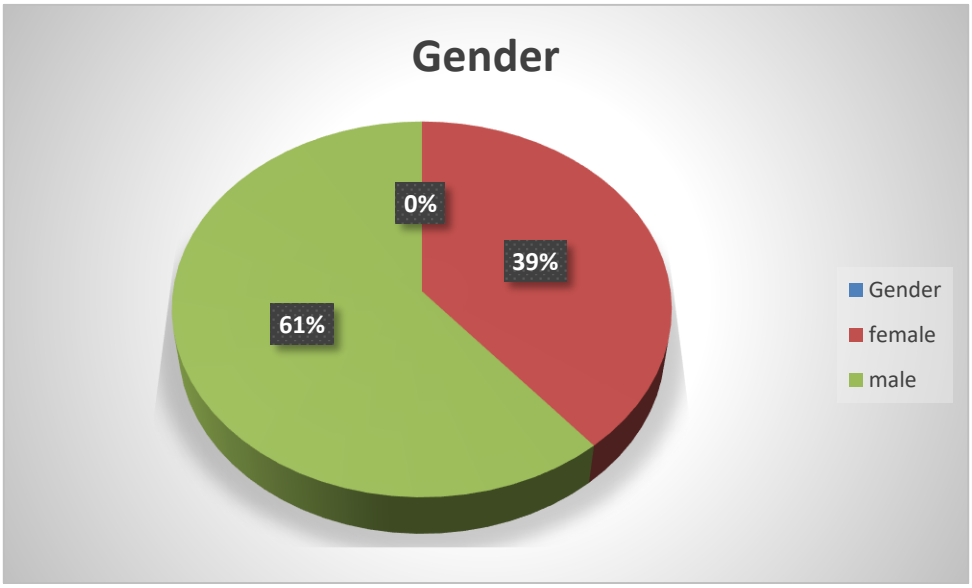

Figure 1 Gender

The results showed that, 58% and 37% of the respondents were male and female respectively. This indicates that most of the registered sugar cane growers are men. When the reacher inquired why more there were more men than female. One farmer affirmed as in the except below;

The land belongs to men not women, women are just to work on farms. Sugarcane is not a feminine crop like potatoes (FGD farmer6, Field Data, December 2023).

The Respondents were questioned to remark on whether women are the backbone of the sugarcane farming.the results are shown in table 1 below.

Table 3 Farmer's gender and Sugarcane production

Statements		SA	A	U	D	SD	Total	Mean	Std Dev
Female cane farming dominance	F	43	65	24	13	8	153	3.8	1.047
	%	28.1	42.4	15.8	8.6	5	100	76.0	
Male cane farming dominance	F	46	61	22	22	8	153	3.79	1.074
	%	30.2	39.6	14.4	14.4	5	100	75.8	
Gender equality in cane farming	F	34	95	21	3	0	153	4.04	0.342
	%	22.3	61.9	13.7	2.2	0	100	80.8	
Effects of gender on cane farming	F	64	43	26	12	8	153	3.93	0.346
	%	41.7	28.1	17.3	7.9	5	100	78.6	

The results of the survey showed that 70.0% agreed that women are the basis of sugarcane cultivation, while 17.0 % disagreed. The mean of 3.80 and SD of 1.047 confirms this. The assertion that women are the backbone of sugarcane cultivation ws affirmed by the FGDs who argued that although contracting cane was done between men and sugar firms it's the women who do most of the farm operations like planting, weeding fertilizer applications field data.

Respondents were also inquired to specify if sugar production was dominated by male-dominated households. The results of the survey showed that 69.0% agreed that male households dominated sugarcane farming as su7garcanereguires heavy labour offered by men (with a mean of 3.79 and SD of 1.047), while 19.0%) disagreed.

When gender equality in cane farming was examined, results showed that 84. % agreed that male-female equality issues households performed well in sugar production with a 4.04 and SD of 0.342. And 16 % of the respondents disagreed. When effects of gender on cane production was examined, the survey results showed that 69.0% agreed that farmers' gender affects the level of sugar production with a mean of 3.93 and SD of 0.346), while only 31 % of the respondents disagreeing. Field observation revealed that the female headed households 'maintained farms better than male headed household farms.

