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Market Access through Cooperative Action: Insights from Shea Cooperatives in the Tamale Metropolis, Ghana

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aims: The aim of this study is to investigate how cooperative activity in the shea business affects market access. Access to shea business market is fundamental for the success of shea production. Yet shea nuts pickers are not always able to provide the shea nuts because of the seasonal nature making ready market a challenge.
Place of Study: This study was conducted to assess market access through cooperative action: Insights from shea cooperatives in the Tamale metropolis.

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Methodology: A cross-sectional study design was used in this study among study participants in the Tamale metropolis. Simple random sampling technique was applied to obtain a sample size of 384. The collected data was filled on cleared for completeness and analyzed using Statistical Package for Social Science version (SPSS) 21.0 and Microsoft word excels 2013.
Results: From the results, 384 (100%) study participants indicated that cooperative assisted them to get access to market information about shea production. The results showed that, 84% study participants cited that being a member of the cooperative helped them to get ready market for shea nut/butter products. The results also showed that, the category of study participants and age were significantly associated with knowledge of factors that undermine the shea cooperatives from accessing markets (χ^2=45.7, p=0.001; χ^2=49.7, p=0.002) respectively. However, variables such as education and marital status respectively (χ^2=10.3, p=0.10; χ^2=10.5, p=0.14) were not statistically significant and had no association
Conclusion: The study concluded that, cooperatives had a positive effect on women access to shea market at the study setting. Among other things, the study recommends that, cooperative governance structures should be strengthened to enhance coordination, bulk marketing, and collective bargaining power for better market access.

Keywords: Market access; cooperative action; shea; market challenge.

1. INTRODUCTION

Shea production in West Africa serves as a viable strategy for poverty alleviation, an industry primarily dominated by women and, to a lesser degree, by men (Rousseau, Gautier & Wardell, 2019). Women in the subregion predominantly engage in the gathering of shea nuts. The shea nuts are transported to the market for sale, while a limited number of persons opt to convert the shea nuts into shea kernels, which are subsequently processed into shea nut butter. This approach is considered a formidable undertaking. A limited number of women participate in butter sales, either utilizing their own capital or selling to exporters, as a means of revenue generation (Mangeni, 2019; Addaquay, 2004). The Shea tree yields green-pulp fruits that descend from the tree once reaching full maturity due to their weight. In Ghana, women and children engage in fruit collecting from April to August each year (Rousseau, Gautier & Wardell, 2019).

The fleshy-pulp of shea fruit is a vital food source for rural communities and many species, including bats, cattle, and birds (Deng, Dossou & Tanko, 2017). The Shea tree possesses numerous domestic and industrial uses. The roots, leaves, trunk, bark, and cortex are used in the manufacture of herbal medicines. The trunk of the Shea tree is highly appropriate for charcoal production and can also serve as a construction material (Senchi & Yakubu, 2012). The shea tree serves as a natural protector for the environment and efficiently reduces erosion and desertification (Addaquay, 2004). Moreover, butter is obtained from the kernel. Furthermore, the butter is employed in the local community for traditional medicinal uses, culinary reasons, cosmetic manufacturing, and the production of chocolates, candles, and pastries, acting as a substitute for cocoa butter (Lovett, 2015). These emphasize the significance of the crop in alleviating poverty and enhancing well-being. The market's accessibility poses a considerable challenge to the functioning of the shea business and the actions of its stakeholders (Solomom Gold & Igene, 2018). The existence of an accessible market for individuals in cooperative organizations facilitates the advancement of businesses operated by women participating in these endeavors (Birthal, Joshi & Gulati, 2005). Market access is attained by collaborative efforts, wherein business individuals organize to collaboratively manage activities such as harvesting shea nuts, establishing prices, marketing products, and delivering goods and services. This collaborative initiative seeks to safeguard their interests and achieve both personal and institutional goals (Aboyella, 2002; Adekambi et al., 2018).

In collaborative efforts, participants have varied duties to ensure the fair allocation of resources to those in greatest need (Kante et al., 2008). The market's availability depends on the effectiveness of collaborative efforts and the accessibility of opportunities for their use. Market access enhances the sales opportunities for women engaged in shea business operations, allowing them to optimize their revenue and attain maximum benefits. Nevertheless, individuals involved in commercial activities may

periodically require proactive engagement (Tanzile et al., 2023).

