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Original article

Cocoa marketing and the socioeconomic development of rural communities: A cross-sectional study of Mabere Sub-County, Bundibugyo District.

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ABSTRACT

Background

This study examined the relationship between cocoa marketing and the socio-economic development of Mabere Sub-County, Bundibugyo District.

Methodology

A descriptive, correlational, and cross-sectional survey design was employed. The study population comprised 3,000 stakeholders involved in cocoa marketing within Mabere Sub-County. A sample size of 341 respondents was selected. Stratified and purposive sampling techniques were applied to ensure representation and relevance. Primary data were collected using questionnaires complemented by a documentary review checklist for secondary data. Quantitative data were analyzed using descriptive statistics.

Results

The study achieved a 73.3% response rate (n=250), with respondents predominantly male (64.8%), aged 31–40 years (48.4%), and mostly married (73.6%). Findings revealed that cocoa marketing in Mabere Sub County is dominated by informal channels, mainly through middlemen (Mean=4.343), with limited cooperative participation (Mean=2.111) and minimal government price regulation (Mean=1.173). Price volatility (Mean=4.087) and high transaction costs (Mean=4.138) were major challenges. Socio-economic indicators were generally low (Mean=2.144), reflecting inadequate income, poor infrastructure, and limited access to healthcare, education, and electricity. Correlation analysis showed a positive and significant relationship between cocoa marketing and socio-economic development ($r=0.462$, $p=0.032$), while regression confirmed a modest yet significant predictive effect ($\beta=0.257$, $R^2=0.611$, $p<0.001$). Additionally, farmers reported low bargaining power, limited market information, and dependency on buyers who dictate prices, further constraining income growth and sustainability.

Conclusion

Cocoa marketing positively affects socio-economic development in Mabere Sub-County, though its impact is modest and statistically significant.

Recommendation

Strengthening cooperative marketing, stabilizing cocoa prices, and improving rural infrastructure to enhance farmers' incomes and promote sustainable socio-economic development in Mabere Sub-County.

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Background of the Study

Cocoa marketing is strongly influenced by global supply-demand dynamics, price volatility, and international trade policies. Cocoa prices fluctuate widely, often leaving smallholder farmers vulnerable to income insecurity. In 2024, prices surged to record highs of ~$12,000 per metric ton due to production deficits in West Africa, creating both opportunities and risks for farmers and traders (RaboResearch, 2024; Financial Times, 2024).

Marketing systems in most producing countries are dominated by intermediaries, which reduce the share of final prices received by farmers. Inefficient supply chains, poor road networks, and weak bargaining power further disadvantage smallholder farmers (Adedayo, 2020). In Bundibugyo, Uganda, marketing challenges are

compounded by poor infrastructure, limited access to credit, and a lack of collective farmer organizations, which weakens farmers' ability to access premium markets.

However, emerging marketing opportunities exist through certification schemes such as Fairtrade, Rainforest Alliance, and Organic, which enable farmers to receive higher prices by meeting sustainability standards. Additionally, farmer cooperatives and associations can enhance market access through collective bargaining, direct contracts with buyers, and participation in niche global markets.

The future of cocoa marketing lies in building efficient value chains that reduce intermediaries, strengthen farmer organizations, promote sustainability certifications, and expand access to international premium markets. This is especially critical for districts like Bundibugyo, where cocoa remains a major livelihood source but where farmers are still constrained by weak market structures. The purpose of this study was to examine the relationship between cocoa marketing and the socio-economic development of Mabere Sub-County, Bundibugyo District.

METHODOLOGY

Research Design.

The study adopted a mixed-methods approach comprising both quantitative and qualitative methods.

Study Setting.

The study was carried out on households within Mabere Sub-County, Bundibugyo District. Mabere Sub-County, Bundibugyo District, is located in the western region of Uganda. The area lies in western Uganda and borders to the north east Ntoroko District, the east Kabarole District, to the south Bunyangabu District, to the south Kasese District, and the Democratic Republic of Congo (DRC) to the west. The study covered a period of 5 years from 2020 to 2024.

Target Population

The study targeted various stakeholders in the cocoa value chain within Mabere Sub-County, Bundibugyo District. These included smallholder, youth, and elderly cocoa farmers; cooperative leaders; licensed cocoa traders; cocoa processors; development partners (NGOs); and extension officers (District Agriculture Officers, Operation Wealth Creation, and NAADS personnel).

Sampling Techniques

The research employed stratified and purposive sampling techniques to arrive at the required sample size.

Research Instruments

The study used three research instruments to collect primary data for the study.

