Original Research Article

Mobile Money Technology andSheabutter Marketing in the Tolon District of Ghana

Abstract

Sheabutter processing and marketing is a major traditional enterprise among women in the Northern Region of Ghana. The use of mobile technology has increased rapidly in many developing countries including Ghana. Lookingat the unique marketing and other forms of transactions among women in the shea industry, it is essential for the industry to adopt mobile technology to ensure smooth transaction and market transformation.This study sought to relate mobile money technology adoption to shea butter marketing among women in the Tolon District of Northern Ghana using data from cross-sectional survey of 250 women sheabutter processors and marketers in 13 communities in the district. The impact of mobile money technology adoption was analyzed using the Heckman Treatment model, which revealed that mobile money technology adoption has a positive impact on sheabutter marketing. The factors influencing the mobile technology adoption were also examined with the Probit model, which revealed that ownership of mobile phone, marital status, number of years spent in school, age, among others are the factors that influence the adoption of the technology among women processors and marketers. In addition, Kendall's concordance analysis was used to examine the constraints of sheabutter processers and marketers, as well as adoption of mobile money technology. The results showed that difficulty in accessing credit to expand sheabutter production was the most ranked constraint and high cost of storage of sheabutter ranked the least constraint to sheabutter processing and marketing. However, lack of technical know-how of using mobile money was the most ranked constraint, with lack of mobile phone being the least constraint to mobile money technology adoption. The study recommends expansion of mobile technology networks, increased investment in education, provision of credit facilities, FBOs can make services relevant and attractive in the shea industry to increase production. Women processors in rural communities should be trained on how to use mobile phones to access financial services by telecommunication companies and NGOs.

Keywords: Mobile Money Technology, Sheabutter Marketing, Constraints, Tolon District.

Introduction

Butter is a fatty Shea extract from the Shea tree's seed. The Shea tree, also known as *Tharate*, grows wild in West Africa's dry Savannah area, from Senegal in the west to Sudan in the east, and into the Ethiopian highlands' foothills (Elia, 2017). The Shea tree is a native and important economic and social asset in most African countries (Lovett, 2013), with a concentration in Ghana's northern savannah areas (Aniah et. al., 2014). The number of wild Shea nut trees in Ghana is projected to be 9.4 million, with the majority of them grown in Northern Ghana (Elias 2013). The Shea tree may be found practically everywhere in Northern Ghana, with 77,670 square kilometers in Western Dagomba, Southern Mamprusi, Western Gonja, Lawra, Tumu, and Wa (Al-hassan, 2015).The Shea tree grows primarily in Ghana's Northern, Upper East, and Upper West regions, with some portions of the Brong Ahafo providing raw materials for the Shea butter industry. The Shea butter sector acts as a crucial channel to escape the poverty trap for women who are forced to labor to supplement family income. It provides them with the opportunity to earn a living (Collins, 2014).Shea nuts play important socio-economic role in Ghana in terms of employment and income generation to a significant proportion of rural population especially women who are, directly involved in shea nut collection and butter extraction.Women are the industry's backbone, and they are mostly involved in the first phases of gathering and processing Sheanutss and butter (Emily, 2015). Majority of women in Northern Ghana rely on the sales of Shea butter and other Shea-related items for their daily livelihood (United Nations Development Programme 2017). The production of Shea nuts and butter is the largest source of revenue for many women, rendering Shea processing extremely important to local communities (Collins, 2014). The sheabuter has economic and health benefits to the

growing populace in most African countries including Ghana (Aniah et. al., 2014).According to the Global Shea Alliance, the majority (90%) of processed shea butter goes to the food and cosmetics industry. Aside using thebutter from the Shea nut in cooking different dishes in most various homes in the North of Ghana, it also serves as hair treatment products for damaged and dry hair, face- and body-moisturizing creams, treatment for insect bites and stings and baby care products against diaper rash.Although shea butter processing is an appropriate indigenous traditional industry that could highly support sustainable development of Northern Ghana, financing is one of the biggest constraints affecting entrepreneurs involved in the processing and marketing of sheabutter (Pufaa, 2013).Finance could be a major constraint to expanding shea butter exports from West Africa (Holtzman, 2004). The financial constraints faced by Sheabutter producers arise from two major dimensions; inadequate production and marketing capital and deficient financing mechanisms accessed by shea butter producers (Pufaa, 2013). Therefore, an economical way to mitigate these financial constraints is the introduction and adoption of Mobile Money Technology in the Sheabutter processing and marketing industry. Introduction and adoption of financial technologies globally has helped businesses attain growth which in turn improved the standard of living of people. However, none of these financial technologies adoptionhas much influence on agribusiness value chainin most developing countries (Abdul-Rahaman &Abdulai, 2021).Human existence has been sustained largely by communication, from the early days of letter writing to the usage of advanced forms of telecommunication devices such as mobile phones(Jack & Suri, 2010).The mobile phone has proven to be a very relevant tool which has a very high level of acceptance among producers and consumers in many countries (Masamila, Mtenzi, Said, &Tinabo, 2010). Mobile money adoption among value chain actors can offer significant opportunities for the development in the agribusiness value chain.