Likewise, sustaining an active market cooperative enables participants in the enterprise to secure a safe and stable pricing, offering individuals a conveniently accessible market in the presence of price manipulation. Facilitating access to a readily available market for both women and men ensures equitable pricing in the local market and mitigates the danger of exploitation and deceit by traders and middlemen (Adekambi et al., 2018). Fonteneau (2010) contends that improving cooperative activities is essential for establishing consistent pricing among all shea operators. This not only enhances profitability but also guarantees that shea company proprietors obtain the requisite benefits from their enterprises. Market access promotes the progress of both women and men by encouraging collaborative growth, hence increasing the sales of participants in market activities. Thus, the existence of a viable market ensures the successful sale of products by women engaged in business. Market access ensures that dealers and pickers can acquire and advance their businesses through enhanced collaborative initiatives (Nanyonjo et al., 2020). The market cooperative offers advertising chances for women to promote novel shea input goods (Awo & Agyie-Sasu, 2016). The market cooperative assures shea business proprietors of the existence of an easily accessible market for shea operations among the participants (Okolo et al., 2018). When participants in the shea sector have immediate access to a market for their products, their incentive to increase capital for significant earnings from the enterprise is maximized (Issahaku et al., 2011). The imperative for effective market access for persons involved in the shea butter industry is rooted in the necessity for banks to support key stakeholders to augment their financial returns (Al-hassan, 2009). The cooperative establishes a link between shea butter producers and prospective purchasers, enabling them to create revenue and maintain the availability of raw materials, especially among the harvesters. The capacity of key stakeholders to invest in the enterprise dictates market access (Issahaku et al., 2011). The synergy of market access opportunities and collaborative support in the shea sector allows individuals to optimize the benefits derived from their investments in the industry (Adekambi et al., 2018). To successfully engage in the shea business market, players must have a thorough comprehension of its functioning. This understanding will empower them to cultivate a collaborative environment that promotes an accessible market for the firm (Al-hassan, 2009).

Similarly, the operators of the shea company should cooperate to identify and prioritize the elements of shea quality that require improvement to maximize revenues. This involves the creation of a cordial relationship between collectors and buyers. Therefore, organizations and groups must maintain effective organization to reach a conveniently available market for their products. The cooperatives must ensure that all participants in the enterprise are sufficiently protected from possible pricing exploitation (Trevino and Nelson, 2021).

Shea cooperatives offer a convenient marketplace for the shea industry; nonetheless, they have several challenges. The highlighted causes contributing to the issues in the shea industry include the lack of institutions that facilitate the processing and marketing of shea products, hence deterring investment in the sector. Furthermore, there is an absence of governmental resolve to promote the interests of local women and men involved in the shea industry (Tanzile, 2023).

As a result of coordinated efforts, the chance to enter the shea market is increasing. This is deemed a vital element in assisting women, especially those in rural areas, to overcome poverty (Aboyella, 2002). Likewise, women in the Northern region encounter similar challenges at local markets. Alongside the lack of a sustainable market for the shea industry, poor sales present a significant obstacle to the operational expansion of stakeholders in this sector (Adam et al., 2014). The majority of women engaged in the shea sector encounter logistical and technological constraints that impede their capacity to gather a greater volume of fruits. This ultimately results in a reduction in both the quantity and quality of butter produced. Consequently, women cannot fully capitalize on their labor and resources (Issahaku et al., 2011). Even in collaborative groups, some continue to exploit others for personal gain. Under these circumstances, the local women do not obtain the full benefits associated with the sales of shea nuts (Kwode, 2010). While cooperatives are acknowledged for their efficacy in advancing high-value commodities, there has been limited discourse regarding their potential in enhancing the shea industry, especially in Tamale city.

Empirical research investigating the impact of cooperative action in the shea business on market access in the studied site is insufficient. This study aimed to rectify the deficiency of information in the current literature. The specific objectives are to; investigate how cooperative activity in the shea business affects market access, assess the role of cooperatives in providing market information to shea producers and identify challenges that limit shea cooperatives from accessing markets.

1.1 Operationalizing the Concept of Collective Action in Marketing

Collective action refers to the collaboration of individuals, either directly or indirectly, to accomplish a goal perceived as advantageous for all participants. This transpires when individuals collaborate and reach consensus to achieve a goal that corresponds with their mutual interests. The contemporary concept of collective action was developed as a tactic to tackle the problem of free-riders and to provide cooperative methods for the management of common resources (Ostrom, 2000). The notion of collective action has recently been employed to characterize group endeavors that enhance the production and selling of agricultural and food commodities. This trend arises from heightened market rivalry and integration, alongside the marginalization of minorities in contemporary marketplaces (Baden and Pionetti, 2011). Collective action, as outlined in marketing literature, encompasses group training in production techniques, negotiation abilities, grading and sorting, and group dynamics. This training assists cooperative or community members in marketing their products in bulk, hence minimizing transaction costs and enhancing economies of scale (Houessou, 2019). Collective action is characterized as the synchronized endeavor of individuals inside a group or cooperative to share market insights, participate in sales, and generate business opportunities (Gillinson, 2004).