Questionnaire

This was the main data collection instrument. It was used to collect information from farmers and Cocoa Licensed traders. The questionnaires were distributed through physical copies that were taken to the respective farmers in their villages. Further, the study provided clear instructions on how to complete the questionnaires. After two weeks, the study collected completed questionnaires.

Interview Guide

The study scheduled interviews with leaders of cocoa cooperatives, managers of cocoa processing firms, cocoa development partners, and extension officers. These instruments were used to gather more detailed information about the study variables, as these respondents were more knowledgeable about the subject under study.

Documentary Review Checklist

It included key indicators and themes related to cocoa marketing, such as cocoa production levels and trends, market structures and pricing systems, farmer income and household welfare, value chain actors and their roles, access to extension services and inputs, cooperative performance and governance, development partner interventions and outcomes, employment generation and rural livelihoods, government policies and support programs and socioeconomic indicators (education, health, income levels, infrastructure).

Validity of Instruments

The study used both content and face validity to ascertain the validity of the questionnaire. Cooper and Schindler (2008) defined validity as the correctness and capacity of interpretations founded on study findings. A pilot study was conducted to validate the study questionnaire, with an expert in research other than the research supervisor, who evaluated the questions for accuracy and relevance to the study. To ensure greater chances of data validity, the questionnaires were reviewed for expert input.

Reliability of Instruments

A test-retest method was used to assess the reliability of the questions. The study pre-tested the interview questions on a small group of respondents before administering them to the entire sample. The responses from the initial test were compared with those from the second test (retest) to ensure consistency and accuracy, thereby confirming reliability.

Sample Size

Table 1: Target population, Sample Size, Sampling Technique, and data collection methods

Participants	Population	Sample size	Sampling Technique	Data collection methods
Farmers	2552	278	Stratified sampling	Questionnaire
Leaders of Cocoa Cooperatives	100	11	Purposive sampling	Interview
Cocoa Licensed traders	326	35	Stratified sampling	Questionnaire
Managers of Cocoa Processing firms	15	10	Purposive sampling	Interview
Cocoa Development partners	4	4	Purposive sampling	Interview
Extension officers	3	3	Purposive sampling	Interview
Total	**3000**	**341**		

Source: *Bundibugyo District Agriculture Department (2024) and Bundibugyo District Trade and Commerce Department (2024).*

The study adopted Krejcie and Morgan's (1970) statistical table for determining the sample size. A sample of 341 respondents was selected proportionally from the total target population of 3,000 participants. The sample was distributed among stakeholder groups based on their respective population shares.

Specifically, farmers (2,552), who represented the largest portion of the target population (85%), contributed 278 respondents to the sample. Licensed cocoa traders (326), comprising approximately 10.9% of the population, accounted for 35 respondents. Leaders of cocoa cooperatives (11), along with other smaller stakeholder groups such as processing firm managers, development partners, and extension officers, were represented by 17 participants.

Statistical methods

Quantitative analysis

Descriptive statistics such as means and frequency distributions were used to analyze the data. Inferential statistics were also applied to draw conclusions. Data from the questionnaires were analyzed using frequency distributions and percentages to determine respondents' responses. Both qualitative and quantitative methods were employed in the data analysis. The data were first coded and organized into concepts, from which generalizations were made about the entire population. The data were then tabulated, and frequencies were calculated for each variable under study, with interpretations drawn from the field findings in relation to the study objectives.

Qualitative Analysis

In this study, qualitative data were collected primarily through semi-structured interviews with purposively selected participants, including leaders of cocoa cooperatives, managers of cocoa processing firms, cocoa development partners, and agricultural extension officers. The qualitative data were analyzed using thematic analysis, following the six phases proposed by Braun and Clarke (2006): familiarization with data through transcription and repeated reading; generating initial codes both inductively and deductively; searching for broader themes; reviewing and refining themes for coherence; defining and naming themes; and writing the report supported by participant quotes.

Ethical Consideration

i) A research authorization letter was obtained from the School of Graduate Studies and Research.

ii) Participants were asked to consent to participate in the research, with the freedom to choose whether to participate or not. The study explained to the respondents that the information they provided would be used solely for the study and emphasized that meaningful data would be achieved through their contributions.

iii) The study informed the respondents that all data collected in the study would be treated with confidentiality and that the findings were intended for academic purposes only.