Aside providing opportunities for savings, especiallyin socially volatile and risky environments (Beck et al., 2018), it allows for a reliable business transaction among agribusiness valuechain actors, reduces transaction costs, and facilitates market exchange (Jack & Suri, 2011; Kikulwe et al., 2014; Shambare, 2011).Reports indicate that as at 1998, the population in Ghana that had access to mobile phones was less than 1% and this number grew immensely to 55% over a decade (GSMA, 2009). The Wireless Intelligence (2012) reported that mobile phone adoption and usage had increased tremendously from 150 thousand mobile phone subscribers in 2000 to 11 million subscribers by the end of 2009. This widespread usage of mobile phones has generated a lot of competition amongst telecommunication network service providers and has driven the engineering of services which help them to remain relevant and capture market share. The GSMA (2017) report indicated that, "there were about 30 million active users of mobile money services globally and that 56.9 million people have opened mobile money accounts in Sub-SaharanAfrica. Ghana currently has four communication companies (MTN, Airtel, Vodafone, and Tigo) that are involved in renderingmobile money payment services to the public(Roberts, 2016). MTN has (46%) share in terms of mobile money subscriber services, followed by Vodafone (27%) and then Tigo (14%). The remaining market share is captured by Airtel, GLO (NCA, 2015). The mobile money service serves as a medium for the payment of bills, person-to-person transfers (P2P), government-to-person (G2P) transfers, payment of services such as public transport and so much more (Gutierrez & Choi, 2014).A study by Djurfeldt et al. (2013) revealed that men and women tend to have unequal access to modern technologies and inputs and is a major cause for low productivity among women in the agribusiness value chain. Considering the fact that women dominate the shea industry, it is therefore relevant to explore their ability to access the financial technologies available most

especially the mobile money technology, how they can harness the power it comes with to improve sales, safely transfer money and receive payments. Mobile Money provides financial inclusion to smallholder farmers who are excluded from the formal finance system, as well as informal sectors with low returns and low market demand(Abdul-Rahaman & Abdulai, 2021). As a result of these, Mobile Money is progressively becoming a key mode of payment for Ghana's unbanked and underserved population (Boateng, 2011).The extent to which Mobile Money adoption promotes reliable money transfers in the marketingand processing of shea butter among value chain actors, would justify its upscale and extension for policy goals. There has being Mobile Money adoption rate of 70% among marketers and producers in the agricultural value chain (National Communication Authority, 2016). This study therefore intends to examine the factors influencing mobile money technology adoption and its impact on sheabutter marketing among women processors in the Tolon District. Sheabutter processing is one of the most important typical traditional enterprises and the main source of income for most rural women in Northern Ghana. Most women in Shea butter producing communities in northern Ghana are usually exposed to hazards like scorpion and snake bites during the harvest season andhave problems in marketing of the product (Lulla, 2017). Aside the challenges the women and children go through whiles picking and carrying the nuts, financial and logistical exclusions with limited markets contributed to high poverty rates in Northern Ghana (Global Shea Alliance (GSA), 2017).The integration of African Smallholder farmers into global commodity Shea butter chains is often portrayed as an engine for rural economic transformation.Shea butter production and marketing is one of the most important typical traditional enterprises and the main source of income for most rural women in Northern Ghana (Pufaa, 2013). Yet, it is not left out of the financial and marketing challenges faced by many small and medium scale enterprises (SMEs) in