1.2 The Argument in Favor of Collective Action to Tackle Market Failings

The economically disadvantaged population in Africa has utilized both formal and informal groups to engage in collective action, resulting in an enhancement of their overall well-being (Markelova & Mwangi, 2010). Empirical evidence supports the notion that collective action is most effective when it encompasses marginalized groups, including women, ethnic minorities, and the economically disadvantaged. Oxfam's experience in sub-Saharan Africa demonstrates that collective action enhances the market position of small-scale farmers. This include the provision of inputs and training, utilizing economies of scale, and augmenting their bargaining capacity (Baden, 2014). The implementation of group marketing has been used as a way to enhance connections and cultivate trust among farmers, dealers, and the business sector engaged in the shea producing value chains. A study on collective action in rural Ghana indicates that it is essential for facilitating company growth in rural regions and addressing market deficiencies (Awo and Agyie-Sasu, 2016). Shea businesses may enhance their ability to acquire essential information, meet rigorous quality requirements, and expand their business by integrating their financial and human resources. This may allow them to offer their products in previously inaccessible local or global markets that individual dealers cannot reach.

2. METHODOLOGY

2.1 Study Area

The research was conducted in the Tamale metropolis. In 2004, the Tamale Metropolitan Assembly was established by the legislative instrument (LI 2068). The metropolis is the only one in the one in the Northern part of the country serving as a metropolis. It has Tamale as the Metropolitan capital city and at the same time the regional capital of the Northern Region (GSS, 2014).

The Tamale Metropolis is located in the central part of the Region and bounded to the west and north with the Sagnerigu district, to the east with the Mion district and south to the Savannah region. The Metropolis has a total estimated land size of 646.90180 sqkm (GSS-2014). Geographically, the Metropolis lies between latitude 9º16 and 9º 34 North and longitudes 0º 36 and 0º 57 West.

The metropolis has a sex ratio of 99.1. The population of the metropolis is youthful (almost 36.4% of the population is below 15 years) depicting a broad base population pyramid which tapers off with a small number of elderly persons (60 years and older) representing 5.1 percent. The total age dependency ratio for the district is 69.4, the age dependency ratio for rural localities is higher (86.5) than that of urban localities (65.7) (GSS, 2014).

