

## Factors that Influence Women Agro-Processors Credit Utilization in The Northern Region of Ghana

**Fadilah Mohammed**

(Corresponding Author's email: fadilahmohammed74@yahoo.com)

Department of Agricultural Innovation Communication, Faculty of Agriculture Food and Consumer Sciences. University for Development Studies (UDS), Tamale, Ghana

**Hudu Zakaria**

Department of Agricultural Innovation Communication, Faculty of Agriculture Food and Consumer Sciences. University for Development Studies (UDS), Tamale, Ghana

**Seth Denkyi Boateng**

Department of Agricultural Extension, College of Basic and Applied Sciences. University of Ghana (Legon)

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### **Abstract**

*Access to credit for financing agro-processing enterprises has been one of the critical constraints facing small-scale women agro-processors in developing countries. Microfinance institutions (MFIs) have been hailed for providing tailored-made financial products for such small-scale businesses. However, the use of borrowed money from MFIs is critical in the improvement of the general well-being of women borrowers. This paper presents the findings of a study that examined factors affecting credit utilization among women agro-processors in the Northern Region of Ghana. The theory underpinning the study is the life cycle theory which suggests that there exists a relationship between productivity and some socioeconomic characteristics such as age. A descriptive survey design was used to gather data from 402 women agro-processors in two districts of the Northern Region of Ghana. Descriptive and inferential statistics were employed in analyzing the data. Women agro-processors surveyed largely invest about (60%) of their borrowed monies in their agro-processing businesses. They also invest almost (13%) in other businesses and in household consumption (15.4%). About 12% of agro-processors borrowed for others. The study also found a significant relationship between women's socio-economic characteristics such as household size, religious background, location of respondents, household headship status of respondents, literacy, and their utilization of credit. It is therefore recommended that MFIs should incorporate training on credit utilization and financial management as part of their social intermediation activities.*

**Keywords:** *credit utilization, microcredit, agro-processing, Northern Region, and socio-economic characteristics.*

### **Introduction**

With an increasing demand for food, as the global population soared coupled with rising urbanization in developing countries, the role of the agro-processing industry had never been more important than it is now (Wilkinson and Rocha, 2008). The importance of the agro-processing industry has naturally grown compared to agriculture and dominates the

manufacturing sector as emerging countries improve on their growth (ibid). Agro-processing encompasses the post-harvest activities needed to transform, preserve and prepare agricultural produce for intermediary or final consumption (Africa Center for Economic Transformation [ACET], 2017).

The various activities or services that are embedded in agro-processing include storage, grading and standardization, transport, packaging, distribution, marketing, and financing. The value added by these processes plays a pivotal role in transforming agriculture in Ghana in particular, and Africa, as a whole (ACET, 2017).

Agro-processing constitutes an integral component of Ghana's agricultural value chain, contributing significantly to increasing food security and nutrition, farmers' incomes, livelihood security, employment creation/ rural enterprise development, export earnings, and diversification of rural economies in Ghana (Owoo and Lambon-Quayefio, 2018).

Ghana's population growth rate of about 3% continues to surpass the 2% growth rate in food production, making the role of food processing and marketing more important in reducing food spoilage, food insecurity and widespread poverty (Nkechi & Lambon-Quayefio, 2017; Okorley and Kwarteng, 2000). Although the sector is dominated by small and medium-scale female players, it remains the largest employer of the rural labour force in most agricultural communities in the country (Afful-Koomson and Fonto, 2014). Also, not only was the share of agro-processing manufacturing value added (MVA) **in total MVA** above 50% in 2011 and 2014 (ACET, 2017; UNIDO, 2011) but also, its share of total export earnings increased by 38% between 2004 and 2011 (Oduro and Offei, 2014). Additionally, agro-processing firms contributed 86.3% of the country's total Non-Traditional Exports (NTEs), generating US\$2.16 billion in export earnings in 2014.

However, the agro-processing industry, which is dominated by women with low educational levels and skills, is characterised by low productivity, low-value addition to agricultural commodities, and weak linkages with marketing and financial services (Afful-Koomson and Fonto, 2014).

In Ghana, productivity and uptake in the industry continue to be low due to many constraints, including lack of modern agro-processing equipment, high cost of equipment, limited access to extension services, poor managerial skills, and inadequate financial services (Owoo and Lambon-Quayefio, 2017).

