Capacity building needs on standard practices for cocoa export among farmers in Cross River state, Nigeria

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ABSTRACT

Use of traditional farming practices is the major reason for the production of low quality cocoa beans by farmers in cocoa producing countries, including Nigeria. This study therefore identified capacity building needs on standard practices for cocoa export among farmers in Cross River State, Nigeria. A three-stage sampling technique was used to select 336 registered members of Cocoa Farmers Association of Nigeria in Cross River State. Data were collected through questionnaire and analyzed with both descriptive and inferential statistics including frequency counts, percentages, means, standard deviations, and weighted discrepancy score (WDS) and Pearson Product Moment Correlation. Results reveal that mean age of the farmers was 48 years while 78.6% had one form of formal education or the other. Capacity building was perceived to be mostly needed in the areas of sorting of dried beans (0.51), packaging of dried beans (0.48), and timely pod harvesting (0.39). There was a significant relationship between cocoa farmers' farm size (r=0.137, p=0.012), income (r=0.151, p=0.006) and extension contact (r=0.121, p=0.027) and their capacity building needs on standard practices for cocoa export. The study concluded that cocoa farmers required capacity building on standard practices for cocoa export. It is therefore recommended that farmers should be trained on the identified areas of training needs in order to improve their knowledge and the quality of beans for export.

Keywords: Capacity building needs, Cocoa farmers, Standard practices, Cocoa export

INTRODUCTION

Cocoa is one of the fastest selling and most desirable agricultural commodities in both the local and international markets across the globe. Africa remains the largest cocoa producing region in the world, accounting for 72% of the global cocoa output, while production from the Americas and Asia and Oceania accounts for 18% and 10%, respectively (International Cocoa Organization, 2017). Cocoa has particularly gained popularity in Nigeria due to the benefits from its earnings and its contribution to the Gross Domestic Product as the highest foreign exchange earner among all agricultural commodities. Though cocoa only represents 2% of national exports of Nigeria, the commodity is the country's third largest export after crude oil and petroleum gases (Observatory of Economic Complexity, 2017).

Cocoa is a perennial crop that can survive for decades once planted and cocoa farmers are expected to get returns for a very long time. Cocoa has a high food value because it contains as much as 20% protein, 40% carbohydrate and 40% fat. It is also mildly stimulating because of the presence of theobromine, which is an alkaloid that is closely related to caffeine (ICCO, 2012). However, about 80% of the cocoa produced in the country is exported as cocoa beans while the other 20% is processed into powder, butter, cake and liquor before being exported Proshare (2017). This suggests that Nigeria is yet to fully capitalize on cocoa value addition initiatives as most of the beans are still sold unprocessed. This situation may not be unconnected with the fact that most of the processing factories in the country are non-functional and abandoned.

According to the National Cocoa Development Committee, 14 out of the 36 States in Nigeria produce cocoa and they are grouped into three categories based on their level of production. The groups are: high producing States (Ondo, Cross River and Osun); medium producing States (Edo, Ogun. Oyo, Ekiti, Abia, Delta and Akwa-Ibom) as well as low producing States (Kwara, Kogi, Taraba and Adamawa). However, Ondo, Cross River and Osun States are reported to contribute approximately 68% of Nigeria's annual cocoa output which reached a climax of 350,000 metric tonnes in 2014(Nigerian Investigative Reporting Project, 2015)when the Ministry of Trade and Industry also reported a revenue of US$1.3 billion from cocoa export. Cross River accounts for about 20-30 percent of the country's cocoa production (Bloomberg, 2016) and produces one of the finest cocoa quality in the country (Cross River Watch, 2015).

The two main aspects of quality usually considered in cocoa export are methods of producing quality beans and how to properly assess the bean quality (World Cocoa Foundation, 2012). According to the ICCO (2017), the quality requirements for cocoa beans can only be met by sound agronomic management, favourable soil and weather characteristics as well as good post-harvest practices which include fermentation, drying, packaging and storing (pre-sales) practices. As spelt out in the manual published at the end of the nineteenth meeting of the Consultative Board on World Cocoa Economy which took place in Moscow in 2009, cocoa of merchant quality must be: properly fermented, thoroughly dry, free from smoky beans, free from abnormal or foreign odours and free from any evidence of adulteration (ICCO, 2009). In addition, high quality cocoa must be uniform in size, reasonably free from broken beans, fragments and pieces of shell, and be virtually free from foreign matter. Therefore, cocoa farmers may likely require adequate capacity building in the usage of these practices in order to improve the quality of beans produced for export.