Ghana (Pufaa, 2013). Inadequate and deficient financing systems for Shea butter production and marketing, coupled with limited and undeveloped markets contribute to high poverty rates in Northern Ghana. Shea butter can have a competitive market both locally and internationally and can stimulate economic growth ifmeasures are taking to increase the adoption rate of mobile money technology among the shea value chain actors inthe Tolon District of northern Ghana. Mobile money technology adoption has significant role to pay in promoting financial inclusion and stimulate economic growth in Ghana (Bank of Ghana [BoG], 2017).Despite the significant role mobile money adoption plays among the actors in the agricultural value, most shea butter traders have not being able to take advantage of the mobile money technology due to numerous challenges including lack of access to mobile money services, lack of sufficient funds as a result of economic hardships(poverty) and low standard of living. These rural traders are vulnerable and areunable to adopt reliable form of transferring money during business transaction.The shea value chain actor'sadoption of mobile money technology can stimulate market demand and manage risk of transacting business effectively. This is possible especially in situations where inputs may be purchased and payments made at a later date.(Kikulwe et al., 2014).For instance, when a potential customer demands a particular quantity of shea butter and due to some circumstance at that moment has no physical cash and insist on mobile payment or wants payments made at a later date, a trader who does not use the Mobile Money technology is bound to lose such a customer to the one who does. Also, in the situation of contractual agreement between a shea butter trader and a processing company, outstanding arrears after a successful transaction can be remitted to the trader otherwise additional cost is incurred which will reduce the total profit.Economized purchase and receipt, in particular, is essential for breaking the cycle of financial exclusion on the part of small-scale entrepreneurs particularly

rural shea butter traders. Creating a conducive atmosphere for marketing could be part of the solution to this developmental dilemma, in which Mobile Money adoption is critical.Mobile Money services provide a convenient means for small-scale enterprises to transfer money, but policy makers are skeptical about the factors that influence traders to adopt the technology as well as the impact of the adoption on small scale entrepreneurs' livelihoods. As a result, empirical answers to some questions are needed to advise policy on the impact of Mobile Money serviceson the shea marketing. Several studies have examined the effects of this technology over the past decade. For example,Abdul-Rahaman and Abdulai (2021) examined the link between Mobile Money adoption and smallholder farmers input use and output. However, this study seeks to look into the effects of Mobile Money technology adoption on Sheabutter Marketing in the Tolon district of Northern Ghana. Specifically, the study seeks to examine the factors that influence mobile money technology adoption among women sheabutter processors, as well asthe impact of mobile money technology adoption on sheabutter marketing among women processors in the Tolon District of Northern Ghana.

Methodology

The study was carried out in 13 communities in the Tolon District of Northern Ghana which is located between the West Mamprusi and Central Gonja districts. It is about 14.5km away from Tamale (Abdulai, 2019). The main vegetation is classified as vast areas of grassland, interspersed with the guinea savannah woodland, characterized by drought resistant trees such as acacia, baobab, shea nut, dawadawa and neem, (Government of Ghana, 2018).

The population of the Tolon District according to the 2021 Population and Housing Census, is 110,101 representing about 2.9 percent of the region's total population. Males constitute 49.8 percent and females represent 50.2 percent. Almost ninety percent (88.4%) of the population is

rural. The total age dependency ratio for the district is 96.5, the age dependency ratio for males is higher (103.2) than that of females (90.2) (PHC, 2021). More than eight out of ten (80.5%) of the population aged 15 years and older are economically active. Of the economically active population, 97.7 percent are employed while 2.3 percent are unemployed. For those who are economically not active, a larger percentage of them are students (37.2%), 28.3 percent perform household duties and 26.7 percent are disabled or too sick to work. Almost half (44.8%) of the unemployed are seeking work for the first time (PHC, 2021). Of the employed population, about 88.8 percent are engaged as skilled agricultural, forestry and fishery workers, 4.7 percent in craft and related trades workers, 3.3 percent in service and sales, only 1.6 percent engaged as managers, professionals and technicians.Of the population 15 years and older, 57.4 percent are self-employed without employees, 35.1 percent are contributing family workers, 2.7 self-employed with employees, 0.8 percent are casual workers. Only 0.9 percent are domestic employees (house helps). Overall, men constitute the highest proportion in each employment category except casual worker, contributing family worker and apprentice. The private informal sector is the largest employer in the District, employing 97.0 percent of the population followed by the private formal with less than two percent (PHC, 2021).

