CORRELATION ANALYSIS OF COWPEA PRODUCTION IN GASSOL LOCAL GOVERMENTS AREA OF TARABA STATE NIGERIA

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ABSTRACT

This paper examined the relationship between socio economic characteristic and constraints of cowpea production in Gassol Taraba State Nigeria. Ex-post factor designed was employed for the study. Two research questions were asked and hypotheses were formulated. A sample of 148 farmers from 12 wards participated in the study using multi-stage random sampling techniques. The instruments of data collection were socio economic characteristics questionnaire (SEQ) and farmers achievements test,(FAT). The reliability of the SEQ was computed using cronbach Alpha ( ) while farmers achievement test FAT was computed using kuder- Richardson 20 (K-R_{20}). The reliability coefficient of SEQ and FAT were 0.76 and 0.84 respectively. The research questions were answered using Pearson product Moment Correlation Coefficient while research hypothesis were tested using t- test transformation statistics. Result obtained showed that there is a significance relationship between socio economic characteristics and farmers cowpea production. It is recommended that farmers should make concerted effort to develop new Cowpea Varieties', innovation and Make credit facilities available for greater output.

Key words: Cowpea, Production, socio economy, correlation,

INTRODUCTION

Cowpea (Vigna unquiculata.) is an important food grain in the tropics its also an important source of food for man, cash animal feed and soil nitrogen. The global annual production of cowpea was about 3.6metric tones of which Africa accounts for about 64%. Similarly ,it was reported that Nigeria being the largest producer of cowpea in the world accounts for 2million metric tons which represents about 50% of the total world cowpea production annually the average yield per hectare of cowpea in Nigeria is only 417 kg/ha an achievable yield of between 1500-3000 kg/ha in 2009. Nigeria Agriculture is characterized by considerable regional and crop diversity. Analysis of these sectors particularly the food subsector is fraught with serious data problems. However, the available statistics provides a great over view of development in Agriculture upon which we can make some broad generalization about its economic development and structural change. Aboki (2013).Nigerian agricultural sector is dominated by small scale farms which constitute an important valuable component of Nigeria economic. The ability of Agriculture to perform its role in development is declining thus creating wide gap between the demand for and supply of food (Alabi et al 2006). It is the desire of most country (Nigeria) inclusive to be self sufficient especially in

food production. The country has a great potential for production of different cereals and legumes which include cowpea (Mohammed et al 2014).Cowpea is an important grain legume and also an important companion in most legume cereal cropping system because of the benefits' fromits nitrogen fixing ability and the residual nitrogen originated from the decay of its leaf litter root and roots noodles (Okereke et al 2006). Cowpea is gradually attaining economic importance in Nigeria, particularly in the northern states of Nigeria, even though the bulk of the production is done at the semi arid ecological zone of northern Nigeria. The crop therefore has great potential in contributing to alleviation of malnutrition among resource poor farmers (Mohammed et al 2014). Protein shortage is considered the major problem in most developing countries than shortage of calories (energy food) these composed the problem of malnutrition and pronounces the spread of human diseases .Nigeria been one of the leading countries of the sub Saharan African is producing protein food items to meet the needs of the teeming farmers(Ya'aishe *et al* 2010) twenty three percent (23%) of the population of developing economics consumed twenty percent (20%) below the level of food intake required to sustain life among other activities . this is a problem which has persisted till date .(Aboki 2013)

Cowpea is a type of crop that is grown by any farmer. Nigeria has what it takes to produce up to four million tones therefore the constraint in Gassol is the need for government and private support and enabling environment.

Though cowpea is generally produced by small scale farmers in this locality, the use rudimental implements, land is usually on communal basis, inherited or ranted case of outright purchase is rear in which the average farmer has less than two hectares of land where family labor remains essentially the inputs used.

Although other researchers have worked on the gross margin of the cowpea farmers our concentration will be on the relationship between inputs used and output obtained.

PURPOSE OF THE STUDY

i) Determine the socio economic characteristic of the respondent

ii) Estimate the cost and return to cowpea production in the study area

iii) Determine the problem associated with cowpea production in the study area

RESEARCH HYPOTHESIS

There is no significant relationship between socio economic characteristic and constraints of Cowpea production
There is no significant relationship between men and women and Cowpea production.

THE STUDY AREA

The study was conducted in Gassol local government in Taraba State,Nigeria. It is located between latitude 8°38N and longitude10⁰46'E it has a total land area of approximately 5,548km² 2, 14259 miles (Nigeria postal service 2009). The population was estimated to be 254,086(NPC 2009) it shares a boundary between karim lamido local government area by the

north, Ardo kola local government area by the east, Bali local government area by the south , Wukari ,Ibi ,Donga local government area by the west. The local government area consist of several ethnic groups which include Wurukum, Jenjo, Fulani ,Tiv, Jukun with Hausa as a widely spoken language , farming is the major occupation of the people with Maize Groundnut, Cowpea, Yam sorghum, melon as cultivated crops.   The local government area has a tropical climate marked by rainy and dry season which starts April and ends November and the dry season starts in November and end April. The minimum temperature of 15^0c maximum of 42^0c ,The vegetation of the area is Guinea savannah characterized by tall tress with an average rain fall of 197mm (mohammadi J.A. 2016)