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RESULTS

Response Rate

The response rate was obtained using the formula below;

Response rate = $\frac{Collected/conducted}{Issued/scheduled} * 100$

Table 2: Response Rate of the Study

Participants	Questionnaires Issued / Interviews Scheduled	Questionnaires Collected / Interviews Conducted	Response Rate (%)
Farmers	278	200	71.9%
Leaders of Cocoa Cooperatives	11	9	81.8%
Cocoa Licensed Traders	35	29	82.9%
Managers of Cocoa Processing Firms	10	8	80.0%
Cocoa Development Partners	4	2	50.0%
Extension Officers	3	2	66.7%
Total	**341**	**250**	**73.3%**

Source: *Primary data (2025)*

The study achieved an overall response rate of 73.3%, with 250 completed questionnaires and interviews out of a total of 341 issued and scheduled. This response rate is considered satisfactory for academic research in the social sciences and provides a reliable basis for data analysis and interpretation.

Response rates across the various stakeholder groups were as follows; farmers: 71.9% (200 out of 278), leaders of Cocoa Cooperatives: 81.8% (9 out of 11), cocoa licensed traders: 82.9% (29 out of 35), managers of cocoa processing firms: 80.0% (8 out of 10), cocoa development partners: 50.0% (2 out of 4) and extension officers: 66.7% (2 out of 3).

These figures reflect strong participation among most respondent categories, particularly among traders, cooperative leaders, and farmers. The slightly lower response rate among cocoa development partners may be attributed to limited availability or scheduling conflicts during data collection. Nevertheless, the overall response rate ensures that the data collected are sufficiently representative to support the study's objectives and allow for meaningful analysis of the cocoa marketing sector and its socio-economic impact on rural communities in Mabere Sub-County, Bundibugyo District.

Demographic Characteristics of the Respondents

Table 3: Demographic characteristics of respondents

Characteristic	Frequency	Percentage
Gender		
Male	162	64.8%
Female	88	35.2%
Age (years)		
20-30	63	25.2%
31-40	121	48.4%
41-50	47	18.8%
51 & Above	19	7.6%
Marital Status		
Single	31	12.4%
Married	184	73.6%

Separated	25	10.0%
Widow	10	4.0%
Education level		
No formal Education	28	11.2%
PLE	82	32.8%
UCE	64	25.6%
Certificate	68	27.2%
Diploma	6	2.4%
Bachelors	2	0.8%
Experience in cocoa marketing		
Below 2 years	89	35.6%
3-5 years	103	41.2%
6 & above years and above	58	23.2%

Source: *Field data (2025)*

A total of 250 respondents were involved in the study. Gender of Respondents: The findings revealed that the majority of the respondents were male, accounting for 64.8% (n=162) of the sample, while 35.2% (n=88) were female. This indicates that cocoa marketing in Mabere Sub-County is predominantly male-dominated, although a significant proportion of women are also involved in the sector.

Age Distribution: The largest age group was between 31–40 years, representing 48.4% (n=121) of the respondents. This was followed by the 20–30 age group at 25.2% (n=63), the 41–50 age group at 18.8% (n=47), and those aged 51 years and above at 7.6% (n=19). These results suggest that the cocoa marketing sector in the study area is largely driven by individuals in their productive years, particularly those between 20 and 40 years of age.

Marital Status: The majority of respondents (73.6%, n=184) were married, followed by single individuals at 12.4% (n=31), separated individuals at 10.0% (n=25), and widows at 4.0% (n=10). This suggests that most participants are household heads or contributors to family livelihoods, which may influence their engagement in cocoa farming as an economic activity.

Educational Attainment: The analysis of education levels showed that 32.8% (n=82) of respondents had attained Primary Leaving Education (PLE), 27.2% (n=68) held a certificate, 25.6% (n=64) had completed Ordinary Level (UCE) education, and 11.2% (n=28) had no formal education. A small proportion of respondents had higher academic qualifications, with 2.4% (n=6) holding diplomas and 0.8% (n=2) possessing bachelor's degrees. These findings indicate that the majority of cocoa farmers and stakeholders have basic or intermediate education, which may impact their access to information, financial services, and extension support.

Experience in Cocoa Marketing: In terms of experience, most respondents (41.2%, n=103) had been engaged in cocoa marketing for 3–5 years, followed by 35.6% (n=89) with less than 2 years of experience, and 23.2% (n=58) with six or more years. This distribution indicates a growing involvement in cocoa-related enterprises, with a considerable number of relatively new entrants into the sector.

Cocoa Marketing in Mabere Sub-County, Bundibugyo District

Descriptive Statistics on Cocoa Marketing in Mabere Sub-County, Bundibugyo District

This section presents respondents' perceptions and experiences concerning cocoa marketing practices in Mabere Sub-County. Responses were collected using a five-point Likert scale, where 5 = Strongly Agree and 1 = Strongly Disagree. Table 7summarizes the mean scores and standard deviations for various cocoa marketing-related statements.