Of the population 12 years and above, about 15.7 percent have mobile phones. Men who own mobile phones constitute 24.2 percent as compared to 7.5 percent of females. About 2.3 percent of the population 12 years and older use internet facilities in the District (PHC, 2021).

Sampling Procedureand Data Collection

This study employed a multistage sampling procedure in selecting the sample. The Tolon district was purposively selected based on the intensity of sheabutter processors in the area. 13 sheabutter producing communities were also purposively sampled due to the concentration of

sheabutter women processors in these communities. Simple random sampling was then used to select a total of 250 women sheabutter processors for the survey. These women were interviewed using a structured questionnaire on information such as sheabutter production and marketing, mobile phone and mobile money usage, processing and household information.In order to assess the impact of Mobile Money adoption on the sheabutter marketing, this study employed the quasi-experimental and cross-sectional survey designs to collect data on shea processors and marketers. Quantitative questionnaire, face-to-face interviews were used for gathering data. On data coding and entry, both Stata and SPSS wereused.

Method of Data Analysis

Probit Model

The decision to adopt Mobile Money technology depends on observed characteristics of the woman processor such as household size, age, educational level among others. The binary dependent variable, y (adoption decision) takes on the values zero (0) and one (1). In particular, the binary probit model, *adoption* can take on a value of one (1) while non-adoption takes zero (0). The analysis providesstatistically significant findings of which factors increase or decrease the probability of adoption. The basic assumption is that the i^{th} processor obtains the maximum utility from the adoption rather than non-adoption. "The probit model assumes that while we only observe the values of 0 and 1 for the variable Y, there is a latent, unobserved continuous variable Y* that determines the value of Y"(Sebopetji and Belete, 2009). It is important to mention that the Ordinary Least Square (OLS) method is not suitable for this study because the discrete nature of some of the dependent variables. The other advantages of the probit model include believable error term distribution as well as realistic probabilities (Nagler, 1994). Thus, for this study the probit model is preferred and used. This study uses the probit model to

determine the factors influencing mobile money technology adoption among women sheabutter processors in the Tolon district. Given the response variable Y is binary; with only two possible outcomes 1 and 0, consider a vector of regressors X which are assumed to influence Y. the binary probit model is simplified below:

$$Pr(Y^*=1/X) = Ø\ (X^1\beta) = Y^* = \beta_0 + \beta x_{1\ +}\ \mu_{1;}$$

Where, Pr is probability (1=MoMo adopter; 0 non adopter)

Ø is cumulative density function

B is coefficient to be estimated

Y* is dependent variable

X is explanatory variables

μ is random disturbance term

1 denotes adopter; 0 non adopter

The probit model for this study is specified as:

$$Y^*_{I\ =}\beta x_1 + \beta x_2 + \beta \times_3 + \ldots + \beta \times_{ki}$$

Where Y* = MoMo adoption (1 for adopter, 0 for non-adopter), x1 = age of processor; x2 = number of years spent in school; x3 = phone ownership; x4 =distance to MoMo vendor; x5 = processing group; x6 = training; x7 = Access to credit. β is unknown parameters to be estimated (Naglar, 2002).

Heckman Treatment Model

The model is a two-stage procedure of theoretical framework for analyzing a sample. The first stage is the estimation of adoption and the second stage is estimation of the outcomes (of the adoption) (Adeoti, 2009). In the first stage, mobile money technology adoption by respondents is the dependent variable (dummy) and the second stage has the dependent variable, total sales, as continuous in nature.The Heckman model is used to eliminate selection bias so that unbiased casual effects can be estimated. It makes assumptions about the relationship between two equations in an underlying behavioral model which are; a response schedule and a selection function. The model is however sensitive to the choice of variables included in the selection function which is demonstrated in the estimation of the impact of MoMo adoption on sheabutter marketing in this study. The stages are as follows;

First stage:

Adoption (Q) = $\beta_0 + \beta iXi + \varepsilon_i$(1)

Where Q= MoMo Account (1=yes, 0=no)

Second stage:

Total sales= $\beta_0 + \beta_1 X_i + \beta_2 X_{ii} + \beta_3 \lambda_i + \xi_i$(2)

Sociodemographic Characteristics of Respondents

As stated earlier, the total sample size for this study is 250, all female. This is because sheabutter processing and marketing in the Tolon district in Northern Ghana is predominantly women activity/enterprise.Table 1 revealed that 2.80% of the total sample were between 18-25 years old, 38.40% were aged between 26-35 years old, and 38.40% were between 36-45 years old as well.