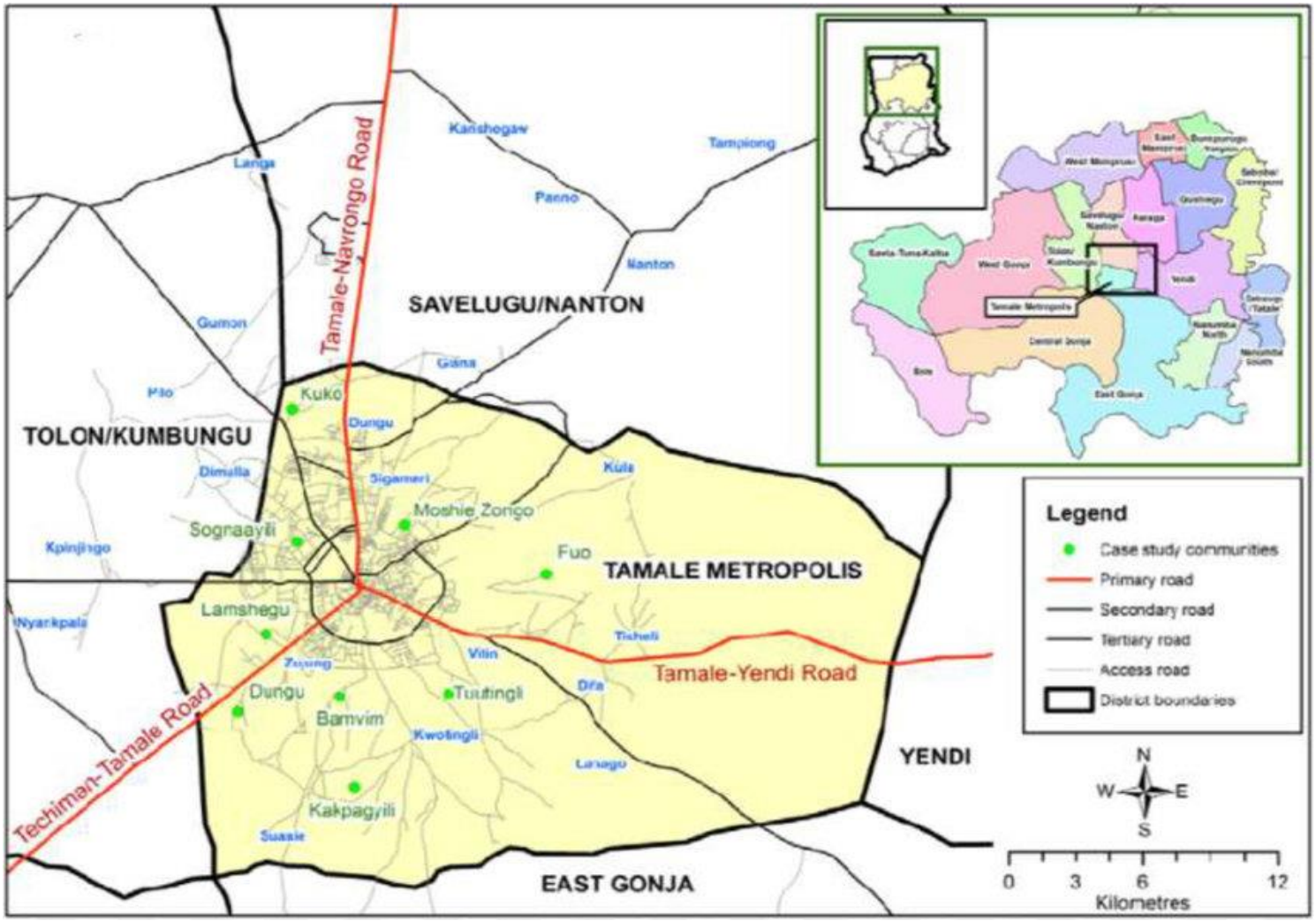

Fig. 1. National map of Tamale metropolis

The metropolis is positioned well for business activities in the agriculture and local goods from both local and international trades. Traders from other countries within the West African regions such as Niger, Mali and northern part of Togo en-route to the metropolis to engaged in trading activities (GSS, 2014).

The Northern Regions historically in the country had vast land cover with smaller population sizes and the Metropolis is of no exception. This area begun experiencing high population growth after many people with different ethnic backgrounds started migrating from other areas to settle their thus making it a cosmopolitan area (GSS, 2014).

2.2 Research Design Approach

The research utilized a descriptive cross-sectional design. A descriptive cross-sectional study design was deemed appropriate since it effectively captures a comprehensive overview of a phenomenon at the time of the investigation and facilitates the generalization of research findings within the study area context. (Creswell, 2005).

2.3 Sample Size Determination

The sample size involved 384 study participants. This sample size was calculated using Snedecor and Cochran (1989) formula. This is because, there was no sampling frame for the population. This is explained as;

Formula; $n= z^2pq/d^2$

Where;

n=the desired sample size
z=standard normal deviate (1.96) corresponding to 95% confidence limit
d=degree of precision set at 5%
P=prevalence/proportion of people engaged in shea activities in the form of cooperatives (estimated proportion 0.5).
Q=Proportion of people engaged in shea activities who do not involve themselves in cooperatives at the study area
$n= z^2pq/d^2$
$n = (1.96)^2(0.5)\ (0.5)/(0.05)^2$
n = 384

2.4 Sources of Data and Methods of Data Collection

The study used both secondary and primary sources of data to provide the required responses to the research questions. The secondary sources included both published and unpublished reports on topics related to the use of alternative sources of electricity. Journals and reports provided the conceptual and theoretical frameworks within which alternative sources of energy derive their justification. The conceptual issues that were derived from the secondary sources of data included the meaning of the concept of alternative energy; the link between alternative energy and sustainable poverty reduction and environmental quality; and the available technologies. The primary data were also gathered through the researchers observations and administration that were carefully granted with respondents using questionnaires.

2.5 Method of Data Analysis

Data was entered using Statistical Package for Social Sciences (SPSS) version 21.0 and word excel 2016. The analysis of the data was done using mainly descriptive and inferential statistics. Under descriptive statistic simple frequency, percentage tables and a chart were used to present the data whilst under the inferential statistics, Pearson Chi-square and Logistic regressions were used to compare continuous variables and the test for discrete variables. Nominal 2sided p-values were reported with statistical significance defined at p-value< 0.05 at 95% confidence interval.

