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Assessment of Gender Roles in Cocoa Production Activities in Abia State, Nigeria

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Abstract
This study assessed gender roles in cocoa production activities in Abia State and specifically described the demographic characteristics of the respondents; determined gender roles in cocoa production activities and evaluated factors influencing gender roles in cocoa production activities in the study area. The multi-stage sampling procedure was employed in selecting 160 respondents (96 men and 64 women) for the study. An interview schedule was employed in data collection while percentages, mean and z-test were used for analyses. From the result, average age for men was 54years and 53years for women. All the men (100%) and 87.5% women had some level of formal education and more males (62.5%) than females (59.3%) were primarily farmers. Further results revealed that men participated more in the transportation of cocoa beans from farm to the house ($\bar{x}_m$ =3.3, $\bar{x}_f$ =3.5), sourcing for the fund for farm operations ($\bar{x}_m$ =3.0, $\bar{x}_f$ =3.3), hiring labourers and payment of wages ($\bar{x}_m$ =3.8, $\bar{x}_f$ =3.6) among others while women participated more in fermentation and checking of cocoa beans ($\bar{x}_m$ =3.5, $\bar{x}_f$ =3.6), sun-drying and removal of bad cocoa beans ($\bar{x}_m$ =3.8, $\bar{x}_f$ =3.9). Men and women agreed that unwillingness to invest in cocoa production risk ($\bar{x}_m$ =3.2, $\bar{x}_f$ =3.8), poor access to information ($\bar{x}_m$ =3.7, $\bar{x}_f$ =2.9), time constraints due to domestic and other off-farm work ($\bar{x}_m$ =3.6, $\bar{x}_f$ =3.5) highly influenced women's participation. The result showed there was no significant difference in the roles played by men and women farmers in cocoa production activities in the study area at 5% alpha level. The study therefore recommends that training and policies should be designed in a way that everybody is carried along.

Keywords: Gender roles, Cocoa production, fermentation

Introduction

Cocoa was one of the major crops on which Nigeria depended for her development during the colonial and post-colonial periods. It was an export crop, a major source of foreign exchange and played a key role in the employment of rural labour in some parts of Nigeria before the advent of petroleum (Akinyeye, 2014). The development of cocoa brought in its wake an innovation and reoriented rural livelihood that remarkably incorporated Nigerian farmers into the international economy (CBN, 2015). Cocoa production activities, according to Kehinde and Ogundeji (2022), are usually carried out majorly by rural dwellers in Nigeria particularly people in the Western and Southern regions who produce about 400,000 metric tonnes per annum. Of this volume, 98% is exported. Income from cocoa began to drop with the discovery of crude oil in commercial quantity. The boom from oil led to the neglect of agriculture and lots of cocoa farmers abandoned their farms in search of greener pastures. However, instability in the price of petroleum and the need for diversification of the economy is gradually returning attention to the agricultural sector – cocoa farming inclusive (Maduka, Odoemelam & James, 2019).

Men and women have been active participants in the cocoa business, with their roles often segregated along gender lines within farming households. They engage in such cocoa production activities as planting, transplanting, weeding, fertilizer application, mulching, shading, harvesting, pod breaking, fermenting and drying, roasting and grinding, packaging and transporting and marketing of cocoa. In almost all societies, men and women differ in their activities and their undertakings, regarding access to and control over resources in participating in agricultural activities. Generally, men are presumed to be the chief actors in agricultural production activities such as farm clearing, planting of seedlings as well as chemical application (Dalaa *et al.*, 2020; Oluyole and Lawal, 2012). Reiterating this, Akanji cited in Ogunniyi *et al.* (2012),

stated that cash crop farming activities like cocoa are the major occupation of men in African countries including Nigeria, while women are involved in early plant care and postharvest activities such as pod-breaking, fermenting and drying and off-farm activities such as buying and selling of farm produce, storage of crops and packing of farm produce (Oluyole *et al*., 2013). Mohammed and Abdulquadri, (2012), however, observed that these roles were not exclusive since women still participate in planting, harvesting, on-farm processing and marketing with almost equal tasks in weeding operations.

Gender refers to the roles, norms, behaviours, attributes and responsibilities of men and women that are created socially and culturally and considered appropriate (Newman, 2021). It influences how people act and interact and the distribution of power and resources in society (Canadian Institutes of Health Research, 2020). Understanding gender means understanding opportunities, constraints and the impacts of change as they affect both men and women differently. These gender roles are learned and change over time. It varies from culture to culture and often from one social group to another within the same culture according to class, ethnicity and race (Kalkidan, 2016). Factors such as education, technology, and economics as well as sudden crises like war and famine cause gender roles to change.