18.40% of them were between the ages 46-55 and 2% were 65 years old and above. 75.20% have no formal education and only 24.80% of the women had formal education with only 1.6% of them having tertiary education. The illiteracy rate, although has reduced a bit according previous studies, is still high. It is therefore important to initiate non-formal education programmes to help the women to keep simple records and as well respond to accounting demands of their economic activities (See fig. 2).The survey also revealed that 94.8% wereDagombas, 2.4% wereMamprusiand 2.8% were Gonjas by tribe (See fig. 1). A greater number of the respondents, 83.60% were married, 2.80% unmarried, 2.80% divorced and 10.80% widowed. About 64.40% were in polygamous families while 35.30% were in monogamous families. Only 2% of the households were reported to beheaded by women whilst 98% are headed by men.

Table 1: AGE DISTRIBUTION OF RESPONDENTS

Age	Frequency	Percentage	Cum.freq
18-25	7	2.80	2.80
26-35	96	38.40	41.20
36-45	96	38.40	79.60
46-55	46	18.40	98.00
56+	5	2.00	100
Total	250	100	

Source: field survey, 2022

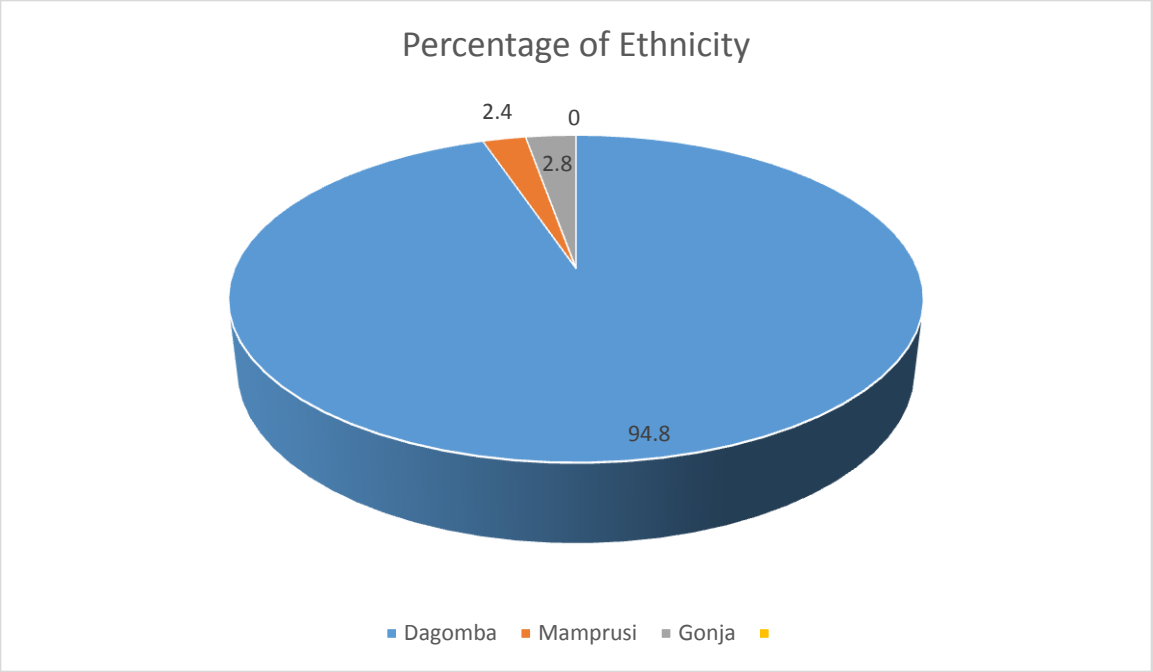

Figure 1: Ethnicity of respondents

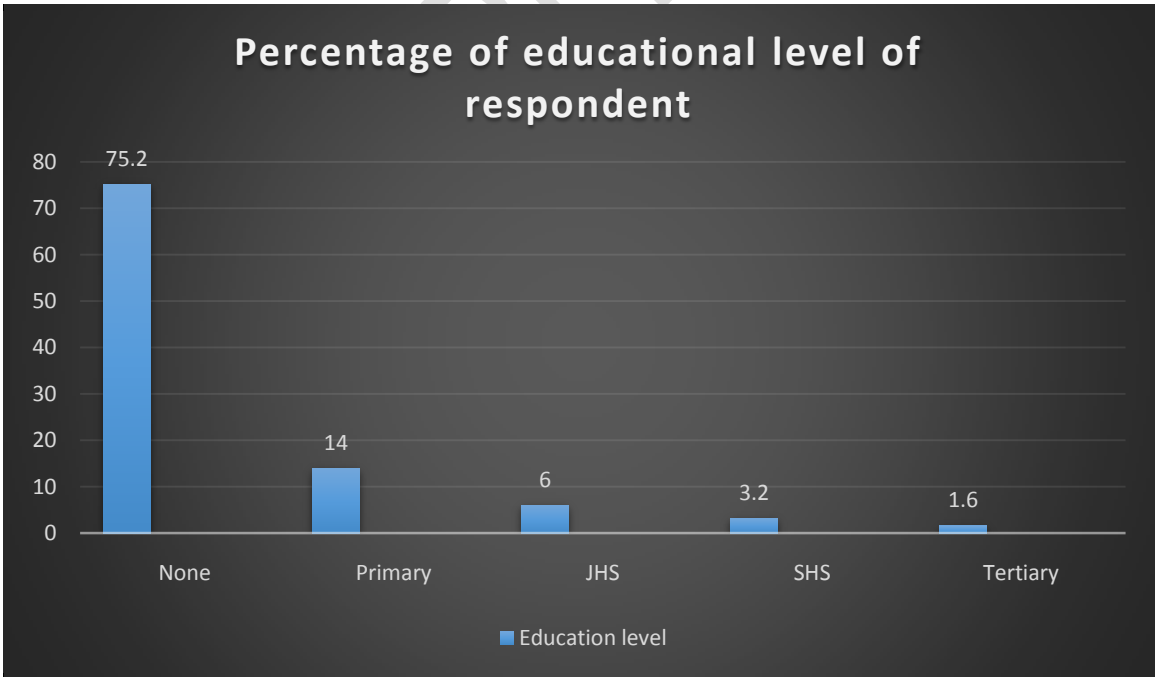

Figure 2: Educational level of respondents

Socioeconomic Characteristics of Respondents

Majority 78.40% of the respondents indicatedthat sheabutter processing and marketing as their major occupation whilst the remaining said its their secondary occupation. Eleven (11) respondents said farming was their major occupation, nine (9) rice processing and the remaining said others.Majority of the respondents, 80.40% did not have access to credit to support activities. 19.60 % of the respondents however said they had access to credit to support their activities. Of the 19.60%, 11.20% said they received the amount they applied for while the rest received different amounts than applied. The credit amount ranged from 200ghc to 800ghc with 8.80% of the 19.60% receiving 600ghc. All credits were received in cash rather than via mobile money, in-kind etc.