Capacity building is defined as a process through which individuals, groups, organizations and societies enhance their ability and meet development challenges (Catholic Relief Services, 2013). The United Nations Development Program explained that capacity building is a continuous development process involving many stakeholders; who among others include governmental, non-governmental organizations, local communities and academics that steer development. The process of capacity building includes strengthening of skills and competencies, training of individuals, and infrastructural development of research and development institutions (ACP Science and Technology Programme, 2012). Adisa *et al.* (2018) argued that farmers must acquire new skills, ideas and techniques in order to get profit from their enterprises through production of quality products.

The study therefore assessed the capacity building needs of cocoa farmers on standard practices for cocoa export in the study area. Specifically, it described the socioeconomic characteristics of cocoa farmers, identified the level of importance of the standard practices and competency level of cocoa farmers on standard practices required for producing quality cocoa beans for export.

The hypothesis of the study is as stated below;

There is no significant relationship between some selected socioeconomic characteristics of cocoa farmers and their capacity building needs on standard practices for cocoa export.

METHODOLOGY

The study was carried out in Cross River State, Nigeria. The State lies between latitudes 4^0 and 5^0North of the equator and longitudes 7^0 and 9^0 East of the Greenwich Meridian. It shares boundary with Benue State to the West, Abia State to the South and the Atlantic Ocean to the East. Humid tropical climate of 1300-3000mm rainfall and 30^0C mean annual temperature prevail over the State except on the Obudu Plateau where the climate is sub-temperate with temperatures of 15^0C-23^0C.The vegetation ranges from Mangrove Swamps, through rainforests to derived Savannah and Montane Parkland. The main crops grown in the State are tree crops like cocoa, oil-palm, banana and plantain. The total land area of the State is 23,074 square kilometres distributed over 18 Local Government Areas (LGAs). The State has a population of 3.3 million people (National Population Commission, 2011), spread across three agricultural zones namely southern, northern and central. Cocoa is mainly produced in the southern and central zones of the State.

The population for this study comprised all registered members of Cocoa Farmers' Association of Nigeria (CFAN) in Cross River State, Nigeria.
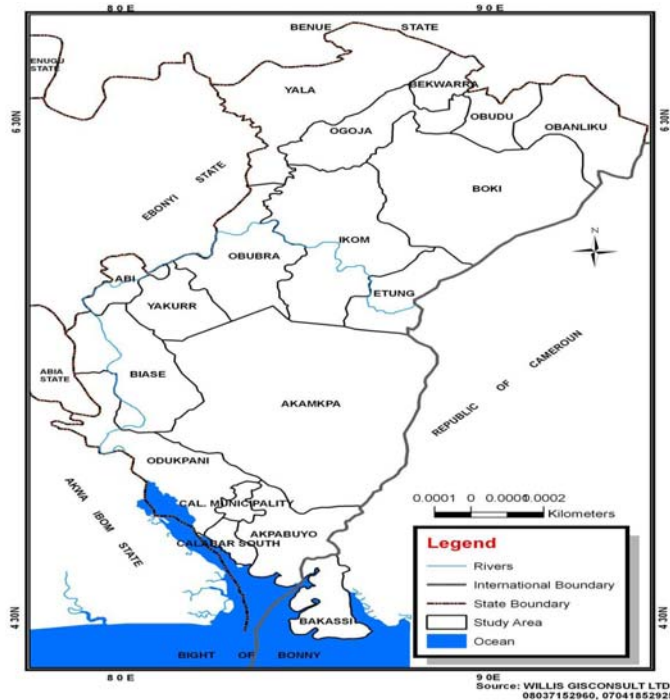
Fig. 1: Map of Cross River State showing Local Government Areas

Source: Willis Gisconsult Ltd.