Traditionally, men and women are assigned various roles as approved by the society. These gender roles are learned, vary from place to place, cut across all fabrics of the society including agriculture and change over time. Cocoa and most cash crops are believed to be men's crops, with men carrying out most of the on-farm production activities whereas women are believed to be involved only in processing and early plant care. These assumptions influence come with gender expectations which influence how people act and what they do. Corroborating this, Akanji cited in Ogunniyi *et al.* (2012), stated that cash crop farming activities like cocoa are the major occupation of men in African countries including Nigeria, while women are involved in early plant care and postharvest activities such as pod breaking, fermenting and drying and off-farm activities such as buying and selling of farm produce, storage of crops and packing of farm produce (Oluyole *et al*., 2013).

Gender responsibilities are undergoing rapid change, typically, with rural women becoming more responsible for household food security and children's welfare (Food and Agriculture Organisation (FAO), 2011). Mohammed and Abdulquadri, (2012), however, observed that these roles were no longer exclusive since women still participate in planting, harvesting, on-farm processing and marketing with almost equal tasks in weeding operations. While several kinds of literature, as indicated in the foregoing paragraphs have reported gender roles in agricultural production, there is however a dearth of empirical evidence on the gender roles in cocoa production activities in Abia state. The study specifically:

i. described the demographic characteristics of the respondents by gender;
ii. determined their gender roles in cocoa production activities; and
iii. evaluated the factors influencing gender roles in cocoa production activities

The study was guided by the following null hypotheses;
H0$_1$: There is no significant difference in the roles played by men and women in cocoa production activities in the study area

Methodology

The study was carried out in Abia State, South East agroecological zones of Nigeria. Abia State lies between longitude 7°30'00"E and latitude 5°25'00"N of the equator and has a tropical and humid climate all year round. The rainy season ranges from March to October while the dry season occurs from November to February. The mean annual rainfall ranges from 2000mm to 2500mm with the southern areas receiving more than the northern areas. The temperature ranges between 22°C to 31°C. The state has 17 Local Government Areas (LGAs) and is divided into three agricultural zones namely, Aba, Ohafia and Umuahia.
A multi-stage sampling procedure was adopted in selecting a sample of 160 respondents. The first stage was a purposive selection of Ohafia and Umuahia Agricultural zones from the three Agricultural zones in Abia Sate. These zones were purposively selected because of the high level of cocoa production activities they undertake. In the second stage, Bende and Ikwuano Local Government Areas were purposively selected based on the number of cocoa farmers in the area. The third stage involved a random selection of two (2) Extension Blocks from each of the selected LGAs, giving a total of 4 blocks. Two (2) cells were randomly selected from each of the four (4) extension blocks to get the total number of eight (8) cells. Twenty (20) cocoa producers were randomly selected from each of the eight (8) selected cells – 12 males and 8 females - to get a total of 160 respondents. Thus, a sample size of 160 cocoa farmers was selected for the study; ninety-six (96) men and sixty-four (64) women. Data for the study were collected using a structured questionnaire. For effectiveness, some extension agents were trained on how to administer the questionnaire and they served as enumerators who helped in the distribution and retrieval of the questionnaire.

Measurement of variables

Objective i, was realized using frequencies and percentages while objectives ii and iii were realized using mean scores derived from a four-point Likert-type rating scale of strongly agree (4 points), agree (3 points), disagree (2 points) and strongly disagree (1 point). A benchmark mean of 2.5 was used in decision-making. $\bar{x}_m$ was used to represent the mean score for male while $\bar{x}_f$ was for female.
The hypothesis was tested using z-test at 5% α-level

$$Z = \frac{\bar{x} - \mu}{\sigma/\sqrt{n}}$$

$\bar{x}$ = sample mean
μ = population mean
σ = population standard deviation
n = sample size