These findings confirm the study by Alert (2017) who found that although most farms are dominated by men, women tend to do better on farms. This means that if more women are given land use rights sugarcane production will increase. Although men dominate farms, few return royalties obtained from those farms to improve them. Field observation revealed that most of the male dominated farms were neglected as revealed in the following except:

My cane farm requires weeding but I am held up with other works. I have not done weeding. But whenget time I shall weed (FGD, male farmer N# 56). This was in response to a male

farmer whose cane farm appeared neglected and the farmer appeared to blame various responsibilities curtailing him to attend to the farm.

3.2 Ownership of Land and Sugarcane Production

The respondents were asked to state the effects of land use rights on cane farming. The study results are as shown in Table 2.The results of the survey showed that 70.0% agreed that the land use rights determine the production of sugar cane with a mean of 4.00; SD of 1.187 while 13 % of the respondents disagreeing.

The FGD data showed that communal farms had poorly maintained sugarcane. It was reported that community lands kill individual morale to work as what is obtained from the farms is shared to even those who have not been participating in the maintenance.

The survey showed further that 68.3% of the respondents agreed that the farms which are community owned affect sugarcane production (average = 3.55; SD= 0.969), with only 16.5% disagreeing). The survey showed that 68 % of the respondents agreed that land tenancy and use status affect cane production (average = 3.55; SD = 0.764), while only 16 % of respondents disagreeing. This findings confirm that study by Dlamini and Masuku (2011) found that land ownership affected the productivity of maize.

Table 4 Ownership of land and Sugarcane production

Statements		SA	A	U	D	SD	Total	Mean	Std Dev
Own land rights/ have title deed	F	43	65	24	13	8	153	4.00	1.187
	%	28.1	42.4	15.8	8.6	5	100	80.0	
Community land	F	12	92	23	19	7	153	3.55	0.764
	%	7.9	60.4	15.1	12.2	4.3	100	71.0	
Leased land/ Land tenancy	F	17	77	31	25	3	153	3.16	0.606
	%	10.8	50.4	20.1	16.5	2.2	100	63.2	

Source Field Data, December2023

4.6.2 Normality Test

In order to observe the general state of the sugar cane production, the Kolmogorov-Smirnov and Shapiro-Wilk experiments were performed to find out whether they violated the conventional distribution (Table 4).

Table 5 Normality Test

	A	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
		Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Sugarcane production	2.8	0.241	5	.200(*)	0.948	5	0.721
	3.8	0.258	4	.	0.891	4	0.388
	4	0.148	14	.200(*)	0.918	14	0.208
Gender	4.2	0.260	2	.200(*)	0.918	14	0.208
Land use rights	4.4	0.276	3	.	0.942	3	0.537

The results of the Kolmogorov-Smirnov and Shapiro-Wilk tests were 0.241 and 0.948, respectively. The values of P are 0.2000 and 0.721. Since the p-value is greater than 0.05, there was no violation of the conventional data distribution.

4.6.3 Multicollinearity Test

The results of tolerance to inflation factors (VIF) are given in Table 5. The study found that land use rights was more correlated with other independent variable at tolerance = 0.252, VIF = 3.969), while the farmers' gender had a tolerance = 0.294, VIF = 3.401.

Table 6 Multicollinearity Statistics

MODEL	Tolerance	VIF
CONSTANT		

FARMERS' GENDER	.294	3.401
LAND USE RIGHTS	.252	3.969

Dependent Variable: Sugarcane production

The Durbin Watson test was performed. Durbin-Watson data usually show a range of 0 to 4. The results are indicated in Table 7.

Table 7 Homoscedasticity Test

Durbin Watson Test

	Minimum	Maximum	Mean	Std. Dev	N
Predicted Value	2.5458	4.6636	3.8738	0.441	153
Residual	-0.89096	0.40957	0.000	0.233	153
Std. Predicted Value	-3.014	1.792	0.000	1.000	153
Std. Residual	-3.72	1.71	0.000	0.974	153

a Dependent Variable: Sugarcane production

When residues are not independent of each other, self-correlation occurs. During the study, Durbin-Watson was used to measure cane production. The results are presented in Table 7 below.

Table 7 Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson

1	.921[a]	0.891	0.812	0.0812	2.039

The results of the study show that the Durbin Watson test is 2,039, which is in the range of 1.5 to 2.5, so the data have no self-coloring.