Three-stage sampling technique was used to select 336 registered members of CFAN in Cross River State. The first stage involved purposive selection of Central zone of Agricultural Development Project in the State where the highest number of cocoa farms is located. The second stage involved purposive selection of 3 major cocoa producing Local Government Areas (LGAs) in the zone. The third stage was a random selection of 45% members of the association from each of the 3 LGAs. Data were collected through questionnaire and analyzed with both descriptive and inferential statistics including frequency counts, percentages, means, standard deviations, Weighted Discrepancy Scores (WDS) and Pearson Product Moment Correlation (PPMC) analysis.

Measurement of variable

Borich Needs Assessment Model was used to assess the areas of capacity building needs of farmers on standard practices for cocoa export. This model proposed by Borich (1980) is one of the most widely used models in agricultural education and agricultural extension with regard to need assessment of agricultural teachers, extension agents, and farmers. According to this model, Weighted Discrepancy Score (WDS) was calculated using formula for evaluating and ranking farmers' training needs. To this end, the

discrepancy score of each eligible was first calculated individually (Equation 1) and then the weighted discrepancy score was calculated for each individual job competence (Equation 2). Finally, by summing weighted discrepancy scores and dividing it by the number of standard practices examined, Mean Weighted Discrepancy Score (MWDS) was calculated (Equation 3) and 20 competences were ranked in relation to MWDS.

i.e.

Discrepancy Score = $(I – C)$……… Equation 1

Weighted Discrepancy Score = $I(I – C)$………… Equation 2

Mean Weighted Discrepancy Score = $\sum I(I – C)/n$………… Equation 3

Where; I = Importance level, C = Competency level and n = Number of standard practices

A three point Likert-type scale was employed in the measurements of both the respondents' perceived level of importance and level of competence on standard practices for cocoa export. The scale was graded as follows:

Perceived level of importance on standard practices for cocoa export: Respondents were

asked to tick the option that best describes their situation and were rated as very important (2), not so important (1)and not important (0)

Perceived level of competence on standard practices for cocoa export: Respondents' competences on the listed skills were rated as very competent (2), not so competent (1) and not competent (0)

RESULTS AND DISCUSSION

Socioeconomic characteristics of respondents

The result of the socio-economic characteristics of respondents is presented in Table 1. It was reveals that the mean age of respondents was 48.2±9.7 years. This suggests that most of the respondents are still in their productive phase and may be willing to use standard practices for cocoa export. This result aligns with that of Daudu *et al.* (2019) that smallholder farmers in Kwara State of Nigeria are still in their economic active age to make positive contribution to agricultural production. Also in Table 1, about thirty-three percent of the respondents (32.7%) had secondary education while 31.3% had tertiary education. This implies that cocoa farmers in the study area are well educated which may likely aid the usage of standard practices for cocoa export. This result agrees with earlier finding by Oluyole & Sanusi

(2009) that more graduates were being involved in cocoa production in Cross River State. Findings from Table 1 reveal that the mean household size of the respondents was 7 people. This implies that farmers would have advantage of family labour which may be crucial for the tedious farming operations in cocoa production. The result of this study is consistent with the submission of Akinnagbe (2017) that large household size is typical of the Nigerian cocoa farmers. The mean farming experience of the respondents was17.5±5.8 years. This suggests that respondents have been farming for a considerable period of time in line with the submission of Uwagboe *et al.* (2016) and this could be crucial for their involvement in using standard practices for producing quality cocoa beans. Furthermore, the mean farm size of the respondents was 2.2±1.3. This implies that cocoa cultivation is still in the hands of small scale farmers in the study area. This result aligns with the report of Omoare *et al.* (2016) that majority of cocoa farmers in South West Nigeria are smallholder farmers. Also, Table 1reveals that the average income generated by the respondents from cocoa sale per hectare was637,721.9±93,919.9.This is relatively low compared to the total cost of production as explained by the respondents during group discussion. This result support earlier finding by Adeogun *et al.* (2015) that the income generated by cocoa farmers was low in Cross River State, Nigeria.