Table 2: Occupational Distribution of respondents

Major occupation	**Frequency**	**Percent**	Cumulative Percent
Sheabutter	196	78.40	78.3
Others	54	21.70	100.0
Total	250	100.0	

Perception of Women Processors about Mobile Money Use

The results of the perception of women processors about Mobile Money use are presented in Table 3.The results show that the women processers are aware about the mobile money technology, even those who are illiterates. However, their perceptions about the technology varied greatly and seemed to show some lapses in their responses which suggest that they are

deficient in knowledge in some aspects of mobile money. For instance, respondents had the likelihood to strongly agree or agree with most questions but yet still, there existed a substantial number of respondents who either strongly disagreed or said they did not know. This in it is entirety depicted gaps in the level of understanding of respondents about some key aspects of mobile money. For example, the technologyis safe and simple to use recorded a very low mean score of ($\bar{\mathbf{x}}$=3.78). A very large group of respondents answered 'I don't know' to this particular question, this meant that they were clueless of the fact that the technology is actually safe and easy to use when mastered.

Based on the percentage count of respondents, 3.60%**strongly disagreed** that mobile money is safe and simple to use, the technology is safe and secured had**disagree**percentage of 12.12% and 22.09% responded **neutral** to Mobile money enables me to reduce operational cost in my marketing. 49.60% **agreed** that Mobile money is relatively less costly and also convenient to use and 46.00% **strongly agreed** that Mobile money enables me reduce the chances of been robbed and attacked. This portrayed a positive perception of the women processors about the mobile money technology.