3. RESULTS

3.1 Demographic Data of Respondents

The study assessed the demographic characteristics of the study participants as shown in Table 2. The variables examined included age of respondents in years, sex, marital status, educational qualification and category of people engaged in the shea activity. The results are presented in Table 2 with each study variable.

Table 2 shows the demographic characteristics of respondents. The mean age of the respondents was 31.4 ± 15.4 years. Table 4 showed that half of the respondents were aged between 31-35 years. From the results, majority of the respondents (62%) are males. The results also showed that majority of the participants representing 61% had no formal educational training. From the results, majority of the participants representing 57% said they were

married whilst 23% indicated that they were engaged in shea butter extraction activity.

3.2 Effects of Cooperatives on Participants' Access to Shea Production Inputs

This section examines how cooperatives have had positive effects on women access to shea production inputs.

From Table 3, study participants were asked to state to the effects of cooperatives on their access to shea production inputs at the study setting. From the results, it was revealed that all the study participants representing 384 (100%) indicated that cooperative assisted people to get access to market information about shea production. It was also showed that, majority of the respondents 289 (75%) cited that, cooperatives enable people to get raw products of shea in large quantity for productions. However, most of the study participants 119 (31%) revealed that, cooperative did not provide satisfaction with cost of credit for operation among study participants.

Table 1. Sample sizes for the study

SN	Category	Total population	Sample size	No of questionnaire distributed	Response rate (%)
1	Butter extractors	n.a	90	90	100
2	prickers	n.a	120	120	100
2	Traders	n.a	174	174	100

Table 2. Demographic data of respondents

Variable	Frequency	Percent (%)
Age		
26-30	104	27.0
31-35	191	50.0
36+	89	23.0
Sex		
Male	147	38.0
Female	237	62.0
Education		
No formal education	234	61.0
Primary	97	25.0
SHS	38	10.0
Tertiary	15	4.0
Marital status		
Single	142	37.0
Married	219	57.0
Separated	23	6.0
Category of respondents		
Butter extractor	90	23.0
Picker	120	31.0
Trader	174	46.0

Table 3. Effects of cooperatives on participants access to shea production inputs

Variable	Yes	No
People access to market information about shea inputs	384 (100.0%)	0 (0.0%)
Cooperatives enable people to save for shea inputs	267 (70.0%)	117 (30.0%)
Record keeping for credit access	300 (78.0%)	84 (22.0%)
Provide medium for people to expand their production	384 (100.0%)	0 (0.0%)
Enable people to get raw products in large quantity	289 (75.0%)	95 (25.0%)
Assist people with modern production inputs	257 (67.0%)	127 (33.0%)
Satisfied with cost of credit for operation	265 (69.0%)	119 (31.0%)

3.3 Effects of Cooperatives on Market Access Study Participants in Shea Activities

This part of the study collected data on market access among people engaged in shea activities at the study place.

From Table 4 the results showed that, all the study participants (n=384, 100%) revealed that, they all belonged to the shea association or cooperative. The results showed that majority of the study participants (n=279., 73%) revealed that being a member of the cooperative assisted them to get assistance from organization or government agencies who come to purchase their shea products. From the results, (n=321, 84%) study participants cited that being a member of the cooperative helped them to get ready market for shea nut/butter. It was further showed that, (n=295, 77%) study participants said being a member of the cooperative helped them to eliminate transport costs of shea inputs. The results also revealed that, most of the study participants (n=85, 22%) said that being in the cooperative, they were not satisfied with price for processed nuts/butter.

From Fig. 2, majority of the study participants (89%) revealed that, being a member of the cooperative, helped them to sell their shea products soon after production.

From Table 5, there was a statistical relationship between respondents' educational status and effects of cooperatives on market access among women engaged in shea activities. A Pearson product-moment correlation was run to determine the relationship. The result shown a strong, positive correlation between respondent's educational status and effects of cooperatives on market access among women engaged in shea activities, which was statistically significant ($r = 0.025$, $n = 384$, $p = 0.004$).

