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Effects of Government Extension Serviceson Maize Production in Uasin-Gishu County

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Abstract: *Kenya has continued to experience food shortage despite various interventionist strategies put in place by the government leading to importation as a means of offsetting the deficit. It is against this backdrop that the study evaluated the influence of government extension services on maize production. The study was augured on social protection theory by United Nation Institute of Research and Social Development (UNIRSD) and adopted descriptive research design. The sample size was 396 respondents both small and large-scale farmers within UasinGishu County purposively sampled from a population of 40,000 active maize farmers registered by county agricultural office. The sample size was further distributed among the three Sub counties namely; Eldoret West, Wareng and Eldoret East based on their proportionate population of farmers. The data was collected by use of questionnaires. Pretest of the research instrument to test its reliability was done in Eldoret East Sub-County among the wheat farmers, while viability of the collection instrument was subjected to expert opinion test to check its suitability for the study. The researcher collected quantitative data by use of questionnaires. The data was analyzed by use of descriptive statistics and the relationships between the independent variables and dependent variable was established by use of regression analysis by both multi and bivariate regression statistic techniques. Statistical package for social science (SPSS) Version 24 software was used to analyze quantitative data and outcome presented inform of graphs, pie charts and tables. The study established that there was significant positive relationship between government extension services (R^2=27.5%, F= 135.390 and P-Value= 0.000)and maize production. The study recommended that the government should encourage farmers to seek the services of extension officers. Agriculture extension officers should hold field days regularly, properly publicize them and should be relevant to farmer's needs.*

Key Words: *Government interventionist strategies, Stakeholders Extension Services and Maize Production*

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I. Introduction

Maize production around the world is approximately 875,226,630 metric tons with United States of America (USA), China, and Brazil contributing 63% of the total production (FAO, 2012). This Makes maize one of the leading globally in terms of production and substantially a contributor of the world traded cereal grain, food, livestock feeds and industrial (FAO,2009).It is currently use foranimal feeds production, human consumption, alcohol and fuel production (Mueller, Gerber, Johnston, Ramankutty& Foley, 2012). The current status indicates that the developing countries contribute to the majority of 13.6% of world population under food insecure thus, underscoring importance of maize attainment of food sufficiency by these countries (FAO, 2010; Orhum, 2013). Therefore people, institutions, knowledge and environment are keyin strategies formulated by food insufficiency countries, in a bid to address sustainability on maize adequacy among other agricultural products (Food and Agricultural Organization (FAO), 2012).

Some of theinterventionist strategies currently being pursued by various countries in order to realize high production of maize include, formulation of policies that support grain production, development of marketing and logistics systems, grain reserve policy and support for development of grain processing industriesfor instant China introduced various interventions aimed at makingitself 95% self-sufficient in major cereals (Information Office of State Council, 2008). In addition incentives such as export subsidies and tax refunds and abolition of taxes and levies were embraced by China tolower export prices and enable locally produced maize to effectively compete in the world market (USDA, 2014;Huang, Wang, Zhi, 2011; Huang, Wang &Rozelle, 2013).Similarly, impressive records were registered by Chinese maize farmers as a result of adoption of science, technology, and agricultural policy reform (Huang &Rozelle, 2006). These strategies were further supported by subsidization and grants to various agricultural programs aimed at improving maize production (Gale, 2013, Gamett& Wilkes, 2014).

The increasing population in Sub-Saharan Africa, which is expected to be more than 2.4 billion by year 2050 is pushing up the demand for food particularlymaize.Prompting African countries to come up with comprehensive interventions to enhance agricultural output, leading to formulation of Comprehensive Africa Agricultural Development Program (CAADP). The program demands that each country gradually step up financial allocation to agricultural sector to spur annual growth of 6% (DeSA, 2012; World Bank, 2013; CAADP, 2013).

In Uganda, maize is a critical source of food and income to the majority of its citizen in Eastern, North and North West of the country, maize covers a total of 1.54 million hectares (MAAIF, 2010; Uganda Bureau of Statistics (UBoS), 2007). However, Limited use of improved inputs including modern seeds, fertilizers, herbicides/ fungicides and traction power are widely blamed for low growth of maize production in the country (Ministry of Finance Planning and Economic Development (MFPED), 2008; MAAIF, 2010). This led toplacement of maize production under Development Strategy and Investment Plan (DSIP) to enable it to benefit from seed multiplication and distribution, extension services, warehouse services and research interventions (UBoS, 2007).