Results and Discussion

Socio-economic characteristics of cocoa farmers in the study area

The socio-economic characteristics of the cocoa farmers were presented in Table 1. The results showed mean ages of the farmers were about 54years for males and 53 years for females, 84.4% of the female farmers were married while 82.3% of the male were married and the men were more experienced (18 years) in cocoa farming than the women (16 years). From these results, it can be deduced that cocoa farmers in Abia State were more middle-aged educated men with family responsibilities and many years of cocoa farming experience. By implication, cocoa farming is not a business that youths in the Abia State have shown much interest in. This is likely to negatively affect sourcing, accessing and use of innovations as well as the availability of labour. On educational attainment, the result revealed that the male farmers (100%) were more literate and attained higher formal education level than the females (87.5%). The reason is not far-fetched as parents in the past preferred educating their male children to female. Oluwatosin (2014) however, noted that education could enhance the adoption of cocoa production technologies and the acquisition of some of the required knowledge for adequate farm maintenance. The result also showed that more male farmers (62.5%) than females (59.3%) had farming as their primary occupation and furthermore, there were more male farmers (64.6%) registered in cooperatives than females (57.8%) and more men (62.5%) than women (59.4%) had access to credit. By implication, Membership of more men in cooperative societies could help them in the exchange of meaningful information, production of goods at minimized cost and give them an advantage of economies of scale. It is also easier for men to access credit than women because they control most family assets and have more access to information. Barrientos and Bobie, (2016) affirm that men are more recognized as farmers, integrated into training programmes, extension services and have more access to financial services while women who often work as unpaid family labour are largely excluded in these activities and therefore have to rely on their husbands.

Gender roles in cocoa production activities

Gender roles in cocoa production activities are presented in Table 2. The result revealed a grand mean of 2.89 for men and 2.94 for women, indicating that both men and women were actively involved in cocoa production activities in the study area. The result further revealed that men participated more in site selection of ($\bar{x}_m$ = 3.7, $\bar{x}_f$ =2.4), sourcing for farm input (chemicals, equipment) ($\bar{x}_m$ =2.7, $\bar{x}_f$ =3.0), spraying cocoa with chemicals against pest & diseases ($\bar{x}_m$ =2.5, $\bar{x}_f$ = 2.8), transportation of cocoa beans from farm to the house ($\bar{x}_m$ =3.3, $\bar{x}_f$ =3.5), sourcing for fund for farm operations ($\bar{x}_m$ =3.0, $\bar{x}_f$ =3.3), hiring labourers and payment of wages ($\bar{x}_m$ =3.6, $\bar{x}_f$ =3.8) and expansion of household cocoa farms ($\bar{x}_m$ =3.1, $\bar{x}_f$ =3.4). This finding corresponds with that of Dalaa *et al.* (2020) who saw the spraying of chemicals and transportation of cocoa beans as predominantly men's work. The activities where males played more active roles were often those that were energy and capital-intensive. Therefore, their control of family resources and finance as well as their physical strength could possibly account for their suitability for these roles. The women, on the other hand, were mostly involved in securing planting materials ($\bar{x}_m$ =2.8, $\bar{x}_f$ = 2.9), harvesting of ripe cocoa pods ($\bar{x}_m$ =2.1, $\bar{x}_f$ =3.0), fermentation and checking of cocoa beans ($\bar{x}_m$ =3.5, $\bar{x}_f$ =3.6), sun-drying and removal of bad cocoa beans ($\bar{x}_m$ =3.8, $\bar{x}_f$ =3.9), storage of dried cocoa beans and maintenance ($\bar{x}_m$ =2.5, $\bar{x}_f$ = 4.1), marketing of cocoa to the buyers ($\bar{x}_m$ =3.6, $\bar{x}_f$ =3.7). This finding agrees with International Cocoa Organisation (ICCO), (2017) that women participated mostly in harvesting cocoa, pruning and postharvest activities such as drying and fermenting. These activities were mostly things women could do from their homes. This, perhaps is to give them time to attend to other domestic chores as well. Men and women disagreed that any particular gender was more involved in breaking and scooping out of cocoa seeds from pods ($\bar{x}_m$ =1.5, $\bar{x}_f$ =1.6), weeding and pruning in the cocoa farm ($\bar{x}_m$ =2.0, $\bar{x}_f$ =2.1), bush clearing and land preparation ($\bar{x}_m$ =2.0, $\bar{x}_f$ =2.1). It can then be assumed that both men and women are actively involved in these activities. It can be deduced from the result that there were roles men were more involved in and there are roles women play a more active part. There were also roles that men and women were both involved in. Worthy of note is the fact that the distinction between traditional tasks for men and women is becoming less clear and women are taking on activities that were previously undertaken by men (UTZ and Solidaridad, 2009). According to Oluyole and Lawal (2012), men are generally presumed to be chief actors in agricultural production activities such as farm clearing, planting of seedlings as well as chemical application. This result however shows that such functions as bush clearing, land preparations and are no longer exclusively men's roles.