Table 4: Descriptive Statistics on Cocoa Marketing in Mabere Sub-County, Bundibugyo District

Statement	Mean	Std
We sell out raw cocoa beans	4.610	0.210
We sell cocoa to licensed buying companies	2.436	0.119
We sell cocoa through cooperatives	2.111	0.282
We sell cocoa to middlemen	4.343	0.119
Prices are often negotiated directly with buyers	4.392	0.381
Cooperatives help aggregate our bargaining power	2.198	0.261
Cocoa prices are set by the government	1.173	0.172
Many farmers receive pre-financing or input loans from buyers, with repayment deducted during harvest sales.	2.109	0.126
Cocoa prices are volatile	4.087	0.154
There are high cocoa transaction costs (transportation, storage, and handling)	4.138	0.348
Average	3.160	0.218

Source: Primary data (2025).

The findings indicate that most cocoa producers primarily sell raw cocoa beans, with the statement "We sell out raw cocoa beans" receiving the highest mean of 4.610 (SD = 0.210). This suggests a strong dependence on unprocessed cocoa sales, reinforcing earlier findings that highlight limited engagement in value addition.

Similarly, a high level of agreement was noted with the statements "We sell cocoa to middlemen" (Mean = 4.343, SD = 0.119) and "Prices are often negotiated directly with buyers" (Mean = 4.392, SD = 0.381). These results demonstrate that the marketing system is dominated by informal, direct market channels, particularly through middlemen or local traders. This may be due to immediate cash payments and easier access to these buyers compared to institutional market channels.

The results also highlight cocoa price volatility (Mean = 4.087, SD = 0.154) and high transaction costs (Mean = 4.138, SD = 0.348) as significant concerns among farmers. These factors negatively affect profit margins and may limit farmers' ability to plan for long-term investment in their cocoa enterprises. High transportation and storage costs are particularly relevant in rural, hard-to-reach areas like Mabere Sub-County.

In contrast, selling through cooperatives (Mean = 2.111, SD = 0.282) and licensed buying companies (LBCs) (Mean = 2.436, SD = 0.119) received low mean scores. This suggests that institutional market structures remain underutilized or inaccessible to many farmers. Furthermore, the statement "Cooperatives help aggregate our bargaining power" (Mean = 2.198, SD = 0.261) also scored low, indicating a perception that cooperatives are not significantly influencing market outcomes, or that their operations may be limited in scale and efficiency.

Notably, the lowest agreement was recorded for the statement "Cocoa prices are set by government" (Mean = 1.173, SD = 0.172), which suggests that farmers perceive cocoa pricing as driven by market forces rather than state intervention. This aligns with Uganda's liberalized agricultural market policy, where pricing is largely dictated by supply and demand dynamics, including international market conditions.

The statement "Many farmers receive pre-financing or input loans from buyers, with repayment deducted during harvest sales" also scored low (Mean = 2.109, SD = 0.126), indicating that advance input financing mechanisms remain limited, potentially constraining farmers' ability to invest in productivity-enhancing inputs.

The overall average across all cocoa marketing variables was 3.160 (SD = 0.218), indicating a moderate level of engagement with structured cocoa marketing systems and a high dependency on informal marketing channels.

Qualitative findings on Cocoa Marketing in Mabere Sub-County, Bundibugyo District

To complement the quantitative data, qualitative insights were gathered through semi-structured interviews with 8 key informants: 2 Leaders of Cocoa Cooperatives, 2 Managers of Cocoa Processing Firms, 2 Cocoa Development Partners, and 2 Agricultural Extension Officers.

Using a six-step thematic analysis approach, several recurring patterns and perspectives were identified and organized under four major themes.

Theme 1: Dominance of Informal Marketing Channels

Sub-theme 1.1: Middlemen Control the Market

"Most of our farmers sell to middlemen who come directly to the farms. They pay cash, which is what the farmers need most." (Cocoa Cooperative Leader)

"Middlemen are always available, even during peak harvest. Farmers prefer them over waiting for cooperatives or formal buyers." (Extension Officer)

This theme reflects the strong dependence on middlemen. These informal actors offer convenience, immediate payment, and easy access, even though their prices are often exploitative.

Theme 2: Weak Cooperative Involvement in Marketing

Sub-theme 2.1: Cooperatives Lack Capacity and Trust

"We encourage farmers to sell through the cooperative, but many don't. They complain of delayed payments and low prices." (Cocoa Cooperative Leader)

"Only a few farmers use the cooperative. Most think it's slow and disorganized." (Manager).