Poor absorption ofmodern production technologies such as high yielding maize varieties and fertilizers among Kenyan maize farmers has led to production stagnating at an average of 2 tons per hectare below the possible 6 tons per hectare. A situation blamed on inadequate extension services to small-scale producers, besides poor rural infrastructure, insufficient budgetary allocations and limited private sectors role in maize subsector, as well as liberalized maize market (Republic of Kenya, 1997; 2004; 2008; Kangethe, 2004). The uncertainties surrounding the availability and quality of seeds, somehow forced some farmers to rely on seeds selected and prepared locally (Oduor, 2010).

In 2007, Kenyan government mooted a National Accelerated Agricultural Input Program (NAAIAP) to promote food security through agricultural inputs use and input market development. The program entails provision of subsidize fertilizers and maize seed to farmers, besides linking them to extension services and warehouse receipts (Sikobe, 2008; Owour, 2010). Besidesinterventions put in place by the government in Maize sub-sector, the production has remained below 40.7 million bags of (90 kg) forcing the government to importation from international market and neighboring countries namely Uganda and Tanzania, in order to meet the short fall.(Kenyan Ministry of Agriculture, Livestock, and Fisheries, 2015; Kenya Economic Survey 2018). This resulted to, widening gap between total imports and exports, tilting trade negatively in favour of imports. Thus, constraining the overall economic growth as indicated in Economic Survey of 2018 and Kenya Economic Report of 2017.

UasinGishucounty agricultural potentiality has been low due to declining soil fertility occasioned by continuous tilling of the same land coupled with overuse of fertilizers and chemicals. The increasing land fragmentation also has been adversely affecting the production by diminishing the land available for farming. The above two factors combined, comprise the most potent threat to increased food production in the County. These two factors make the county ideal for the study of government interventionist strategies to enhance food sufficiency (UasinGishu County Integrated Development Plan 2013-2018). Therefore, from the researchers' observation and experience, extension services to maize subsector have not fully optimized maize production.

II. Statement of the Problem

Countries both in Africa and outside have been implementing various interventions in a bid to increase productivity in the maize subsector, which have resulted to drastic increase in maize production as witnessed in countries such as Malawi and Zambia. Like its peers Kenya has been implementing interventions to improve maize production as a medium of food security and to ensure that the country becomes food sufficient. However, despite the effort by the government, the country has continued to face with food shortage where approximately 1.3 million people as by 2017 are faced with hunger, forcing the government to rely on imports from international markets and neighboring countries to plug off the deficit which eventually sustain negative trade of balance between export and imports .Thus, threatening its pursuit for agenda 2030 as outlined in UN SDGS of eradicating hunger and poverty by year 2030 and achieving sustainability in food sufficiency as stated in the big four agenda. This has further led to deterioration of balance of trade as revealed by Kenyan Economic Survey of 2018 and World Bank group updates as witnessed in 2017 due to increase in imports than export occasioned by high maize importation among others products. The sub-optimal maize production further indicated a failure by the country to realize its short and medium term goals as enshrined in the vision 2030 of commercializing subsistence farming in order to achieve vision's goals as envisage in economic pillar and food security through actualization of the big four agenda on food. Kenya also has been facing a decline in food security occasioned by high prices and decline food supplies in the market as outline by world food program in its recent famine early warning reports indicating a gap in country's interventionist strategies to attain food sufficiency.Therefore, the study aimed at assessing the effects of extension services on maize production in Uasin-Gishu County.