Table 1: Percentage distribution of respondents by socioeconomic characteristics (n=336)

Category		Percentage	Mean (±SD)
Age (Years)	≤30	4.5	48.2±9.7
	31-40	25.0	
	41-50	37.2	
	51-60	20.2	
	.>60	13.1	
Level of education	No formal education	21.4	
	Primary education	14.6	
	Secondary education	32.7	
	Tertiary education	31.3	
Household size	1-5	43.8	7.0±3.0
	6-10	49.7	
	11-15	5.3	
	>15	1.2	
Farming experience (years)	≤10	4.5	17.5±5.8
	11-20	74.1	
	21-30	18.8	
	>30	2.6	
Cocoa farm size (hectare)	≤1.9	56.3	2.2±1.3
	2.0-3.0	36.3	
	>3.0	7.4	
Cocoa Income (Naira/hectare)	≤250	0.6	637,721.9±93,919.9
	251–500	3.9	
	501–750	87.5	
	>750	8.0	

Source: Field survey, 2018, SD = Standard Deviation

Extension services delivery to respondents

It was discernable from Table 2 that almost all the respondents, 97.0% and 93.8% sourced information on standard practices for cocoa export from fellow farmers and friends and neighbours, respectively. This suggests that there might be some level of closeness and trust among the farmers. The result from this study agrees with the findings of Omoare *et al.* (2016) that majority of cocoa farmers in South West Nigeria got information on good cultural management practices from non-institutional sources. It was further revealed that 76.2% and 57.1% got information on standard practices for cocoa export from Cocoa Association of Nigeria (CAN) and Cocoa Farmers Association of Nigeria (CFAN), respectively which are non-

governmental organizations. The least sources of information were Cross River State Agricultural Development Project (CRSADP) (42.9%), Cocoa Certification Agencies (39.6%) and Cocoa Research Institute of Nigeria (CRIN) (36.9%). This is an indication that governmental extension organizations were poorly accessed for information on standard practices for cocoa export. This result agrees with that of Omoare *et al.* (2016) that CRIN was a rare source of information to cocoa farmers on good cultural management practices in South West Nigeria. Furthermore, 31.0% of the respondents indicated that they had contact with extension agents once every 3 months. This suggest that extension agents did not visit the cocoa farmers regularly, which may result to low usage of standard practices for cocoa export.

Table 2: Distribution of respondents by extension services received (n=336)

Extension services delivery to cocoa farmers	Frequency	Percentage*
Sources of information		
CRSADP	144	42.9
CRIN	124	36.9
CFAN	192	57.1
Media (radio, television and newspapers)	168	50.0
Licensed Buying Agents	160	47.6
Cocoa certification agencies/organizations	133	39.6
Fellow farmers	326	97.0
Friends and neighbours	315	93.8
CAN	256	76.2
Contact with extension agents		
Weekly	3	0.8
Fortnightly	51	15.2
Monthly	78	23.2
Quarterly	104	31.0
Yearly	100	29.8

Source: Field survey, 2018
*Multiple responses

Level of importance of standard practices for cocoa export by respondents

The need to evaluate technical competence of cocoa farmers on standard practices for producing quality cocoa beans and consequently identify areas where capacity building is needed is essential for cocoa development as a whole and cocoa export in particular. The result of the level of importance of standard practices for cocoa export by respondents is presented in Table 3. The standard practices were ranked in order of importance using the mean score and standard deviation obtained. Practices that showed highest level of importance were choice of planting material (1.99±0.12), fertilizer application (1.97±0.18), removal of damaged and diseased pods before breaking (1.92±0.28), farm pruning (1.90±0.29) and shade for cocoa plants (1.89±0.32), ranking 1st, 2nd, 3rd, 4th and 5th, respectively. This implies that farmers placed more importance or priority on these