While cooperatives are intended to support collective marketing, trust issues, poor management, and limited infrastructure hinder their role.

Theme 3: Cocoa Pricing and Volatility

Sub-theme 3.1: Prices Are Unpredictable and Negotiable

"The prices are always changing. Sometimes buyers offer more, other times they reduce it without warning." (Development Partner).

"There's no fixed price. It's just negotiation. Farmers have no say because they are desperate to sell." (Extension Officer).

Respondents consistently noted price volatility. They also emphasized that direct negotiations with buyers are common, but these rarely favor farmers.

Theme 4: Limited Access to Market Support Services

Sub-theme 4.1: Input Loans and Pre-financing Are Rare

"Few buyers provide advance payment or input loans. Farmers mostly rely on their own savings." (Licensed cocoa buyer).

"We've piloted pre-financing schemes, but they are not yet widespread. There's a lot of mistrust."
(Development Partner 1).

Pre-financing and input loans indicate that contract farming or buyer-supported input schemes are not common in the area. This contributes to low productivity and poor negotiation leverage during harvest.

Socio-Economic Development of Mabere Sub-County, Bundibugyo District

Descriptive Statistics on Socio-Economic Development of Mabere Sub-County, Bundibugyo District

This section presents the descriptive statistics on how cocoa marketing has influenced the socio-economic development of Mabere Sub-County, Bundibugyo District. Respondents were asked to rate various indicators of socio-economic development using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The analysis focused on key areas such as income levels, employment, housing, education, healthcare, infrastructure, and access to services.

Table 5: Descriptive Findings on Socio-Economic Development of Mabere Sub-County, Bundibugyo District

Statement	Mean	Std
We earn sufficient income from cocoa throughout the year	1.829	0.274
It is very easy to find stable employment in our community	2.114	0.352
Most households live in permanent structures	2.017	0.128
We have access to all levels of education	2.325	0.291
We have access to quality healthcare services	1.436	0.206
We have access to clean water	2.193	0.108
Our sub-county has well-maintained access roads	2.314	0.317
The literacy levels are minimal in our area	2.827	0.135
We have access to the internet and the mobile network	1.561	0.432
It is easy for cocoa farmers to access capital	2.610	0.018

We have access to electricity	1.834	0.219
Average	2.144	0.227

Source: *Primary data (2025)*

Income and Employment: The statement "We earn sufficient income from cocoa throughout the year" recorded a low mean of 1.829 (SD = 0.274), suggesting that cocoa farming does not provide consistent or adequate income for most households. Similarly, "It is very easy to find stable employment in our community" had a mean of 2.114 (SD = 0.352), reflecting the limited availability of formal or reliable employment opportunities. These findings align with national rural trends where subsistence farming dominates, and off-farm employment is scarce.

Housing and Infrastructure: The statement "Most households are living in permanent structures" yielded a mean of 2.017 (SD = 0.128), indicating that a majority of households reside in semi-permanent or temporary structures, which is often a proxy for low income. Infrastructural indicators such as access roads (Mean = 2.314) and electricity (Mean = 1.834) also scored low, suggesting limited rural infrastructure development. Poor infrastructure may further contribute to high cocoa transaction costs, as discussed in Section 4.5.

Access to Social Services: Access to key social services remains low, as shown by responses to: access to healthcare (Mean = 1.436), access to clean water (Mean = 2.193), and access to the internet and mobile network (Mean = 1.561). These results point to serious gaps in rural service delivery, which may negatively affect overall well-being and productivity, particularly in remote areas like Mabere Sub-County.

Access to education (Mean = 2.325) and capital (Mean = 2.610) received moderately low scores, highlighting two systemic challenges: limited access to higher levels of education and financial exclusion of smallholder cocoa farmers. These constraints affect the ability of households to diversify income sources or invest in improved farming practices.

Interestingly, the statement "The literacy levels are minimal in our area" had a relatively higher mean of 2.827 (SD = 0.135). Since the item is negatively worded, this suggests that respondents believe literacy levels are moderately low, though not extremely poor. This may reflect the presence of basic education facilities (e.g., primary schools) but limited access to secondary or tertiary education.

The average mean across all socio-economic indicators was 2.144 (SD = 0.227), which reflects a low overall perception of socio-economic development in the community. The findings highlight that despite cocoa being a significant economic activity, it has not substantially improved livelihoods or service delivery in Mabere Sub-County.