Table 3: PERCEPTION OF WOMEN PROCESSORS ABOUT MOBILE MONEY USE (Extent of Agreement with)

Variable	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean
a. Mobile money is relatively less costly and also convenient to use	1.20	4.80	16.00	49.60	28.40	3.99
b. Most of my customers use mobile money for transactions and have strong believe in the technology	1.20	5.60	12.00	40.40	40.80	4.14
c. Mobile money enables me to reduce operational cost in my marketing	0.80	3.21	22.09	43.78	30.12	3.99
d. The technology is safe and simple to use	3.60	12.20	17.20	35.60	31.20	3.78
e. The technology is safe and secured	0.80	6.80	20.00	34.80	37.60	4.01
f. Mobile money enables me to strengthen relationships with other actors in my sheabutter business during marketing	0.40	4.80	18.80	44.80	31.20	4.01
g. Mobile money enables me expand my business faster	1.60	3.60	22.50	44.00	28.00	3.93
h. Mobile money enables me reduce the chances of been robbed and attacked	1.20	1.60	18.00	33.20	46.00	4.21

3.5 Factors that Influence Mobile Money Technology Adoption

Table 4: Factors That Influence Mobile Money Technology Adoption

Mobile money Account	**Coefficient.**	**Std. Err.**	**P>z**
Age	0.014	0.010	0.156
Years spent in school	0.056**	0.022	0.011
Marital status	0.064	0.117	0.584
Phone ownership	0.855 **	0.367	0.020
Use of phone in business	0.795***	0.243	0.001
Credit	0.435**	0.186	0.020
Distance to MoMo Vendor	-0.018**	0.008	0.031
Specific use of momo	0.052	0.052	0.317
Inverse Mills Ratio	-2.450	-4.855	0.014
Rho	-0.182		
Sigma	13.396		
Wald chi2(8)	= 79.51		
Prob > chi2	= 0.0000		
Number of Obs	250		

Significance level = * 1%, **5% and *10% respectively**

As shown in Table 4, years spent in school is significant at 5% with a positive coefficient. This shows a positive relationship between the number of years a processor spent in school and mobile money adoption. Educated processors are likely to adopt the technology faster than uneducated processors. This finding is consistent with the empirical literature that education enables farmers to make informed decisions such as technology adoption (Abdul-Rahman &Abdulai, 2021).

Mobile phone ownership is also significant at 5% with a positive coefficient indicating a positive relationship between the owning a mobile phone and adoption of mobile money technology. Thus a 1% increase in the ownership of mobile phone leads to a 1% increase the rate of adoption of the technology, ceteris paribus.This is because those who have mobile phones have the capacity to adopt the technology than those who do not. This agrees with World Bank(2012) that found that the rapid adoption rate of this innovative financial technology in Africa is partially owing to the increasing rates at which mobile phone network is penetrating society and the adoption of mobile phone.Credit is significant at 5% with a positive coefficient, which implies that there is a positive correlation between credit acquisition and mobile money technology adoption. Credit acquisition increases the likelihood of adoption in the sense that most creditors are not willing to be physically available to hand over the cash to the processor after all requirements are met by incurring additional transportation cost, they prefer to just send it electronically which is in the best interest of the borrower as well since they are made to bare the transport cost most of the time.Also, most financial institutions and NGOs who disburse loans require that the borrower owns a financial account, be it bank account or MoMo account, for them to keep track of their finances to determine their eligibility for loans.Distance to mobile money vendor is significant at 5% with a negative coefficient which indicates that the longer the

distance to a vendor, the less likely for processors to adopt the technology. Previous studies by Abdul-Rahman and Abdulai (2021) revealed a "negative estimate for distance to mobile money vender from farmer's house and significant for all the specifications, indicating that farmers with longer distance to a mobile money vender are less likely to adopt mobile money technology".