4.7 Inferential Analysis

In this section, the paper attempts to reveal the influence of the farmers' gender and land use rights on cane production. Comparisons measured the relationship between the variables used in the study. Pearson's ratio of cane production fluctuations were 1 to 1, the ratio of the gender to the ratio of land use rights, had r> 0.7 indicating the positive value, where r is less than 0.5, r = +0.49. When the simplest R = 0 indicate NO between the relationships.

Table 8 Overall Correlation Analysis

		Farmer's gender	Ownership of land	Sugarcane production
Farmer's gender	Pearson Correlation	1		
	Sig. (2-tailed)			
Ownership of land	Pearson Correlation	-0.096	1	
	Sig. (2-tailed)	0.397		
Sugarcane production	Pearson Correlation	.507(**)	.387(**)	1

	Sig. (2-tailed)	0.000	0.000	0

**Correlation is significant at the 0.01 level (2 tailed)

The results reveal that the gender of farmers has a significant effect on sugar production (r = 0.507, p <0.05). The study results reveal further that there is a statistically significant effect of land use rights on sugarcane production (r = 0.387; p <0.05).

4.7.2 Multiple Regression Model

Multilevel analysis was used to identify changes in the relationship between sugarcane production on one hand and gender and land use rights on the other. The study results are presented in Tables 9.

Table 9 Multiple Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.871[a]	0.897	0.832	0.0812

a. Predictors (Farmer's gender, Ownership of land)

This is because the simple example is set to 0.871 which represents the system level. 89.7% of cane production (adjusted model R^2 0.832 = 0.891) is the difference between the research model and the model identified as farmers' characteristics and cane production (R squared = 0.897, total error = 0.832). This means that 89.7% of the cane crop is attributed to the farmers' characteristics of gender and land ownership/ land use rights, while 10.9% is attributed to other factors.

4.7.3 Assessing Fit of Multiple Regression Model

Regression analysis is used to determine persistence of independence variables on dependence variable (Table 10).

Table 10 ANOVA Model

ANOVA					
Model		Sum of Squares	df	Mean Square	F	Sig.

1	Regression	13.318	3	2.835	46.853	.000[a]
	Residual	4.252	139	0.057		
	Total	13.64	123			

A Predictors: (Constant), Farmer's gender, Ownership of land).

b Dependent Variable: Sugarcane production

The F test is very important in analysis, so the model is supposed to describe a significant change in the cane production in relation to independent variables. This means that many types of feedback are relevant, so that a change in independent variable causes a corresponding change in the dependent variable.

The deviation model analysis predicted sugar cane yield (p = 0.000a). This underscores the statistical significance of running regression models, as the model predict sugarcane production.

4.7.4 Regression Analysis

A beta test was used to determine the strength of the relationship between the variable under study, indicating the models ability to indicate the strength of the association (Table 11).

Table 11 Farmers' Gender and land ownership dynamics on Sugarcane Production

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.369	0.224		1.648	0.207
Farmer's gender	0.170	0.026	0.374	6.604	0.000
Ownership of land	0.231	0.034	0.459	9.876	0.000

a. Dependent Variable: Sugarcane production

Table 11 shows the distribution results. The gender (β=0.170, $p<0.05$) had a positive effect on sugarcane production.

Similarly, land ownership has a positive effect on sugarcane production (β= 0.213, P < 0.05). The Y (sugar yield) = 0.369 (both sides) + 0.170 (gender) + 0.231 (land ownership) +0.369.

According to the above Table, the level of sugar production for gender accounts for 37.4% of cane production, whereas land ownership by farmers is accounted for by 45.9%. The value 0.369 means marginal error on sugar production as accounted by both variables.

The level of gender equality of the farmer is 0.170, which means that each adjustment of the gender unit of the farmer will lead to a change of 0.170 changes in the production of sugar cane, while all other variables are completely reversed.

The farmer land use rights ratio is 0.231, which means that for each change in land ownership, a change in sugarcane production of 21.3% is expected. A common error is to find that the value of t differs significantly from parameter 0 by a standard distribution. Research results show that the farmers' characteristics play an important role in sugar production.

4.0 CONCLUSION

The paper concludes that women and men performed well in sugar production. Men have more productive resources than women. Similarly, growing sugarcane requires a lot of energy; this requires energetic people who are mostly youthful men. However, greater participation of women in sugarcane production may lead to an increase in sugarcane production, as they spend most of their time on farms. The study recommends women empowerment on land use rights to enable them get title deeds. They can use the title deed as collateral to get inputs to increase their farms productivity.

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