III. Theoretical Framework

Social protection theory by United Nation Research Institute and Social Development (UNRISD) prescribe a broad range ofpublic and private instruments necessary to tackle the challenges of poverty, vulnerability and social exclusion (European Union Directorate of International Cooperation and Development, 2015). It serve as yardstick in mitigating vulnerability as they occur across the human life cycle, maintain dignity, promote the rights of individuals and contribute to pro-poor and inclusive economic growth through building human capital and enabling poor people to increase their participation in economic development agenda of the country. It is a specific target of the 2030 agenda under the sustainable development goal (SDG) poverty eradication and a key strategic tool for realizing other related goals such as ending hunger achieving food security and reducing overall inequalities and promotion of sustainable agriculture among others (FAO,2016). The theory has four fundamental roles first being prevention instruments, which pre-empt adverse risk-coping strategies such as unemployment, while protective instruments relieve from shocks such as economic and social deprivation arising from among others food insecurity. The promotion roles of the theory aim at improving well-being of the people and most world economies adopt this instrument to mitigate future eventualities such as hunger through various interventional programs such as, subsidization of farm inputs to improve production of staple food such as maize. Lastly transformative instrument attempts to address inequality or sustained economic and social exclusion (Devereux &Sabates-Wheeler, 2004).This involve having a framework for action in terms of agricultural structural transformation which entail supporting enhance production and development of markets particularly increasing prioritization of support for small scale rural farmers resilience building and enhancing their economic and production capacity(FAO, 2017). Therefore, social protection is a fundamental in both poverty eradication and rural transformation. Consequently, the theory is integral in ensuring food security, agriculture, poverty eradication and rural development through stabilizing income by mitigating on seasonal stress, management of risks and insuring against shocks.

IV. Conceptual Framework

Conceptual framework is a diagrammatic presentation of a theory and is presented as a model when research variables and the relationship between them translate into a visual picture to illustrate the interconnections between the independent, intervening and dependent variables. The conceptual framework is the scheme of concepts this study will use to achieve the set objectives.The researcher conceptualizes that the dependent variable of this study wasmaize production while the independent variable was extension services.

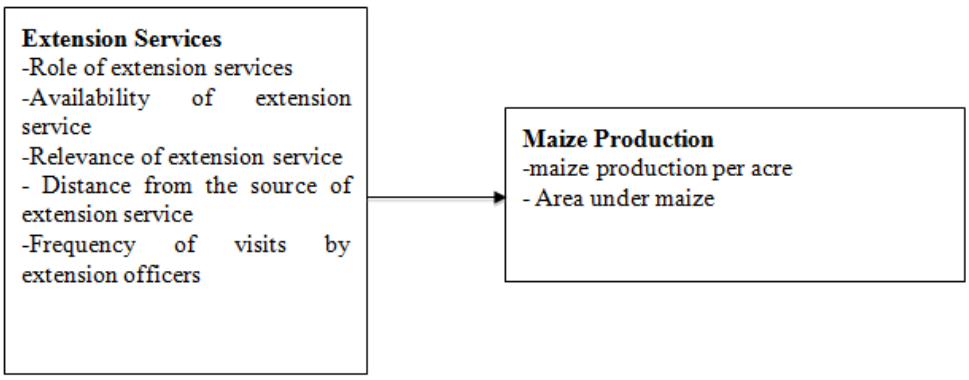

Figure 1: Conceptual Framework

Extension Services

Okwoche and Asogwe (2012) used descriptive analysis on 100 randomly sampled cassava farmers to evaluate the impact of extension services on cassava farming in Bernue State, Nigeria. The research aimed at among other objectives assessment of challenges to effectiveness of extension service. The following parameters were assessed; access to extension services, inadequate extension services, lack of capital, distance from other farmers. The researchers revealed that 52.22% of the respondents had no access to extension services and 47.78% of the respondents had access to extension services, which was blamed on poor financing of the extension services by the government. Following were cited; inadequate extension contacts (86.67) distance from other farmers (76.11%) and lack of capital (62.78%) as constraint of farmers' access to extension services.

Rwibasira, (2016) used correlation and regression statistic techniques to analyze data obtained from 97 respondents randomly selected from 24 co-operatives in assessing the effects of the Crop Intensification Program (CIP) on maize production in Nyagatare District. The study examined among others objectives, the role of extension services on maize production where the results revealed that 54% R-Squared=0.5400 of the

variation in the dependent variable, maize production is explained by the variation in the explanatory variables (extension to farm and beyond, existence of Farmer Field Schools (FFS) and farm size) incorporated in the model. The existence of FFS offer practical hand-son demonstrations in the field and training sessions on agricultural techniques since majority of the farmers 78.4% in the study area had only attended primary school level, which makes them hard to grasp technological aspects hence FFS came in handy to them.