Table 4. Market access of shea products among participants

Variable	Yes	No
A member of a shea association or cooperative	384 (100.0%)	0 (0.0%)
Assistance from any organization/Government agencies	279 (73.0%)	105 (27.0%)
Available buyers for shea products	295 (77.0%)	89 (23.0%)
Ready market for shea nut/butter	321 (84.0%)	63 (16.0%)
Eliminate transport costs	296 (77.0%)	88 (23.0%)
Satisfied with price for processed nuts/butter	299 (78.0%)	85 (22.0%)

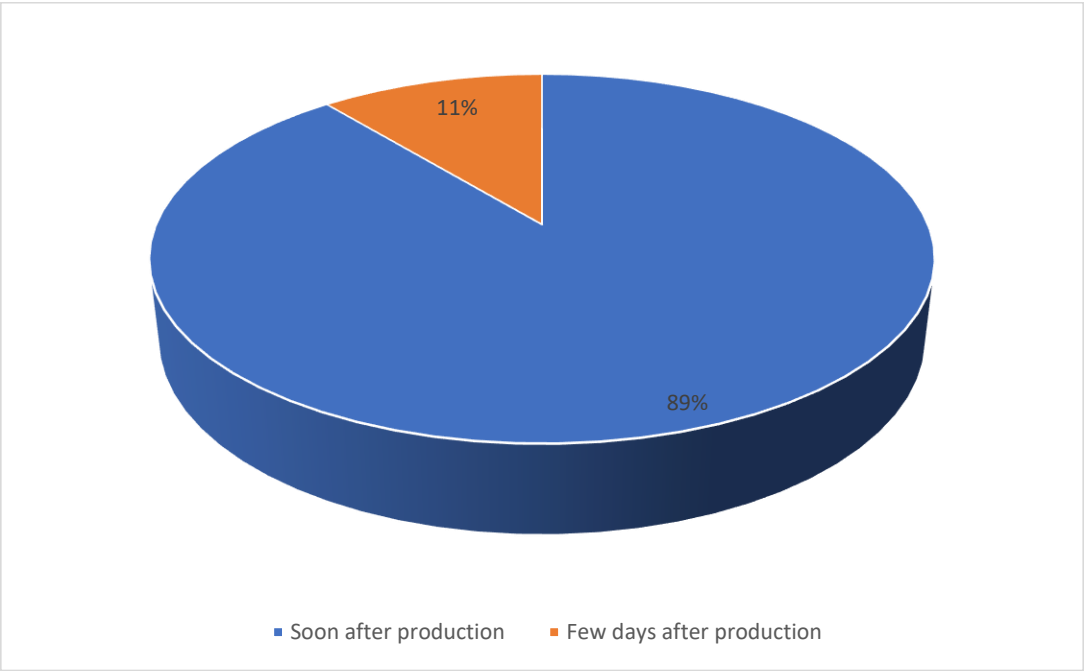

Fig. 2. Frequency of sales of shea products

Table 5. Educational status and effects of cooperatives on market access

			Coverage	Level
Spearman's rho	Coverage	Correlation Coefficient	1.000	0.004
		Sig. (2-tailed)		0.025
		N	384	100.0

Table 6. Factors that undermine the shea cooperatives from accessing markets

Variable	Yes	No
Quality of shea nuts/butter tied to its price	384 (100.0%)	0 (0.0%)
Satisfied with the shea marketing negotiation	279 (73.0%)	105 (27.0%)
High pricing affects shea cooperatives	295 (77.0%)	89 (23.0%)
Lack of proper storage facilities affect shea cooperatives	384 (100.0%)	0 (0.0%)
Seasonal supply nature of the shea nuts affect cooperative	384 (100.0%)	0 (0.0%)

Table 7. Association between demographic data and factors

Variables	χ^2 (value)	COR (95% CI) p-value	AOR (95% CI) p-value
Sex			
Male		Ref.	Ref.
Female	21.5(0.00)	0.2 (0.1-0.5) 0.01	0.2 (0.1-0.4)0.001
Education			
Not educated		Ref	Ref.
Educated	10.3(0.04)	0.6 (0.2-1.4)0.23	1.0 (0.4-2.9)0.10
Category			
Butter extractor		Ref	Ref
Trader	45.7(0.00)	4.1 (0.9-18.5)0.06	2.2 (0.3-17.3)0.05
Marital status			
Single		Ref	Ref
Married	10.5(0.18)	0.3 (0.1-0.8)0.011	0.5 (0.2-1.3)0.14
Age			
26-30		Ref.	Ref.
31 +	49.7(0.002)	1 (0.0-1.2)0.07	0.5 (0.0-8.6)0.03

3.4 Factors that Undermine the Shea Cooperatives from Accessing Markets

The following examines the factors that undermines the shea cooperatives from accessing markets.

From Table 6, all the study participants representing 100% said that the quality of shea nuts/butter was tied to its price. The results also showed that, majority of the study participants representing 77% said the high pricing affected shea cooperatives among shea cooperatives at the study place. The results also showed that, all the study participants cited lack of proper storage facilities as a factor affecting shea cooperatives.