Perceived Factors influencing gender roles in cocoa production activities

Table 3 shows the factors influencing gender roles in cocoa production activities. Men have a grand mean of 3.38 and 2.79 for women. Furthermore, the result reveals that while the men agreed that traditional/cultural limitations against women ($\bar{x}_m$ =3.1, $\bar{x}_f$ =1.9), women's subordination to them ($\bar{x}_m$ =3.6, $\bar{x}_f$ =1.8) and the misconception that women do not have farming ideas ($\bar{x}_m$ =2.7, $\bar{x}_f$ = 2.3), had high influence on the role of women in cocoa production, the women, on the other hand, disagreed that these factors had high influence. They rather agreed with the men that unwillingness to invest in cocoa production risk ($\bar{x}_m$ =3.2, $\bar{x}_f$ =3.8), far distance of household to cocoa farm ($\bar{x}_m$ =3.4, $\bar{x}_f$ =3.3), poor access to information ($\bar{x}_m$ =3.7, $\bar{x}_f$

=2.9), time constraint due to domestic and other off-farm work ($\bar{x}_m$ =3.6, $\bar{x}_f$ =3.5) and domestic violence between farm women and male counterparts ($\bar{x}_m$ =3.4, $\bar{x}_f$ = 3.1) were factors that highly influenced women's role in cocoa production. Taylor (2013) suggested that domestic violence is a prevalent problem among rural and farming communities across the world, just as it is a problem in urban areas and this is often caused by lack of support resources. On the other hand, women are already venturing into male roles and according to UTZ and Solidaridad (2009), adding those tasks to the traditional ones of growing food crops, postharvest activities and household chores, strongly increases women's workload

Differences in gender roles in cocoa production

The result in Table 4 showed a comparative analysis of the difference in the roles played by men and women in cocoa production activities in the study area. The result revealed Z-tab of 1.96 and a Z-cal of 1.88. This indicates that there was no statistically significant difference in gender roles in cocoa production activities. The result implies that both men and women are actively involved in cocoa production activities and can play any role if given equal opportunities. Lending credence to this, Kumase *et al.,* (2010) found sex was insignificant in determining cocoa productivity, thus, there is a need to eradicate the thought that some crops are male crops while others are female crops. They said if given equal opportunities, women could even be more productive than men since they are very thorough. Gender biases only limit what can be achieved in cocoa production. The z-cal value of 1.88 though significant at 10% is less than the 5% alpha level set for the study. The study therefore accepted the null hypothesis which stated that there was no significant difference in the roles played by men and women farmers in cocoa production activities in the study area.

Conclusion

Men and women play active roles in cocoa production with some tasks traditionally expected of each group to perform. Men were more involved in such activities as site selection, sourcing for farm input, spraying cocoa with chemicals, transportation of cocoa beans, sourcing fund for farm operations, hiring labourers and payment of wages and expansion of household cocoa farms. While women participated more in securing planting materials, harvesting of ripe cocoa pods, fermentation and checking of cocoa beans, sun-drying and removal of bad cocoa beans, storage of dried cocoa beans and maintenance, and marketing of cocoa to the buyers. Some other activities such as weeding and pruning in the cocoa farm, bush clearing and land preparation that were the exclusive reserve of men now have women actively participating in them hence reducing the distinction. It is, therefore, necessary that men and women be given equal opportunities in resource management and decision-making. Government and stakeholders should ensure training and policies are available and favourable to all. Any policy action towards any of these activities could be directed to men and women handling such activities. Information necessary for improved performance in cocoa production should also be properly communicated. To ensure that women are physically present at meetings and actively participate in extension programmes and activities, extension services should be designed in gender-sensitive manners and efforts should consciously be made to set up opportunities that are time and location sensitive in order to accommodate the already existing daily roles and responsibilities of women.

References

Akinyeye, O.A. (2014). *Clothing Others While Naked: West Africa and Geopolitics*, Inaugural Lecture Delivered at the University of Lagos Main Auditorium on Wednesday 3rd December 2014.