Respondents revealed that extension agents visit them at their own volition attributing it to the absent of relationship between ministry of agriculture and the decentralized agricultural services especially at districts, sectors, cell and "Umdugudu" (village) level. It was found out that extension agents do performed other duties outside their trained areas which is as a result of extension falling under ministry of local government and not ministry of agriculture, hence leaving much extension work in the hands of the NGOs.

Msuya and Wambura (2013) used descriptive technique (percentages) to analyze data from 345 respondents sampled from a population of various actors in the maize value chain, on a study of factors influencing extension service delivery in maize production by using agricultural innovation system in Morogoro and Dodoma regions, Tanzania. The objectives included; availability of extension services, affordability of extension service, relevance of extension service and cost of extension service delivery. On availability of extension services respondents revealed as follows; 57.0% of farmers, (45%) of input suppliers, (43.7%) of financial institutions and (41.6%) of technical specialists confirmed the availability of extension services respectively. However, during the focus group discussions respondents indicated that they received extension services from their fellow farmers and the input suppliers during purchasing of inputs due to limited number of extension staff. The 30% of the interviewed described extension services as affordable particularly extension services provided by the private sector. Despite respondents giving a poor rating on the efficiency and relevancy of extension services delivered to farmers by extension, they did agree that it improve maize production.

Maize Production

Globally, maize is categorized into white and yellow varieties (Meyer, 2006). Based on 2008 production, North America has been leading in production with about 38.8% of the global output, followed by Asia (28.5%), South America (11.2%), Europe (11.1%), Africa (6.9%), Central America (3.4%) and Oceania (0.07%). Argentina, Brazil, and China account for over 60 % of the total maize output in the developing world, where China alone account for 45 % of the output (FAOSTAT, 2008). Maize demand is projected to increase by between 4% and 8% per annum amid stagnated or slow pace increase in production (Kaini, 2004 &Rosegrant et al., 2009).

Maize production in Africa stands at 70 million metric tons per year, South Africa being on leads with 11.8 Million metric tons followed by Nigeria, Egypt, and Ethiopia who registers above 6 million metric tons annually. However, maize yields (output per acre) have been falling in the last decade, despite improvements in agricultural technologies, raising a worrying situation for economic and social policy makers aiming at increasing food production and agricultural incomes (FAOSTAT, 2012). African farmers are characterized by among other things; poor soil fertility, low-yielding varieties, inadequate access to yield-enhancing inputs such as fertilizers and improved seeds. There are also heavy post-harvest losses due to poor storage and processing facilities and technologies, leading to entire maize value chain suffering from constraints that could be mitigated through better technologies, policies and marketing innovations (FAOSTAT, 2007). In Tanzania 74% of the population rely on agriculture for their livelihood and maize play a major role as food and cash crop and accounts for 31% of the total food production and 75% of the cereal consumption in the country (RATES, 2003; URT, 2011b; Seth, Bedada, Mneney ,Oduor&Machuka, 2011).

Agriculture in Kenyan contributes about 26 % of the Gross Domestic Product (GDP) and 27% of GDP indirectly through linkages with other sectors and employs more than 40% of the total population and more than 70% of Kenya's rural population. It is majorly made up of small-scale farmers who account for 75% of the agricultural outputs (FAO Country Programming Framework for Kenya 2013-2017). The sector is key in attaining vision 2030 growth rate of 10% thus, the government resolution to empower small-scale farmers to enhance their productivity (Republic of Kenya Agriculture Sector Development Strategy, 2010). However, rapid growth in population and diminishing arable land in the developing countries has been compounding the situation. Consequently, the future growth in the subsector will be a function of intense use of production enhancing technologies, such as improved farming methods to increase production per area (Gitu, 2008; World Bank, 2007).

In Kenya, maize market has been dependent on the NCPB price decisions, which are key in price formulation by other buyers. However, the private buyers have been taking advantage of NCPB limited ability to mop up all the excess maize in the market to set up their own prices, which in most cases they are unfavorable to producers (Farm Management Handbook, 2007).