practices than other activities towards the production of high quality cocoa beans for export. A closer observation on aforementioned practices shows that most of these practices were pre-harvest activities in cocoa production. This also affirms the earlier assumption that pre-harvest activities equally play important role in the production of quality cocoa beans. Another implication of this finding is that farmers in the study area needed urgent training in the pre-harvest activities involved in cocoa production such as stock selection, soil improvement, crop protection, shade management and pruning. However, low level of importance was observed in practices such as turning of beans while drying (1.69±0.46), storage of beans above ground level and away from the wall (1.64±0.49), adequate ventilation in the store (1.62±0.49), storage of beans away from strong odours (1.53±0.53) and control of store pests and diseases (1.43±0.50). Most of these practices are under storage of beans. This suggests that farmers

rate storage activities as less important in the production of quality cocoa beans for export. The implication is that farmers may skip some of these practices or inadequately implement them; thereby resulting to a decline in the quality of the processed beans. Thus, farmers may need to be enlightened on the importance of storage activities in a bid to presenting quality cocoa beans for export.

Table 3: Distribution of respondents by importance level on standard practices for cocoa export (n=336)

Level of Importance of Standard Practices for cocoa export among Cocoa Farmers	Frequency of category				
	Very important (%)	Less important (%)	Not important (%)	Mean±SD	Rank
Choice of planting material	98.5	1.5	0	1.99±0.12	1st
Shade for cocoa plants	88.7	11.3	0	1.89±0.32	5th
Fertilizer application	96.7	3.3	0	1.97±0.18	2nd
Control of field pests and diseases	81.5	18.5	0	1.81±0.37	11th
Pruning of the farm	90.2	9.8	0	1.90±0.29	4th
Timely pod harvesting	86.6	13.4	0	1.87±0.34	6th
Removal of damaged and diseased pods before breaking	91.7	8.3	0	1.92±0.28	3rd
Time of pod breaking	86.3	13.7	0	1.86±0.34	7th
Covering of fermenting beans	83.3	16.7	0	1.83±0.37	9th
Time of fermentation	81.8	18.2	0	1.82±0.39	10th
Turning of fermenting beans	83.6	16.4	0	1.84±0.37	8th
Raised slab for bean drying	75.3	24.7	0	1.75±0.43	14th
Turning of beans while drying	69.3	30.7	0	1.69±0.46	16th
Sorting of dried beans	74.0	25.0	1.0	1.76±0.43	13th
Packaging of dried beans	79.2	19.6	1.2	1.79±0.41	12th
Use of clean jute bags for storage	69.6	30.4	0	1.70±0.46	15th
Storing beans above ground level and away from the wall	61.6	38.4	0	1.64±0.49	17th
Storing beans away from strong odours	54.5	43.8	1.8	1.53±0.53	19th
Adequate ventilation in the store	61.9	38.1	0	1.62±0.49	18th
Control of store pests and diseases	43.2	54.6	2.2	1.43±0.50	20th

Source: Field Survey, 2018; SD= Standard Deviation; Mean score < 1.0 (less important), mean score = 1.0 (moderately important) and mean score >1.0 (highly important)

Competence level of respondents on standard practices for cocoa export

The result of the competency level of respondents on standard practices for the production of quality cocoa beans is presented in Table 4. Using the mean score and standard deviation, the standard practices were ranked in order of competence as indicated by the respondents. Farmers showed very high level of competence on practices such as use of improved cocoa variety (1.97±0.17), use of appropriate dose of fertilizer (1.86±0.35), provision of adequate shade for cocoa plants (1.85±0.36), removal of damaged and diseased pods before breaking (1.79±0.41), and pruning of the farm (1.77±0.42) ranking 1st, 2nd, 3rd, 4th and 5th respectively. From the finding, it was evident that use of improved cocoa variety, use of appropriate dose of fertilizer and removal of damaged and diseased pods before breaking were perceived by farmers as areas where they were highly competent in the production of high quality cocoa beans for export as they ranked highest. This impliesthat the farmers may need less training on the aforementioned practices which involve choice of planting material, shade management and pod breaking. On the other hand, farmers showed low level of competence on practices such as use appropriate dose of agrochemicals on stored beans (1.58±0.48), store beans above ground level (1.56±0.50), provide adequate ventilation in the store (1.52±0.50), packaging of dried beans (1.52±0.49), and sorting of dried beans (1.47±0.47), ranking 16th, 17th, 18th, 19th and 20th respectively. From the finding, it was evident that use appropriate dose of agrochemicals on stored beans, store beans above ground level and packaging of dried beanswere perceived by farmers as areas where they were less competent in their involvement in the production of high quality cocoa beans for export as they ranked lowest. This means that the farmers may need more training on the aforementioned practices which involve storaging, sorting, and packaging. This suggests that farmers relatively needed training on post-harvest handling of cocoa for an improvement in the quality of the processed beans. The resultsalso reveal that the order of the perceived level of