Qualitative Findings of Socio-Economic Development in Mabere Sub-County

To complement the quantitative data, qualitative data were collected through semi-structured interviews with eight key informants; Leaders of Cocoa Cooperatives, Managers of Cocoa Processing Firms, Cocoa Development Partners, and Agricultural Extension Officers. The data were analyzed using Braun and Clarke's (2006) six-phase thematic analysis approach. Four major themes emerged from the responses:

Theme 1: Inadequate and Seasonal Income from Cocoa

"Most farmers rely solely on cocoa, but the income isn't enough to support them year-round, especially during off-seasons." (Cocoa Cooperative Leader).

"Prices are unstable and not regulated. Sometimes, what farmers get barely covers input costs." (Extension Officer)

This theme reflects income that is insufficient. Cocoa income is seasonal and unpredictable, leaving many households vulnerable during lean periods. The lack of value addition further limits income potential.

Theme 2: Poor Access to Basic Social Services

"In many villages, there's no health center nearby. Women walk for miles just to access maternal care." (Development Partner).

"We have schools, but many children drop out early because their families can't afford fees or the schools are understaffed." (Extension Officer).

Respondents expressed concern over limited access to health, education, and clean water. These challenges directly impact quality of life and productivity.

Theme 3: Infrastructural Gaps and Poor Connectivity

"During rainy seasons, roads are impassable. This makes transporting cocoa a nightmare and increases post-harvest losses." (Manager).

"Electricity is still a luxury here. Most farmers use kerosene lamps. No power means no value addition." (Cocoa Cooperative Leader).

Rural infrastructural deficit undermines both cocoa production and socio-economic development. Poor infrastructure affects access to markets, schools, and healthcare.

Theme 4: Financial Exclusion and Limited Digital Access

"Farmers don't have access to credit. Banks are too far and require collateral they don't have." (Development Partner).

"Even mobile banking is difficult because many areas lack reliable mobile network coverage." (Manager).

These responses align with the low scores on access to capital (2.610) and digital services (1.561). Financial exclusion remains a major barrier to investment in cocoa farming, while digital exclusion limits access to market information and support services.

The thematic findings support and deepen the quantitative data by illustrating how cocoa farmers in Mabere Sub County; Struggle to earn stable and sufficient income from cocoa alone; Lack access to essential public services, including healthcare, education, and clean water; Are disconnected from reliable infrastructure and modern financial systems; Experience challenges related to digital and mobile communication, making it harder to engage with modern markets and support services.

Despite the centrality of cocoa farming, these conditions suggest that cocoa alone, particularly when sold in raw form with minimal value addition, has not transformed the socio-economic landscape of Mabere Sub-County.

Documentary Findings on Socio-Economic Development of Mabere Sub-County, Bundibugyo District

The study conducted a documentary review to complement primary data on the socio-economic development status of Mabere Sub-County. Sources included district development reports, government statistics, NGO project reports, census data, and agricultural sector performance reviews. The findings are summarized under key thematic areas:

Income and Livelihood Sources: According to the Bundibugyo District Development Plan (DDP III, 2020/21–2024/25), over 80% of households in rural sub-counties like Mabere depend on smallholder agriculture, particularly cocoa, for their livelihood. However, the plan highlights seasonal income fluctuations and price instability in the cocoa market as persistent challenges. The UBOS 2019/20 National Household Survey also indicates that more than 60% of households in the Rwenzori sub-region earn less than UGX 10,000 per day, aligning with respondents' views that cocoa income is inadequate and unreliable throughout the year.

Access to Basic Social Services: The 2021 Bundibugyo District Health Sector Performance Report showed that only 46% of the population had access to functional health centers within a 5 km radius, while staffing levels in rural facilities were below 60% of the national standard. This confirms the primary data finding (Mean = 1.436) that access to healthcare is severely limited.

In terms of education, the District Education Department Report (2023) revealed that dropout rates in rural primary schools are above 30%, primarily due to poverty, long distances to schools, and poor infrastructure. This aligns with the low rating of access to all levels of education (Mean = 2.325) reported by respondents.

Infrastructure and Utilities: The Bundibugyo District Infrastructure Profile (2022) notes that only 35% of feeder roads in the district are motorable during the rainy season, and rural electrification coverage in Mabere Sub-County is below 15%. The Rural Electrification Agency (REA) also reported that most cocoa-producing households in Bundibugyo rely on firewood and kerosene for energy, which severely limits the potential for value addition and post-harvest processing. This is consistent with the low mean scores on electricity (1.834) and road access (2.314) in the survey findings.