UasinGishu County has a total area of 3,327 km^2 and subdivided into six sub-counties; Turbo, Soy, Moiben, Ainabkoi, Kasses and Kapsaret and a population of close to 1 million. The Arable land covers 2,995 sq km,

while the rest is covered by hills, rocks water mass and urban set-up. The County fall between 1500m – 2700m above the sea level and soils range from red brown loam to clay and has a rainfall range of between 900mm to 1200mm per annum and a peak in May to October. Agriculture is source of food and income for over 80% of the rural population, despite, the County's agricultural production full potential being sub-optimal. The county's farm size stands at between 2-10 acres with a wide range of crop and livestock and varies widely from predominantly small scale to highly, mechanized large-scale farming. Small-scale farmers owning less than 30 acres' accounts for 75% of the county total agricultural produce, though it has not been fully exploited. Most farmers rely on rain-fed agriculture and face by high costs of inputs especially fertilizers, Low levels of mechanization and high transport costs due to increase in global oil prices, poor and long marketing chains consisting of many players making them inefficient and unresponsive leading to low absorption of inputs by farmers. The county government has indicated public private as one of the area that has not been fully explored noting that its exploitation is key in improving local market infrastructure. The other challenges hindering productivity include; declining soil fertility coupled with overuse of fertilizers and chemicals resulting to low production in the County. Poor governance and corruption has contributed to inefficiencies or in some cases collapse of institutions responsible in aiding the farmers. The lack of proper storage facilities exposes farmers them to low prices due to rush to dispose their products (UasinGishu County Integrated Development Plan, 2013).

V. Research Methodology

This research problem was studied through the use descriptive research design and utilized quantitative research method. The research design enabled the researcher to cast light on the effects of the extension services on maize production through data collection.The study utilized quantitative method in data collection and analysis, where survey was used. The sampling of the respondents was done by use of purposive sampling technique.The target population was maize farmers within UasinGishu County who are about40,000 registered with the county agricultural office and distributed among the three sub counties formally national government administrative districts namely; Eldoret (17520), Wareng (11679) and Eldoret East (10801).

The proposed sample size for this study was 396 respondents (maize farmers) drawn from 40,000 maize farmers within UasinGishu County. The County was placed under three clusters Eldoret West, Wareng and Eldoret East for the purpose of sample distribution which was done base on each of their proportionate population of farmers (Hair, Celsi&Samouel 2011).

The sample size of the study was at 95% confidence level with a margin of error of 5%. Owing to the anticipated large number of farmers, the study employed the Yamanes (1967) formula for determining sample sizes in large populations. This is as shown below:

$$\mathbf{n} = \frac{N}{1 + N(e)^2} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3.1)$$

Where;
n = the sample size,
N = the population size,
e = the acceptance sampling error
= $40000/1+40000(.05)^2$
= 40000/101
= 396

The study thus reached a sample population of396 farmers both small and large-scale respondents to participate in the research in each of the three sub counties.

Table 1: Distribution and Proportionate Sampling of Farmers in UasinGishu County

	Population of farmers	**Small scale**	**Large scale**	**Small scale**	**Large scale**	**Total sample size**
Eldoret West	17520	12264	5256	121	52	173
Wareng	11679	8175	3504	81	35	116
Eldoret East	10801	7561	3240	75	32	107
TOTAL	**40000**	**28000**	**12000**	**277**	**119**	**396**

Data was collected through Survey method by use of questionnaires as a tool for collecting quantitative data. The data was collected by use of likert questionnaire, which consist of closed ended questions, since they facilitate faster coding recording and analysis.

The study generated quantitative data. Fitness of purpose was to describe, explain and seek causality between extension services on maize production in Kenya. Quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS Version 24.0) and analyzed using descriptive statistics. This was attained through frequency distributions, means, modes, percentages, and standard deviations, simple and cross

tabulations. The study also used inferential statistics to establish effect of the extension services and its effects on maize production in Kenya. Specifically, the study used Karl Pearson's coefficient of correlation and linear regression analysis to establish this relationship. For these tests, ANOVA, t-test, and F-test were used.
The linear regression analysis was formulated and performed in the following general regression equation: -
$\mathbf{Y= \beta_0+ \beta_1 X_1+\varepsilon}$
Where; Y = the dependent variable (Maize Production); X_1 = (Government Extension Services); Whileβ_0 is a constant, which denotes financial inclusion, β_1 are slope coefficients and ε is the standard error term.