importance of the standard practiceswas not the same as the order of the perceived level of competence on those practices. This is an indication that there is a gap between what the farmers know and their actual performance. This also suggests that there is need to identify areas of the standard practices where farmers needed capacity building in order to produce high quality cocoa beans for export.

Table 4: Distribution of respondents by competency level on STPs for cocoa export (n=336)

Competency Level on standard practices for cocoa export among cocoa farmers	Frequency of category			Mean (±SD)	Rank
	Very competent	Less competent	Not competent		
Use improved cocoa variety	97.0	3.0	0	1.97±0.17	1st
Provide adequate shade for cocoa plants	85.1	14.9	0	1.85±0.36	3rd
Use appropriate dose of fertilizer	0	34.0	66.0	1.86±0.35	2nd
Use appropriate dose of agrochemicals on field plants	74.1	25.9	0	1.74±0.44	8th
Pruning of the farm	10.2	23.2	66.6	1.77±0.42	5th
Timely pod harvesting	26.0	20.8	53.2	1.66±0.41	15th
Remove damaged and diseased pods before breaking	78.9	21.1	0	1.79±0.41	4th
Break pods not later than 5 days after harvesting	71.1	28.9	0	1.71±0.45	10th
Cover fermenting beans from rain and/or cold	69.9	30.1	0	1.69±0.46	12th
Ferment beans for 6-7 days	75.9	24.1	0	1.76±0.43	7th
Turn fermenting beans once every 48 hours	23.1	31.5	45.4	1.76±0.59	6th
Dry fermented beans on a raised slab	67.9	32.1	0	1.68±0.47	13th
Turn drying beans	70.8	29.2	0	1.72±0.46	9th
Sorting of dried beans	20.5	32.2	47.3	1.47±0.47	20th
Packaging of dried beans	10.3	41.4	48.3	1.52±0.49	19th
Use clean jute bags for storage	67.9	32.1	0	1.67±0.47	14th
Store beans above ground level	56.2	43.8	0	1.56±0.50	17th
Store beans away from strong odours	27.9	40.4	41.8	1.69±0.51	11th
Provide adequate ventilation in the store	51.8	48.2	0	1.52±0.50	18th
Use appropriate dose of agrochemicals on stored beans	2.3	35.4	62.3	1.58±0.48	16th

Source: Field Survey, 2018; SD= Standard Deviation

Bench mark: Mean score < 1.0 (less competent), mean score = 1.0 (moderately competent) and mean score >1.0 (highly competent)

Areas of capacity building needs of respondents on standard practices for cocoa export

The results of the areas of capacity building needs of farmers on standard practices for cocoa export are presented in Table 5. It was revealed that farmers needed capacity building in 8 out of the 20 standard practices examined. These practices were: sorting of dried beans (0.51), packaging of dried beans (0.48), timely pod harvesting (0.39), breaking pods not later than 5 days after harvesting (0.28),covering of fermenting beans from rain and/or cold (0.26),removal of damaged and diseased pods before breaking (0.25), pruning of the farm (0.25), and use of appropriate dose of fertilizer (0.22). This finding indicates that the identified areas of capacity building needs of respondents are very relevant to knowledge and skills required for the production of high quality cocoa beans for export. Precisely, farmers mostly needed capacity building in the areas of sorting of dried beans, packaging of dried beans and timely pod harvesting as they were ascribed highest mean values. This result further showed that farmers were relatively lacking technical know-how on post-harvest handling of cocoa beans in the study area particularly in the areas of harvesting, sorting and packaging of dried beans.