Barrientos, S., & Bobie, A. O. (2016). Global Development Promoting Gender Equality in the Value Chain: Opportunities and Challenges in Ghana. Retrieved from https://ideas.repec.org/p/bwp/bwppap/062016.html

Canadian Institutes of Health Research, (2020). https://cihr-irsc.gc.ca Retrieved on 4/5/21

Central Bank of Nigeria (CBN) (2015). *Annual Reports and Statement of Accounts*, Abuja Nigeria. Retrieved from https://www.cbn.gov.ng

Dalaa, A. M.; Torvikey, D.G.; Amoah, A.; Abdul-Razak, S.; Obeng, F.; Kofituo, R. and Asare, R. (2020). *Climate Smart Cocoa: A Gender Transformative Approach*. Accra, Ghana: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). https://gender.cgiar.org>publications

Food and Agriculture Organisation (FAO) (2011). *The State of Food and Agriculture* 2011 - Women in Agriculture: Closing the Gender Gap for Development. Pub Food and Agriculture Organization of the United Nations Rome

International Cocoa Organisation (ICCO) (2017). *Intensification of cocoa in the Peruvian Amazon: Gender relations and options for deeper engagement by women.* Trent Blare World Agroforestry Centre (ICRAF); Lima, Peru ICCO International Symposium on Cocoa Research Lima Peru November 13-17, 2017

kalkidan, F.B. (2016). *The role of gender in small scale irrigation agriculture among smallholder farmers in Lume District in the Central rift valley of Ethiopia*. An M.Sc thesis submitted to Wondo Genet College of Forestry and Natural Resources, Hawassa University, Ethiopia

Kehinde, A.D. and Ogundeji, A.A. (2022). The simultaneous impact of access to credit and cooperative services on cocoa productivity in South-Western Nigeria. *Agriculture and food security* 11(11): 1-21

Kumase, W.N.; Bisseleua, H. and Klasen, S. (2010). *Opportunities and constraints in agriculture: A Gendered analysis of cocoa production in Southern Cameroon*, Discussion Papers, No. 27, Georg-August-Universität Göttingen, Courant Research

Centre - Poverty, Equity and Growth (CRC-PEG), Göttingen

Maduka, O.A., Odoemelam, L.E. and James, A.E. (2020). Assessment of information sources for postharvest and value addition technologies among cocoa farmers in Akwa Ibom State, Nigeria. *Journal of Agricultural Economics, Extension and Science* 6(1): 112 -120

Mohammed, B.T. and Abdulquadri, A.F. (2012). Comparative analysis of gender involvement in agricultural production in Nigeria. *Journal of Development and Agricultural Economics,* 4 (8): 240-244.

Newman, T. (2021). Sex and gender: What is the difference? MedicalNewToday www.medicalnewstoday.com

Ogunniyi, L.T., Ajao, O.A. and Adeleke, O.A. (2012). Gender Comparison in Production and Productivity of Cocoa Farmers in Ile Oluji Local Government Area of Ondo State, Nigeria. *Global Journal of Science Frontier Research Agriculture &Biology* 12(5) 58-66

Oluwatusin, F.M. (2014). The perception of and adaptation to climate change among cocoa farm households in Ondo State, Nigeria. *Academic Journal of Interdisciplinary Studies* 3(1): 147-156

Oluyole, K.A. and Lawal, J.O. (2012). Precision Farm Labour Supply for Effective Cocoa Production in Nigeria. *Research Journal of Applied Sciences*. 5: 191-194.

Oluyole, K.A., Usman, J.M., Oni, O.A., and Oduwole, O.O. (2013). Input use efficiency of cocoa farmers in Ondo State, Nigeria. *Journal of Finance and Economics*, 1(1):8-10.

Taylor, L. (2013). *Domestic Violence: The Problem Pervading Nigeria*. Available at www.thinkafricapress.com, 2012, retrieved September, 2013

UTZ and Solidaridad. (2009). *The role of certification and producer support in promoting gender equality in cocoa production.* Solidaridad-Certification Support Network and Oxfam Novib. Retrieved on 19/05/2022 from https://utzcertified.org/attachments/article/92/CocoaGenderUTZSolidaridad_2009.pdf

Table 1: Socioeconomic Characteristics of the Respondents

Socioeconomic Characteristics	Male (n=96) Frequency	%	Female (n=64) Frequency	%
Age				
18-30	0	0	2	3.1
31-43	8	8.3	9	14.1
44-56	50	52.1	25	39
57-69	38	39.6	27	42.2
70-82	0	0	1	1.6
Mean	54.1		53.2	
Marital status				
Single	17	17.7	10	15.6
Married	79	82.3	54	84.4
Level of Education				
No formal education	0	0	8	12.5
Primary education	13	13.5	10	15.6
Secondary	54	56.3	33	51.6
Tertiary	29	30.2	13	20.3
Occupation				
Farming	60	62.5	38	59.3
Trading	8	8.3	6	9.4
Civil servant	25	26	17	26.6
Schooling	3	3.1	3	4.7
Years of experience				
5-10	5	5.2	9	14.1
11-16	11	11.5	19	29.7
17-22	80	83.3	36	56.2
Mean	18.2		16	
Membership of cooperative				
Yes	62	64.6	37	57.8
No	34	35.4	27	42.2
Access to credit				
Yes	60	62.5	38	59.4
No	36	37.5	26	40.6