Research Finding and Discussion

The sample size consisted of 396 maize farmers from UasinGishu County. To this end, a response rate of 90.66% was achieved with 359 respondents reached out of the 396 targeted. According Kothari (2009), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. The high response rate was attributed to the data collection procedure and tenacious following by the researcher. The drop and pick method gave the respondents ample time to fill and return the questionnaire.

Demographic Information

This section captures both the respondent organizations' demographics including responses by gender of the respondent, managerial position, respondent age, number of years in service and highest education level attained.

Descriptive Results

The descriptive statistics thereof are hereby presented in form of means and standard deviations.

Maize Production

The study sought the level of agreement on various aspects related to maize production. The results were as shown in Table 2

Table 2: Maize Production

	Mean	Std. Deviation
Government offered extension has increase maize production per acre	2.540	1.169
The current extension services offered by the government are motivating more people to put more land under maize	2.359	1.102

A represented in Table 2, the respondents partially agreed that the government offered extension had increased maize production per acre (2.540); the current extension services offered by the government were not motivating more farmers to put more land under maize (2.359); This therefore, gives credence to the findings byGitu (2008) which indicated that the future growth in the subsector will be a function of intense use of production enhancing technologies, such as improved farming methods to increase production per area. Urassa (2015) observed that poor access to extension services alongside other production enhancing inputs have been notable constraints that hinder improvement in maize production.

Influence of Extension Services on Maize Productionin Kenya

The study sought to determine the extent to which the respondents agreed with various statements on the effect of extension services provided by the government to maize farmers on maize production within UasinGishu County. The results were as shown in Table.

Effects of extension services on maize production in UasinGishu County

	Mean	Std. Deviation
Extension services increase maize production	2.599	1.267
Majority of the maize farmer access extension services	2.212	1.036
Majority of the farmers knows their area extension officers	2.187	1.075
Majority of farmers do seek extension services voluntarily from extension officers	2.786	1.944
The distance from the source of extension services and farmers is closer	2.167	1.041
The visits by extension agent to maize farmers are more frequent	1.852	0.979
The extension officers spend more time with farmers during their visits	2.529	1.277
The current farmer driven mode of approached use by extension officer has increase access of more farmers to extension services	2.348	1.010
The information disseminated by extension officers has improved methods of maize production.	2.454	1.058

The extension services offered currently are relevant in terms timeliness	2.4735	1.165

According to the findings, the respondents partially agreed that, the extension services increase maize production as indicated by mean of 2.599 and standard deviation of 1.267. On the other hand, respondents disagreed that majority of the farmers access extension services as indicated by mean of 2.212 and standard deviation of 1.036, as well as having limited knowledge of the extension officers in their locality as indicated by means of 2.187 and standard deviation of 1.075. While farmers seeking extension services, respondents partially agreed with a mean of 2.786 and standard deviation of 1.944, that majority of farmers do seek extension services voluntarily from extension officers. Respondents disagreed that the distance from the source of extension services and farmers was closer and supported by mean of 2.167 and standard deviation of 1.041, as well as disagreed with mean of 1.852 and standard deviation of 0.979 that, the visits by the extension agents to maize farmers were frequent. On the other hand, respondents as indicated by mean of 2.529 and standard deviation of 1.277 partially agreed that extension officers spend more time with maize farmers during their visits. However, Respondents further disagreed as disclosed by mean of 2.348 and standard deviation of 1.010 that, the current mode of farmer driven approach use by extension officer had increased access of more farmers to extension services. Lastly, respondent disagreed that the information disseminated by extension services offered currently were relevant in terms of timeliness to farmers as indicated by mean of 2.4735 and standard deviation of 1,058. Besides, extension services offered being viewed by farmers to be not relevant in terms of timeliness, a situation supported by Msuya and Wambura (2012) study, which rate extension services poorly on relevancy. The information disseminated by the extension officers is viewed to be limited in improving methods of maize production. Similarly, the study established that the current farmer driven mode of approached use by extension officers has not enhanced access of more farmers to extension services, therefore confirming a study of Okwoche and Asogwe (2012) on inadequate extension contacts between cassava farmers and extension agents in Bernue state in Nigeria.