Besides, most women in the agro-processing industry rely on energy-exhausting traditional processing technologies for processing, resulting in low yields and poor product quality (MoFA, 2007). Even though women constitute 50% of the total agriculture labour force and contribute more than 95% to agro-processing in Ghana (FAO, 2012), they have limited access to agricultural resources and essential services such as land, agrochemicals, improved seeds and finance (Jost et al., 2016). Women in the agro-processing industry also have limited access to physical markets and price information, which renders them less price competitive, technically inefficient, and unprofitable (SEND Ghana, 2014). These gender-based constraints hinder growth in productivity, product quality and profitability in the agro-processing industry in the country and these are generally attributed to socioeconomic, cultural, policy, and institutional factors (MoFA, 2019).

Currently, there is growing concern and interest among policymakers, stakeholders and international development partners in improving productivity, competitiveness, quality,

incomes, and living standards of small-scale agro-processors in the country (Andam et. al., 2015). Past interventions in the agro-processing industry have yielded limited positive impacts on the development of the industry. For example, the establishment of mechanization centers and improvement of incentive structures for increased uptake of agro-processing activities under the Food and Agriculture Sector Development Policy (FASDEP II) did little to promote the intended agro-based industrial development in the country (MoFA, 2010).

Also, the provision of business development training, new technologies, and linkages with large-scale industries for root and tuber processors under the implementation of the Root and Tuber Improvement and Marketing Programme (RTIMP) had mixed results in improving income and food security (MoFA, 2020). Given this, the Government of Ghana developed the agriculture development and investment plan dubbed; “Investing for Food and Jobs (IFJ): An Agenda for Transforming Ghana’s Agriculture (2018-2021)” to operationalize the government’s vision in the Medium-Term National Development Policy Framework (MTNDPF). It is within the objectives and strategies of the IFJ Agenda (2018-2021), that the government fashioned out its current flagship programmes including the Planting for Food and Jobs (PFJ), Planting for Export and Rural Development, Rearing for Food and Jobs, One-District-One-Factory and One-District-One-Warehouse, among others to transform and modernize agriculture in the country (MoFA, 2018). Implementation of the IFJ is expected to drive the agenda for structural transformation of the economy through modernizing the agri-food system and transferring resources to farmers, agri-food enterprises, and other value chain actors (MoFA, 2019; MoFA, 2018; MoFA, 2017). The PFJ programme particularly seeks to improve the marketability of food crops by establishing strong linkages between producers (farmers), private aggregators, public food programmes, and food and feed processing enterprises (MoFA, 2019).

While the implementation of these programmes may produce positive returns, socio-economic and socio-cultural-related gender imbalances (for example, women having no right to own property, women serving as property to their husbands and religious beliefs) in access to external financial services, productive resources such as land, and extension services among agro-processors especially poor smallholder women processors are causing low uptake and poor adoption of productivity-enhancing and quality improving processing technologies (MoFA, 2010). These tend to reverse the anticipated benefits of these programmes. It is therefore believed that to solve the problem of lack of adequate access to financial services, microfinance must play a crucial role. Microfinance institutions have demonstrated tremendous effort to promote the financial inclusion of the poor in developing countries (India, Indonesia, Bangladesh, Vietnam, etc) as reported by the Microcredit Summit Campaign Report (Gray, Rao, and Rogers, 2015). The report further discloses that about 211 million customers were served by microfinance institutions in 2013 and more than half of these clients were among the poorest at their first loan applications. Also, all clients with outstanding loans dropped from 116 million in 2012 to 114 million in 2013 (Wijesiri, 2016).

Northern Ghana has the highest microfinance branch network (GSS, 2014). The incidence of poverty in the region is not only high (50.4%), but it is the biggest single contributor to the total poor population in Ghana (GSS, 2014). According to the GLSS, Northern Ghana accounts for more than one-third of all poor households in the country (GSS, 2018), while

women are the worst victims. Northern Ghana has consistently lagged in terms of per capita income, education, access to potable water, good infrastructure and health (World Bank Group, 2017). Most microfinance institutions provide a variety of financial services to women involved in agro-processing activities such as shea butter, rice and groundnut oil processing, among others, with the aim of improving livelihood security and reducing poverty (Al-Hassan et. al 2012; Schindler 2010). Broadly, services provided by these MFIs are financial intermediation; mostly loans and saving services, and social intermediation, mostly training of agro-processors and market sourcing.