Table 5: Distribution of respondents by their capacity building needs on standard practices for cocoa export (n=336)

Standard Practices for cocoa export	Mean score		Discrepancy score (I-C)	WDS = [I(I-C)]	Remark (Capacity building)
	Importance (I)	Competence (C)			
Use of improved cocoa variety	1.99	1.97	0.02	0.04	Not needed
Provision of adequate shade for cocoa plants	1.89	1.85	0.04	0.08	Not needed
Use of appropriate dose of fertilizer	1.97	1.86	0.11	0.22	Needed
Use of appropriate dose of agrochemicals on field plants	1.81	1.74	0.07	0.13	Not needed
Pruning of the farm	1.9	1.77	0.13	0.25	Needed
Timely pod harvesting	1.87	1.66	0.21	0.39	Needed
Removal of damaged and diseased pods before breaking	1.92	1.79	0.13	0.25	Needed
Breaking pods not later than 5 days after harvesting	1.86	1.71	0.15	0.28	Needed
Covering of fermenting beans from rain and/or cold	1.83	1.69	0.14	0.26	Needed
Fermentation of beans for 6-7 days	1.82	1.76	0.06	0.11	Not needed
Turning of fermenting beans once every 48 hours	1.84	1.76	0.08	0.15	Not Needed
Drying of fermented beans on a raised slab above the ground surface	1.75	1.68	0.07	0.12	Not needed
Turning of beans regularly while drying	1.69	1.72	-0.03	-0.05	Not needed
Sorting of dried beans	1.76	1.47	0.29	0.51	Needed
Packaging of dried beans	1.79	1.52	0.27	0.48	Needed
Use of clean jute bags for storage	1.7	1.67	0.03	0.05	Not needed
Storage of beans above ground level and away from wall	1.64	1.56	0.08	0.13	Not needed
Storage of beans away from strong odours	1.53	1.69	-0.16	-0.24	Not needed
Provision of adequate ventilation in the store	1.62	1.52	0.10	0.16	Not needed
Use of appropriate dose of agrochemicals on stored beans	1.43	1.58	-0.15	-0.21	Not needed
Sum of WDS=∑[I(I-C)				*3.11*	
MWDS= {∑[I(I-C)/n]}				*0.16*	

Source: Data Analysis, 2018

WDS=Weighted Discrepancy Score, MWDS= Mean Weighted Discrepancy Score

Benchmark: WDS > MWDS Simplifies that capacity building is required while WDS < MWD Simplifies that capacity building is not needed.

Hypothesis Testing

Table 6 reveals the results of correlation analysis of the relationship between some selected socioeconomic characteristics (age, household size, farm size, farming experience and income) of respondents and their capacity building needs on standard practices for cocoa export. It was revealed that farm size (r=0.137, p=0.012) and income (r=0.151, p=0.006) were positive and significant at 5% level and 1% level, respectively. The

implication is that respondents with large farm size will require more capacity building than those with small farm size and those with higher income will most likely be able to attend capacity building programme to acquire knowledge on how best to produce quality cocoa beans for export. This result aligns with the finding of Daudu *et al.* (2019) that farm size and income were positively significant to the capacity building needs of smallholder arable crop farmers on soil fertility management practices in Kwara State of Nigeria.

Table 6: Results of correlation analysis showing the relationship between some selected socioeconomic characteristics of cocoa farmers and their perceived capacity building needs on standard practices for cocoa export

Variables	r-value	p-value
Age	0.011	0.846
Household size	0.009	0.867
Years of cocoa farming	-0.006	0.909
Farm size	0.137*	0.012
Income	0.151**	0.006

 *Correlation significant at 0.05 level (2-tailed)

**Correlation significant at 0.01 level (2-tailed)

Source: Data Analysis, 2018

CONCLUSION

Based on the findings from this study, the need for capacity building of the cocoa farmers in the postharvest handling of cocoa particularly in areas of harvesting, sorting and packaging of dried beans, seem to account for the low involvement in the production of quality cocoa beans for export. The study therefore recommended an urgent need to package a robust training programme and advisory services by extension and other relevant agencies for cocoa farmers on areas of capacity deficiencies indicated for quality bean production.

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