Table 7 shows that sex, category of study participants and age were significantly associated with study participants' knowledge of factors that undermine the shea cooperatives from accessing markets (χ^2=21.5, p=0.001), (χ^2=45.7, p=0.005), (χ^2=49.7, p=0.003) respectively. From the results, females were 80% less likely to have knowledge of factors that undermine the shea cooperatives from accessing markets compared to males [AOR=0.2 (95% CI: 0.1- 0.4), p<0.001], whiles participants who were aged between 31 and above years were 90% less likely to factors that undermine the shea cooperatives from accessing markets compared with 26-30 years [AOR=0.1 (95% CI: 0.0- 0.5, p=0.003].

4. DISCUSSION

In this section, the findings in the previous chapter is discussed and compared with the reviewed literature. The discussions of the results were done based on the study objectives.

4.1 Effects of Cooperatives on Study Participants Access to Shea Production Inputs

This study investigates the impact of cooperatives on women's access to shea producing inputs among the participants in the research location. The findings indicated that a significant majority of the participants, accounting for 75%, said that the presence of individuals involved in the shea business who belonged to a cooperative was beneficial in terms of facilitating their access to a substantial quantity of raw materials. This conclusion contradicts the results of Tanzile's (2023) study, which found that women involved in shea business activities were not aware of the necessity to be a part of a cooperative. It is crucial to emphasize that those involved in the shea sector should get training in commercial, logistical, and technological skills in order to effectively participate in these lucrative supply chains.

The power dynamics inside the Shea home are becoming increasingly intertwined with the emergence of a new set of rituals. These improvements are evolving into established practices that are gradually being incorporated into home management. In order to fully understand how gendered power dynamics are shaped within the Shea household, it is crucial to reevaluate the social framework of the research area and examine how the emerging value chains impact these transformations, particularly for women who have traditionally assumed the role of housewives. This has resulted in a shift in gender norms and perceptions.

The results also suggested that all respondents acknowledged that being in the cooperative provided them with a platform to enhance their production operations. This conclusion from the study aligns with the research conducted by Mhembwe and Dube (2017), which demonstrated that women involved in the shea sector were able to seize opportunities to grow their enterprises. The selling of shea nuts provides money for rural women and impoverished rural households in Northern Ghana, particularly during a period of the year when resources are limited. This significantly lowers poverty in the region. Nevertheless, the inadequate labor force and the difficulty in accessing shea trees hindered the women's ability to enhance their earnings and production, leading to a low level of output.

The data also indicated that a significant majority of the respondents, accounting for 70%, stated that cooperatives facilitate savings on shea inputs. This conclusion corroborates the study conducted by Awo and Agyie-Sasu (2016), where women involved in the shea business disclosed that their main motivation for engaging in this industry was to accumulate funds for shea inputs. The shea value-chain plays a vital role in generating economic activity through the processing and selling of shea products, including the extraction of shea butter. This value-chain provides employment and money for several individuals, mainly rural women.

A significant proportion of women in Northern Ghana are involved in diverse shea-related activities, and the shea business supports the livelihoods of more than two million individuals, either directly or indirectly.

4.2 Effects of Cooperatives on Market Access among Study Participants in Shea Activities

The global popularity of the shea industry is associated with the export of shea commodities on the international market for use in the pharmaceutical and confectionery industries especially as a cocoa butter equivalent in the manufacture of chocolate, margarine, biscuits, soap and other cosmetic products due to the presence of desirable properties such as stearin and the low melting temperatures of shea butter. The study assessed the effects of cooperatives on people access to shea production inputs at the study setting. The results indicated that, all the respondents revealed the positive effective cooperative has on people engaged in shea business activities. It was showed that market cooperatives help people to have access to market information about shea inputs. This finding from the study was not surprising as all the respondents were engaged in shea business and their knowledge might have been informed by the activities of the cooperatives they were found in.

This finding from the study is similar to the study done by Baah-Ennumh (2016) were it was revealed that, people engaged in the shea business and belonged to a cooperative to help them get access to market information about shea production inputs. The shea butter industry is chosen because of its employment and income potential. It is the single most entrepreneurial industry with high value chain ranging from

picking of nuts through processing and to marketing.