STUDY DESIGN

The design of this study is ex-post factor type. This is because farmers cannot be manipulated , A sample of 12 out of 52 wards in Gassol local government area of Taraba State was selected for the study from each ward 12 farmers were sampled. Thus a total of 148 farmers participated in the study comprising 74 men and 74 women. A multi –stage sampling techniques was adopted,

INSTUMENTATION

Instruments of data collection were socio economic characteristics questionnaire (SEQ) and farmers achievements test,(FAT). SEQ was a 20 –item questionnaire on a four point scale. the farmers were to tick from the level of strongly agreed (SA- 4=point), Agreed (A=3), disagree (DA=2) and strongly disagreed (SD=1point) also FAT is 40 multiple item test constructed from production information, level of input used and output obtained and constraints faced by the farmers. The instruments used were validated by three experts in the area of Educational Measurement psychology and Mathematics' Education. The instruments were trail tested on farmers in other villages' not participating in the study. The reliability of the SEQ was computed using cronbach Alpha ( ) while farmers achievement test FAT was computed using kuder- Richardson 20 (K-R_{20}). The reliability coefficient of SEQ and FAT were 0.76 and 0.84 respectively. The research questions were answered using product Moment Correlation Coefficient while research hypothesis were tested using t- test transformation statistics.

RESULT

Research hypothesis 1:
There is no significant relationship between socio economic characteristic and constraints of Cowpea production

Table 1: Pearson Product moment correlation coefficient of self-efficacy and multiple ward test and t-test transformation statistics.

Rating /score	N	r	t_{tab}	Df	t_{crit}	Remark
Socio economic characteristics	148					
Constraint to Cowpea production	148	0.93	27.34	150	1.96	Significant

From table 1, the result shows that correlation coefficient (r) is 0.93. These imply that there is a high positive correlation between socio economic characteristics of farmers and constraints to cowpea production. That is farmers with larger farms and credit facility achieved greater yield than those with less than two hectare land in cowpea production.

From Table 1, the t-transformation valve is 26.34 while the critical value is 1.96 at df = 150. This implies that the null hypothesis is rejected. That is there is significant relationship there is significant relationship between socio economic characteristic of farmers and constraints of Cowpea production in the study area is 0.05 significance level

Research hypothesis 2:   There is no significant relationship between men and women rating and to production of Cowpea the result is presented in Table 2.

The PPMC coefficient is computed as shown in table 2.

Table 2: Pearson product moment correlation coefficient (r) of men and women socio economic characteristics and farmer's achievement test and test transformation statistics

Rating	Men (N= 74) (r)	Women (N= 74) (r)
Socio economic characteristics Constraints to cowpea production	0.92	0.87
t $_{tab}$	19.92	14.97
t $_{crit}$	1.98	1. 98

From Table 2 the Pearson product moment correlation coefficient (r) of men and women socio economic characteristics were 0.92 and 0.87 respectively having high correlation. This implies that men and women with high socio economic characteristics have more profits in cowpea production while those with lower socio economic characteristics will achieve less in cowpea production. However, the men showed high positive correlation than the women farmers.

From table 2, the value of t-transform for male and female socio economics characteristics and cowpea production are 19.92 and 14.97 respectively which is higher than the critical value of 1.92 and 0.87 at the level of significant relationship between men and women socio economic characteristics and farmer achievement in cowpea production.

DISCUSSION
From Table 1 result of hypothesis shows that strong positive significance relationships exist between the Socio economic characteristics of farmers to cowpea production. These indicate that if farmers Socio economic characteristics are enhanced there achievement to cowpea production will increase. this finding is consistent with ,Mohammed (2014) who found that the Socio economic characteristics of farmers relates to their production of cowpea and with Aboki (2013) who says that strong relationship exist between farmers Socio economic characteristics and cowpea production and that Socio economic characteristics is the best predictor of increased cowpea production.

The second null hypothesis which states that there is no significant relationship between men and women farmers rating and cowpea production was rejected. The finding was in consistent with Aboki (2013) who found that cowpea production constraint, gender and anxiety have a significant correlation with farmers' achievement in cowpea production. The finding also support Aida and Wan who said that significant different exist between overall motivation scores of farmers.

From the result of this study Socio economic characteristics has been shown to increase farmers production of cowpea this findings is consistent with the position of Bandura (1994) who said that farmers Socio economic characteristics has the capacity to produce designated level of performance . The implication of this is that if farmers Socio economic characteristics are developed through cowpea production they can achieve higher yield in cowpea.

CONCLUTION

This study has shown that a Socio economic characteristic predicts farmers' achievement of increased cowpea production. In other words farmers Socio economic characteristic status predicts cowpea production. Furthermore the study shows that men and women Socio economic characteristics predict their increase of cowpea production in Gassol. A Socio economic characteristic also varies with situation and event. That is, Socio economic characteristics of farmers in Gassol may not be the same as others. Thus Socio economic characteristics needs to be boosted so that the expected desire of cowpea production may be maintained and increased.

RECOMMENDATIONS

The following recommendations are made.

It is recommended that Government and analysis formulators' in Gassol help farmers to increase output by granting loans with little or no interest, provision of modern implement, spend more time with them and send extension worker for routine check of progress made.

Farmers should adapt quickly to the innovations by availing themselves to be educated.

Cowpea production can be increased when farmers are shown success made by others in different locations.

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