Though the aim of microfinance institutions in the provision of financial services to women agro-processors is to improve productivity and ultimately the wellbeing of agro-processors, not much has been investigated to reveal the actual use to which women agro-processors invest borrowed monies into. Socio-cultural factors such as the inability of women to make decisions regarding their utilization of microfinance products have the possibility of preventing processors from participating in microfinance programmes and even if they do, they may not be able to utilize microfinance resources for the intended purposes. This is because critiques of microfinance loans believe that some women participants in microfinance only serve as channels for acquiring loans for their husbands (McCarter, 2006; Kabeer and Rajasekhar, 1997). In addition, due to the fungible nature of microfinance loans, some beneficiaries are likely not to use borrowed loans for the intended purposes (Kabeer and Rajasekhar, 1997). This has the possibility of affecting the performance of women agro-processing enterprises, consequently, their inability to attain their livelihood outcomes. Socio-economic factors including inadequate assets owned by women agro-processors that could be used as collateral for loans could also influence the utilization of microfinance products for improved livelihood performance. However, these socio-economic factors and their effects on the utilization of microfinance services by women agro-processors have not been adequately examined in the available literature. This leaves a void in the literature regarding the extent to which socio-economic factors affect the utilization of microfinance products by women agro-processors. It is in this light that this study investigates the influence of socio-economic factors on women's agro-processors utilization of microfinance products in the Northern Region of Ghana.

## **Literature Review**

### ***Socio-Demographic Characteristics of Women Agro-Processors***

Existing literature establishes the effect of social variables like age, educational experience, allocation of household resources, etc. on rural women's capability to attain livelihood security and improve their wellbeing (Zakaria, 2009). For example, as suggested by the life cycle theory, there exists a relationship between productivity and age. The theory expects that productivity increases with age early in the life cycle and decreases with age late in the life cycle as the depreciation of human capital exceeds investment (Zakaria, 2009). As indicated by Johnson and Neumark (1997), productive age is mostly believed to be between the ages of fifteen (15) and forty-nine (49).

Also, the indication from empirical studies has it that the educational level of farmers increases their output levels through increased knowledge of the production processes and easy understanding of research materials of new agronomic practices (Seyoum et al., 1998). It is also argued by Caswell (1997), that education opens new horizons for women and has a positive impact on women's participation in formal employment. This implies that the level

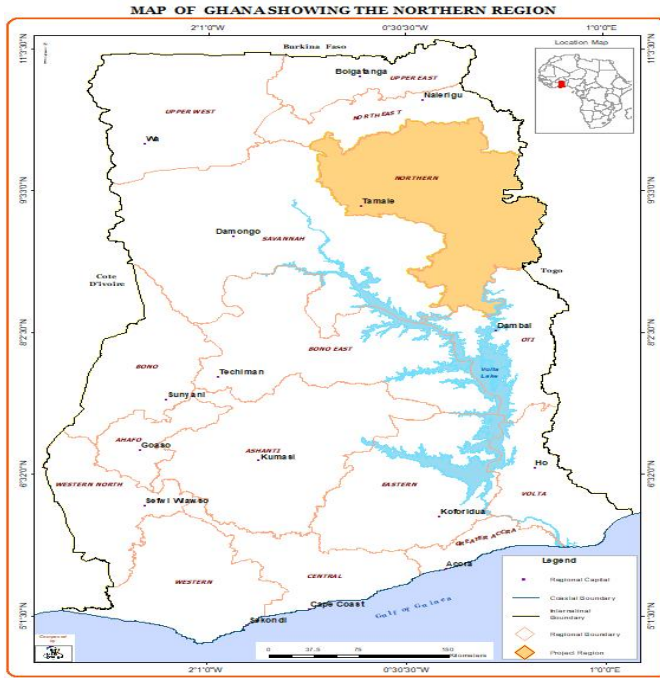
of education achieved by rural women has a significant bearing on the quality of household human capital owing to its capacity to open new horizons for women in employment.