But interestingly, Shea butter which was traditionally produced for consumption and for local trading has now assumed new production lines of value chains to an extent that bigger firms are now in to business with the kernel of the Shea nuts attracting international interest in the commodity thereby making the commodity much more valuable than it used to be the results also revealed that, majority of the respondents representing 77% indicated that they belong to the cooperative to be able to get available buyers for shea products. This result further showed that, Ghana is among eight West African nations with significant export of shea products namely Benin, Burkina, Cote D'Ivoire, Mali, Nigeria, Niger and Togo. Ghana earns over 30 million dollars annually from shea exports, and this is projected to exceed 100 million US dollars if the industry if properly managed. This finding from the study disagrees with the study done by Kombiok and Agbenyega (2017) were women engaged in shea business did not know the importance of belonging to the market cooperative.

From the findings, it was also showed that, majority of the respondents representing 84% revealed that, one advantage of being in the cooperative was to get ready market for shea nut/butter. This finding from the study agrees with the study done by Al-hassan (2012) were it was revealed that women engaged in shea business to enable them get access to ready market to their shea product. The shea industry is of tremendous socio-economic value to countries along the shea-belt, providing food, income, employment and offering several domestic and ecological services. Shea butter, the butter extracted from shea nuts constitutes a major source of cooking butter for many households across Sub-Saharan Africa and in Ghana, particularly the northern part of the country.

4.3 Factors that Undermine the Shea Cooperatives from Accessing Markets

In spite of the huge economic potential, the contribution of the shea plant has been constrained by some plethora of challenges that hinder the rapid development of the sector to achieve the needed economic impact. The study examines the factors that undermine the shea cooperatives from accessing markets in the study setting. The results revealed that, all the respondents stated that one of the factors that undermines the shea cooperatives in the study setting was the quality of shea nuts/butter tied to its price. This finding from the study agrees with the study done by Kante et al. (2008) were it was revealed that, women engaged in shea business cited poor quality of the shea nuts as a factor affecting the shea activities.

The results also showed that, all the respondents cited lack of proper storage facilities as a factor that affects the shea cooperatives market access. This finding from the study agrees with the study done by Baah-Ennumh, (2016) were lack of proper storage facilities were considered as a factor affecting people engaged in shea activities. People have argued that, using the shea business help people to make effective sales. The shea business can empower women in all forms to become independent. This can be done through effective utilization of people in all forms.

Many initiatives have tried to address quality and marketing issues at the shea-extraction stages. Specifically, innovations to improve withdrawal processes, have spoken the issue by aiming to reduce inputs (labour, water, fuel wood, etc.) and trying to improve consistency of quality through the use of machines, such as crackers, roasters, grinders, presses and kneaders.

From the results, it was also showed that, all the respondents stated that, seasonal supply nature of the shea nuts affects market cooperative. This finding from the study agrees with the study done by Adekambi et al. (2018) were it was revealed that the seasonal nature of shea business affected people from getting market all the time.

5. CONCLUSION

Based on the findings, study participants were asked to state to effects of cooperatives on access to shea production inputs at the study setting. From the results, it was revealed that all the study participants representing 384 (100%) indicated that cooperative assisted people to get access to market information about shea production. It was also showed that, majority of the respondents 289 (75%) cited that, cooperatives enable people to get raw products of shea in large quantity for productions.

From the results, (n=321, 84%) study participants cited that being a member of the cooperative helped them to get ready market for

shea nut/butter. It was further showed that, (n=295, 77%) study participants said being a member of the cooperative helped them to eliminate transport costs of shea inputs. The results also revealed that, most of the study participants (n=85, 22%) said that being in the cooperative, they were not satisfied with price for processed nuts/butter.

The result showed a strong, positive correlation between educational status and effects of cooperatives on market access among women engaged in shea activities, which was statistically significant ($r = 0.025$, $n = 384$, $p = 0.004$). From the results, females were 80% less likely to have knowledge of factors that undermine the shea cooperatives from accessing markets compared to males [AOR=0.2 (95% CI: 0.1- 0.4), $p<0.001$], whiles participants who were aged between 31 and above years were 90% less likely due to factors that undermine the shea cooperatives from accessing markets compared with 26-30 years [AOR=0.1 (95% CI: 0.0- 0.5, p=0.003].

6. RECOMMENDATIONS

1. Strengthen cooperative governance structures to enhance coordination, bulk marketing, and collective bargaining power. This will ensure better price negotiations and market stability for shea producers.
2. Implement digital platforms (e.g., mobile apps and SMS alerts) to disseminate timely market information on pricing, demand trends, and buyer requirements to cooperative members. This will improve decision-making and reduce market uncertainty.
3. Establish modern storage and processing facilities to improve the quality and shelf life of shea products. This will help address the challenge of seasonal supply fluctuations and ensure consistent market access.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that no generative AI technologies have been used during the writing or editing of manuscripts.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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