Inferential Statistics

A univariate regression analysis was used to determine the weight of the relationship between the government input subsidy program and maize production.

Regression Analysis

The coefficient of multiple determinants denoted by R^2, is a measure of proportion of the variation of the regress and explained by the corresponding explanatory variables. The value of R^2 lies between zero and unity $0 \leq R^2 \geq 1$. A value of unity implies that 100% of the variations of Y have been explained by the explanatory variables. The study also used univariate analysis to assess the influence of extension services on maize production in Uasin-Gishu County.

According to the findings, the R-squared for the relationship between extension services and maize production in Kenya was 0.275. This implies that extension services explain27.5% of variation in maize production inUasinGishu County.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.524[a]	.275	.273	.6361412

a. Predictors: (Constant), government_extension_services

Analysis of variance was used to assess whether the model was fit for the collected data. According to the research findings, the p-value was shown to be 0.000, which is less than 0.05. This is a prove that the model used was reliable in determining how the independent variable, government extension services influence maize production in UasinGishu County, Kenya. Further, the F-calculated (135.390) value was higher than the F-critical (2.42) and this indicates that the model was fit for looking into the influence of extension services on maize production.

ANOVA for Government extension services on maize production

Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	54.789	1	54.789	135.390	.000[b]
	Residual	144.469	357	.405		
	Total	199.258	358			

a. Dependent Variable: maize_production

b. Predictors: (Constant), government_extension_services

As indicated in Table 6, the results show that holding government extension services constant, the maize production in Kenya will be 1.370. In addition, the beta coefficient for the association between government extension services and maize production in Kenya is 0.52. This implies that a unit increase in government extension services would lead to 0.520 increases in maize production. The p-value (0.000) was less than the significance level (0.05). In addition, the t-calculated (12.407) was more than the t-critical (2.42).

Coefficients for government extension services and Maize Production

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.370	.110		12.407	.000
	government_extension_ services	.520	.045	.524	11.636	.000

a. Dependent Variable: maize production

VI. Discussion

The study revealed co-operative societies, Non-Governmental Organizations (NGOs) and Faith Based Organizations (FBOs) as some of the notable providers of extension services other than the government. Despite the study indicating a positive correlation between extension services and maize production, the study had apoor rating on approaches being used to disseminate extension services, relevancy of extension services in terms of timeliness, farmers' knowledgeon their local extension agents. It is only time taken by extension agents with farmers and farmer voluntarily seeking of extension services that respondents partially agreed to have a positive impact on production.

VII. Conclusions

The study concludes that there is a positive significant relationship between extension services and maize production as shown by a p-value of 0.000. However, the study found that majority of farmers do not seek extension services voluntarily from extension officers. Extension officers have not been spending ample time with the farmers, which may have contributed to low production. The study also concludes that extension officers do not spend ample time with farmers and the information disseminated do not improve methods of maize production.

VIII. Recommendations

The study found that firm size has a positive influence on financial inclusionamong commercial banks and mobile service providers in Kenya. Due to economics of scale, the larger the firm the better the services and lower the cost of service delivery. The study therefore recommends that financial institutions should seek to increase their capital base by use of debts and selling of shares. This will help in financing the support of infrastructure related to mobile-led financial services.

With the inevitable cross boundaries between banks and mobile operator, more policies should be formulated to encourage financial sector deepening should be implemented. These should be complemented with measures to promote the growth and image of banks and mobile operators in a bid to promote the synergy existing between them. Pertaining to losses due to fraudulent access of customers' accounts through hacking, there is a need to employ disciplined, qualified and well remunerated ICT staff in the bank and at the level of mobile operator.

Suggestion for Further Research

This study was limited to maize farmers in UasinGishu County. The study therefore recommends that a similar study should be carried out in other counties as well and compares results with those of UasinGishu County. In addition, government extension services could only explain 27.5% of maize production in UasinGishu Count, Kenya. Therefore, further studies should be conducted to identify other factors affecting maize production among maize farmers in Kenya.

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