Digital and Financial Inclusion: The Uganda Communications Commission (UCC) 2022 Report highlighted that mobile and internet penetration remain low in remote areas like Mabere, with coverage estimated at below 40%. This digital divide limits access to mobile money, agricultural apps, e-extension services, and market price updates.

On financial inclusion, the Bank of Uganda Financial Capability Survey (2021) found that only 18% of adults in rural Bundibugyo had access to formal financial services, and most cocoa farmers operate without access to credit, insurance, or savings schemes. This supports the findings on limited access to capital (Mean = 2.610) and digital infrastructure (Mean = 1.561) from primary data.

Housing and Living Conditions: According to the 2021 Uganda National Housing Survey, the majority of households in Bundibugyo rural areas (including Mabere) still reside in semi-permanent structures, often lacking proper sanitation, piped water, or permanent roofing materials. This matches the mean score (2.017) for the item "Most households are living in permanent structures," reflecting poor living conditions despite engagement in cocoa farming.

Literacy and Human Capital Development: The UBOS Education and Literacy Report (2022) stated that adult literacy rates in Bundibugyo were approximately 62%, slightly below the national rural average of 68%. While basic literacy exists, functional and digital literacy remain low. This supports the moderate mean (2.827) found under the indicator "The literacy levels are minimal in our area," suggesting that while education services exist, their quality and outcomes remain inadequate.

The documentary review confirms and reinforces the results obtained from questionnaire surveys and key informant interviews. The evidence from government and development partner reports paints a clear picture of underdevelopment, despite cocoa marketing being the main

economic activity. Key challenges include: unstable and insufficient income from cocoa, inadequate access to quality health, education, and financial services, poor infrastructure (roads, electricity, water), limited human capital development, digital exclusion, and Cocoa Production.

Correlation Findings

Table 8 presents the correlation results between the independent variable, Cocoa Marketing, and the dependent variable, Socio-Economic Development in Mabere Sub-County, Bundibugyo District. The analysis was conducted using Pearson's correlation coefficient (r) to determine the strength and direction of the linear relationships between the variables.

Table 6: Correlation Findings

		Cocoa Marketing
Socio-Economic Development	Pearson Correlation Coefficient	0.462*
	Sig. (2-tailed)	.032
	N	250

Source: Primary data (2025)

This result indicates a strong positive correlation between cocoa production and socio-economic development.

The correlation between cocoa marketing and socio-economic development is positive but weak to moderate (r = 0.462). The p-value (0.032) indicates this relationship is statistically significant, although weaker compared to cocoa production and value addition.

This may be due to the existing challenges in cocoa marketing reported in the descriptive analysis, such as price volatility, dominance of middlemen, and limited cooperative influence. These factors likely constrain the marketing potential to significantly drive socio-economic growth.

Regression Analysis of Cocoa Marketing and the Socioeconomic Development of Mabere Sub-County, Bundibugyo District

To determine the combined influence of cocoa marketing components on socio-economic development, a multiple linear regression analysis was conducted with Cocoa Marketing as the independent variable and Socio-Economic Development as the dependent variable.

Table 7: Regression Findings of Cocoa Marketing and the Socioeconomic Development of Mabere Sub-County, Bundibugyo District

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t-value	Sig. (p-value)
(Constant)	0.712	0.204		3.490	0.001
Cocoa Marketing	0.214	0.095	0.257	2.253	0.027*

Source: Primary Data (2025)

R = 0.782
R^2 = 0.611
Adjusted R^2 = 0.596
F (3, 96) = 29.36
Sig. = 0.000

The regression model was found to be statistically significant (F = 29.36, p < 0.001), indicating that the combination of cocoa production, cocoa value addition, and cocoa marketing significantly predicts socio-economic development in the study area. The coefficient of determination (R^2 = 0.611) suggests that approximately 61.1% of the variance in socio-economic development is explained by the three predictor variables. The adjusted R^2 (0.596) confirms the model's generalizability to the broader population.

Cocoa marketing had a positive but weaker effect on socio-economic development compared to the other two predictors, with a standardized beta coefficient of β = 0.257 and a p-value of 0.027. The unstandardized coefficient (B = 0.214) indicates that improvements in marketing systems yield modest yet significant gains in socio-economic development. The descriptive statistics earlier pointed to challenges such as price volatility, reliance on middlemen, and low cooperative engagement, which may limit the full potential of marketing as a development driver. Nonetheless, structured markets and improved access to fair trade can still positively influence rural livelihoods.