### ***Utilization of Micro Finance Resources by Women***

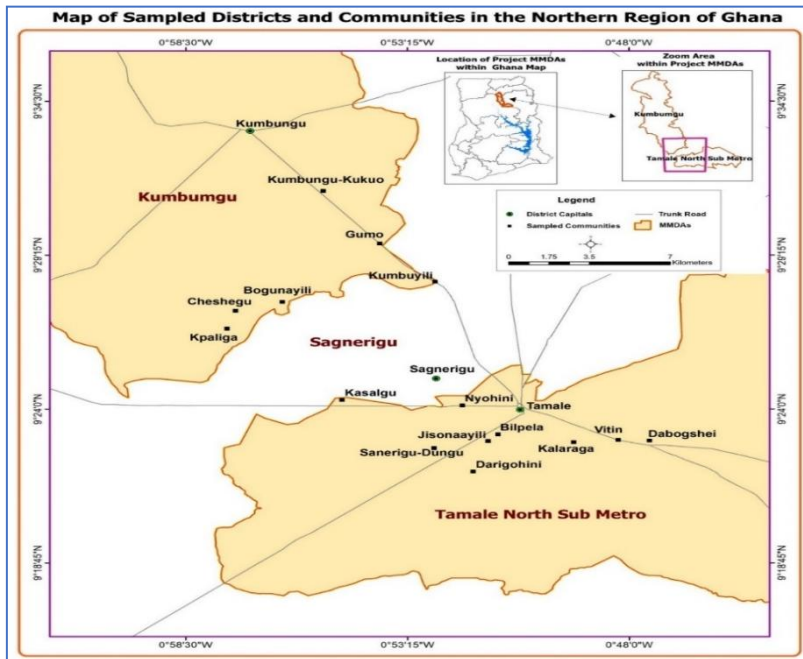
The utilization of financial resources from microfinance services can be looked at in terms of the use of microloans in consumption smoothing, investment or production, asset acquisition and for other purposes. Over the years in most developing countries, governmental and non-governmental organizations have introduced microfinance programmes aimed at the poor to eradicate poverty. Based on the opinion that women have the greatest likelihood than men to be constrained in terms of credit access, wage labour market and unfair share of power in household decision making, several of these microfinance programmes explicitly have women as their target group (Pitt et al., 2006). However, there have been a lot of criticisms regarding the undesirable effects of microfinance including: increasing the affliction of workloads of women, disturbing the balance of families resulting in increased divorce rates and domestic violence, and women serving only as channels for acquiring loans for their husbands (McCarter, 2006; Kabeer and Rajasekhar, 1997). This means that due to the fungible nature of microfinance resources (micro-loans), there is the likelihood of women not using loans disbursed to them by microfinance institutions for the intended purposes.

It is generally acknowledged among development practitioners and academics that improved access to microfinance; particularly microcredit has a positive influence on the lives of poor entrepreneurs, especially women (Alhassan and Akudugu, 2012). As a result, one of the reasons for extending microfinance services to women is to empower them in terms of having the opportunity to take part in decision-making both in their households and in their communities at large. Meanwhile, studies have revealed that women's empowerment is inhibited because they do not control the use of their loans, as men take more of the decisions associated with women's loans utilization than women do in decisions relating to men's loans (Alhassan and Akudugu, 2012; Kabeer, 1998). Additionally, in a study to examine the empowerment effect of rural women's access to microcredit, Ganle et al., (2015) found that whilst some women were empowered in various ways due to their access to microloans; several other women had little control over the use of loans from microcredit and therefore were not better off; other women were worse off because of the exposure to harassment and abuse emanating from their indebtedness and default in loan repayment.

Another study to assess the determinants of credit acquisition and utilization among household farmers with the drive towards sustainable output in Ekiti State in Nigeria revealed that household size, marital status, educational level, occupational status and farm size had significant a effect on the amount of agricultural credit acquired by farmers, and hence recommended that household farmers should acquire adequate credit facilities (Aladejebi et al., 2018). Based on the review of literature in this section, the various indicators for assessing how a loan is procured and used by women agro-processors were defined. More importantly, the various uses that these women put their loans to became clearer. The issue of women not being able to make their own decisions was questioned as the literature revealed that most women use their monies to improve or expand on their enterprises.