Source: Field Survey, 2021

Table 2: Distribution of respondents based on gender roles in cocoa production activities

Gender roles in cocoa production activities	Men ∑fx	SD	$\bar{x}_m$	Women ∑fx	SD	$\bar{x}_f$
Site selection is practiced by men	351	0.9596	3.7	151	1.0685	2.4
Bush clearing and land preparation are done by men	193	0.501	2.0	135	0.5612	2.1
Securing planting materials is done by women	264	0.4114	2.8	186	0.2843	2.9
Raising cocoa seedlings in a nursery by women	250	0.7161	2.6	147	0.6157	2.3
Transplanting cocoa seedlings to the field is mostly done by women	250	0.4457	2.6	151	0.4799	2.4
Sourcing for farm input (chemicals, equipment) is done by men	262	0.4892	2.7	190	0.7111	3.0
Weeding and pruning in the cocoa farm is done by women	191	0.5154	2.0	135	0.5342	2.1
Spraying cocoa with chemicals against pest & diseases is mostly done by men	267	0.4116	2.8	161	0.4431	2.5
Harvesting of ripped cocoa pods is done by women	202	0.6879	2.1	189	0.7110	3.0
Breaking and scooping out of cocoa seeds from pods is mainly done by women	145	0.6161	1.5	104	0.7113	1.6
Fermentation and checking of cocoa beans is done by women	332	0.6530	3.5	233	0.7211	3.6
Transportation of cocoa beans from farm to the house is done by men	313	0.5882	3.3	225	0.6641	3.5
Sun-drying and removal of bad cocoa beans is done by women	361	0.7939	3.8	249	1.1797	3.9
Storage of dried cocoa beans and maintenance is mostly done by women	236	1.0666	2.5	264	0.8623	4.1
Marketing of cocoa to the buyers is done by women	351	0.9596	3.7	230	1.0685	3.6
Sourcing for fund for farm operations is done by men	289	1.5710	3.0	213	1.3226	3.3
Hiring labourers and payment of wages is mostly done by men	360	1.2626	3.8	228	1.3491	3.6
Expansion of household cocoa farm is done by men	328	0.5263	3.4	198	1.0861	3.1
Total Mean			**51.8**			**53.0**
Grand mean			**2.89**			**2.94**

Source: Field Survey, 2021

Decision: $\bar{x} \geq 2.5$ highly involved, $\bar{x} \leq 2.5$ not highly involved

Table 3: Distribution of respondents based on perceived factors influencing gender roles in cocoa production activities

Factors influencing gender roles in Cocoa production activities	Men ∑fx	SD	$\bar{x}_m$	Women ∑fx	SD	$\bar{x}_f$
Traditional/cultural limitations against women	294	0.91823	3.1	123	0.28984	1.9
Far distance of households to cocoa farms.	328	0.85223	3.4	213	0.29847	3.3
Poor access to information by women	352	0.56642	3.7	185	0.46579	2.9
Misconceptions that women do not have farming ideas.	261	0.40915	2.7	147	0.95771	2.3
Unwillingness of women to invest in cocoa production risks	366	0.88341	3.8	202	0.41609	3.2
The belief that women are subordinate to male counterparts	349	1.22286	3.6	116	1.25707	1.8
Women are time constrained due to domestic and other off farm work	346	0.24351	3.6	222	0.22621	3.5
Domestic violence between farm women and male counterparts	298	0.17167	3.1	218	0.67984	3.4
Total mean			**27.0**			**22.3**
Grand mean			**3.38**			**2.79**

Source: Field Survey, 2021

Decision: $\bar{x} \geq 2.5$ high level of influence, $\bar{x} \leq 2.5$ low level of influence

Table 4: Z-test Comparative analysis of the difference in the roles played by men and women in cocoa production activities in the study area

Level of participation	Mean	Std. Deviation	Df	Z- cal	Z-tab
Men [a]	2.8936	0.7729			
Women [b]	2.9414	0.6488			
Difference a – b	-0.0478		158	1.88	1.96

Source: Field Survey, 2021