DISCUSSION

Cocoa Marketing and Socio-Economic Development Mabere Sub-County, Bundibugyo District

The analysis reveals a positive but relatively weak to moderate correlation (r = 0.462) between cocoa marketing practices and socio-economic development in rural cocoa-producing areas, indicating that while marketing structures contribute to improved livelihoods, their impact is less pronounced than direct production or value addition activities. Institutional frameworks such as Ghana's COCOBOD, which maintains price stabilization and export control mechanisms, provide farmers with predictable incomes and reduce market volatility (Ghana Cocoa Board, 2025). This pricing stability allows rural households to better plan and invest in their basic needs, mitigating risks associated with commodity price fluctuations.

Advanced value chain collaborations (VCCs), involving partnerships among private buyers, NGOs, and government agencies, have shown greater success in generating positive socio-economic outcomes compared to traditional transaction-based marketing systems (Deans et al., 2017). Programs like the Côte d'Ivoire–Ghana Cocoa Initiative (CIGCI) that offer price premiums seek to increase farmer revenue and incentivize sustainable practices (CIGCI, 2025). Similarly, certification schemes such as Fair Trade and Rainforest Alliance provide minimum price guarantees and development premiums that support education, health, and gender equity programs (Jackson & Balema, 2020).

Despite these positive trends, persistent challenges reduce the overall developmental impact of cocoa marketing. Women and sharecroppers frequently face barriers to accessing training, certification benefits, and premium payments, perpetuating inequality within rural communities. Furthermore, governance gaps in certification schemes result in uneven socio-economic outcomes for farmers (Grabs et al., 2025). Additionally, cocoa marketing intersects with environmental issues, where low incomes remain a major driver of deforestation and child labor (Reuters, 2024).

Ultimately, while cocoa marketing systems with guaranteed pricing, long-term contracts, and premiums contribute to income stability and social upgrading, their moderate correlation with socio-economic development suggests that marketing alone cannot fully transform rural livelihoods. Effective socio-economic advancement requires integrating marketing interventions with improvements in production efficiency, value addition, institutional capacity, and inclusive governance.

Conclusion.

While cocoa marketing also positively influences socio-economic development, its impact is comparatively weaker but statistically significant. This suggests that although access to stable markets, pricing mechanisms, and certification schemes support income stability and resilience, challenges remain in fully realizing the potential benefits of marketing structures at the local level.

Recommendations

Invest in Rural Infrastructure Development; Improving rural infrastructure is critical for reducing transaction costs and enhancing access to markets and services. Priority investments should include upgrading feeder roads to ensure year-round accessibility, expanding rural electrification programs to enable agro-processing and improve living standards, and enhancing water supply systems. These infrastructure improvements will not only support cocoa production and marketing but also improve the overall quality of life.

Improve Access to Basic Social Services; Efforts must be made to increase the availability and quality of healthcare, education, and clean water in Mabere Sub-County. This can be achieved through partnerships between the government, NGOs, and development agencies to establish more health centers within accessible distances, improve staffing and medical supplies, and expand clean water infrastructure. Additionally, supporting educational institutions to reduce drop-out rates, including through school fee subsidies and community awareness programs, will strengthen human capital development.

Promote Financial and Digital Inclusion; Addressing the financial exclusion of cocoa farmers is essential for enabling investment in farming inputs and value addition. Financial institutions and development partners should work to increase rural access to credit, savings, and insurance products tailored to smallholder farmers' needs. Expanding mobile network coverage and promoting digital literacy programs will enable farmers to access mobile banking, agricultural information, and market price updates, empowering them to make informed decisions and improve their market participation.

Areas for further Research

i) Sustainable Cocoa Farming Practices and Environmental Impacts

Investigating the adoption rates, benefits, and challenges of climate-smart agriculture and agroforestry in the cocoa sector could inform strategies to enhance environmental sustainability while improving productivity and livelihoods.

ii) Infrastructure Development and Market Access

Research assessing how improvements in rural infrastructure (roads, electricity, water) specifically affect cocoa marketing efficiency, post-harvest losses, and

farmer incomes would provide evidence to prioritize investments.

iii) Youth Engagement in Cocoa Marketing
Understanding the motivations, barriers, and opportunities for youth participation in cocoa farming and associated enterprises could inform policies to attract younger generations and ensure sector sustainability.

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List Of Abbreviations
COCOBOD – Ghana Cocoa Board
FAO – Food and Agriculture Organization (of the United Nations)
UBOS – Uganda Bureau of Statistics
UNDP – United Nations Development Programme
VCCs - Advanced value chain collaborations

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Author biography;
Nathan Masereka, a student pursuing a Bachelor's degree or a Master of Project
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