Impact of Mobile Money Technology Adoption

Table 5: Impact of Mobile Money Technology Adoption of Total sales

Quantity sold	**Coefficient.**	**Std. Err.**	**P>z**
Age	-0.341**	0.161	0.035
MoMo Account	20.379 *	12.360	0.099
Household size	0.166	0.150	0.271
Sheabutter processing as major occupation	3.102	3.313	0.349
Processing group	2.757	3.012	0.360
Credit acquisition	5.801*	3.135	0.064
Experience	0.597***	0.203	0.003
Sales mechanisms	1.460	1.278	0.253

Age is significant at 5% with a negative coefficient which indicates a negative correlation between the age of a processor and quantity sold. As the age of a processor increases, the quantity she sells reduces due to factors such as health associated with old age, low quality butter, low quantity of processed butter etc. Mobile money account which represents MoMo adoption is also significant at 10% with a positive coefficient implies a positive relationship between adoption of the technology by women processors and quantity sold. According to Fafchamps&Hill (2005),usage of mobile phones and mobile money facilitates negotiations

between processors and customers. For example, smallholder farmers might regularly trade their farm yield to indigenous buyers immediately after harvesting their farms, with no need for extra storage or processing, since they need the money to pay for crucial consumption needs or unpaid bills. Due to the farmers negotiating and making transactions through the mobile phone and mobile money, their problem of travel period and transportation costs are relieved. Chiputwa et al. (2015) stated that, usage of mobile money via mobile phone enables farmers to trade a greater quantity of their harvests before they are harvested. As well, the authors maintained that the usage of mobile phone makes it convenient for farmers and traders to communicate, hence aids the farmers to pre-negotiate higher prices for their harvests.Credit acquisition was also significant at 10% with a positive coefficient. This implies that the acquisition of credit by women processors positively affects their total sales. Credit helps the processors to expand their scale of production and when this happens, they record increased levels of quantity sold. Literature has it that the effect of mobile money on farm output and welfare goes through various channels such as low cost of buying farming inputs, convenience in selling farm produce, opportunity to purchase input on credit through mobile money, avoiding travel time to access banking services.Experience is seen to also affect quantity sold positively. The more experienced a processor is, in both marketing and processing of butter, the higher likelihood to record high quantity sold.This is because experienced processors usually understand the customer's needs better and can better predict what will sell faster (which type of butter) and therefore spends little time in convincing a customer to make a purchase.

Table 6 Constraints to Mobile Money Technology Adoption

Constraints	Mean	Std. Deviation	Mean Rank	Rank
1. Lack of technical know-how	1.76	1.267	1.75	1
2. Fear/risk of being scammed	3.84	1.874	3.83	3
3. lack of mobile phone	5.09	1.790	5.08	7
4. MoMo is too expensive to use (High service charges)	4.19	1.689	4.18	4
5. No one to send or receive money from	4.92	1.552	4.92	6
6. MoMo agents/vendors are too far away	4.74	1.779	4.74	5
7. MoMo is too complicated to use	3.51	1.837	3.51	2

Table 7: Test Statistics

N	250
Kendall's W[a]	0.283
Chi-Square	424.383
Df	6
Asymptotic Significance	0.000

Conclusions and Recommendations

This study examined the factors influencing the adoption, impacts and constraints to mobile money technology in sheabutter marketing using household survey data collected from selected communities in Tolon District of Ghana. The following findings were revealed;The study revealed that there was a high level of awareness on the part of respondents about the mobile money technology during the survey and though there happened to be limits to the level of adoption.Mobile money adoption among women sheabutter processors is increasing as more

young people venture into the business. 53.60% of the women interviewed use mobile money technology in their transactions. The adoption of the technology was found to be influenced by among others, age, educational level, phone ownership and distance to a MoMo vendor.Mobile money plays a very important role in processing and marketing of sheabutter, it increases quantity sold and reduces transportation cost in the marketing of sheabutter. Adopters of the technology utilized it to facilitate easy transactions and to generate more output (sales). It also facilitates credit acquisition and ensure that the actors in the marketing chain are youth with laudable experience.

It was also realized from the study that almost all processors were not operating at full capacity. The reason for these levels of operations was largely due to lack of and/or access to credit and other financial services.Lack of technical know-how was ranked the most important constraint to mobile money adoption among the women in their marketing and processing of sheabutter.Looking at the numerous positive impacts of the technology, itcan be concluded that the level of adoption of the mobile money technology should be increased by reducing the lack of technical know-how through intensive education of women processors on how to use the technology.The following recommendations have been drawn from the findings of the study: Policies that enhance the adoption of the technology needs to be promoted especially education on how to use mobile money to access financial services.Flexible credit services should be rendered to women processors so that they can increase their level of production and marketing.Further research should be conducted on the effects of non-adoption of mobile money on sheabutter marketing.

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