**Methodology**  
*Study Area and Data*



*Figure 1: Map of Ghana Showing the Northern Region. Source: Field Survey, 2019.*

*Figure 2: Map of Sampled Communities in the Northern Region.*

*Source: Field Survey, 2019.*

Northern Region (Shown in Figure 1), is located in the Savannah ecological area, which is bounded by Upper West and Upper East Regions to the north, Cote d'Ivoire to the west, the Brong Ahafo and Volta Regions to the south and Togo to the east (GSS, 2013). The Region is endowed with natural water resources such as the Black and White Volta Rivers and their tributaries, namely, Nasia and Daka. These rivers do not only serve as sources of drinking and irrigation water, fishing, and sand for construction but also, they are used for the transportation of goods and humans among others. The predominant economic activity is agriculture; from which crops, mainly yam, maize, millet, groundnuts, cowpea and rice among others, are produced (GSS, 2013). The main industrial activities in the Region include agro-processing activities such as rice milling, shea butter and vegetable oil extraction, cotton ginning, and textile as well as smock making. Linkage of the agricultural sector to investment and business activities in the manufacturing sector is through such industrial crop production as rice, cotton, groundnuts, shea nuts and beans, especially soya beans. There are other small-scale industries involved in vehicle repairs, pre-fabrication of spare parts and manufacturing of farm implements. The rests are cloth and leather works, pottery and carpentry (GSS, 2013).

The population of the Region is 2,310,939 and comprises 1,141,705 males and 1,169,234 females (GSS, 2021). Among the districts in the Region, Tamale Metropolis has the largest population (374,744), followed by Nanumba North (188,680), while Nanton has the least population (50,767) (GSS, 2021). The average household size of 5.2 persons is higher than the national average of 4.4 persons due to the widespread practice of polygamy, and nuclear and extended family systems. The Region recorded an overall literacy rate of 4.9%, which is markedly lower than the national rate of 21.9%. A total of 62.5% of the population are not literate in any language, while only 16.3% and 1.5% are literate in English only and a Ghanaian language only respectively (GSS, 2013). Tamale Metropolis has the lowest proportion of the male population who has never been to school (27.7%), followed by Bunkpurugu-Yunyoo (38.4%), Bole (47.9%), while the remaining districts record more than 50%. The most urbanized city in the Region is the Tamale Metropolis (65.4%), followed by Saveligu Nanton (30.3%), while Talon-Kumbugu is the least urbanized district. Skilled agricultural, forestry and fishery workers constitute the bulk of the employed labour force (74.0%); while clerical, service and sales workers make up the smallest share of the labour force (0.4%) in the region (GSS, 2010). However, a significant proportion of all establishments in the Region are in the services sectors (such as financial institutions and banking, retail and telecommunication); while about one-fifth are in both agriculture and industry (GSS, 2014). In terms of persons' engagement by establishments, more than three-quarters of persons are engaged in the service sector and a relatively smaller number of persons are engaged in agriculture and industry (GSS, 2014). Further, informal establishments, particularly small-sized and micro-sized establishments are predominant with less than 10% of establishments in all the districts operating in the formal sector (GSS, 2014).

A cross-sectional survey design was adopted with which data was obtained from sampled women engaged in shea and rice processing. Both quantitative and qualitative methods of

data collection and analysis were employed in this study. The population for the study comprised all women involved in agro-processing activities, including: the processing of maize, rice, shea butter, soybeans, cassava and groundnut oil among others, and are residents in the Tamale Metropolis and the Kumbungu District of the Northern Region of Ghana. However, based on the agro-processing mapping of the Northern Regional Office of the Ministry of Food and Agriculture and the 2010 Population and Housing Census, only women engaged in shea butter and rice processing were targeted for sampling since these are the two most widely processed foods among women in the Region (GSS, 2013). A sample of the total women in shea butter and rice processing was, however, selected for an interview during data collection because it would have been technically difficult and extremely expensive to have surveyed the whole population, especially when the population is non-registered (Anderson *et al.* 2016).

The sample size for this study was determined using a statistical procedure to ensure that inferences can be made for the whole population. Based on Anderson *et al.* (2016), the sample size was determined using the desired margin of error formulae as follows:

$$E = Z_{\alpha/2} \frac{\sigma}{\sqrt{n}} \quad [1]$$

where E denotes desired margin of error, n is the sample size,  $\sigma$  is the sample estimate of the standard deviation, and  $Z_{\alpha/2}$  is the Z-critical value which is determined from the confidence level. From equation [3.1], the sample size formula is deduced as follows:

$$n = \frac{Z_{\alpha/2}^2 \sigma^2}{e^2} \quad [2]$$

The study used a three percent desired margin of error, which is recommended for largely quantitative studies (Bartlett *et al.*, 2001). Based on a pilot study conducted in February 2019 in three selected districts in the Northern Region (Tamale, Saveligu and Kumbungu), the sample standard deviation for participation level in microfinance was computed to be 31%. Therefore, at 95% confidence level, which corresponds to 1.96 z-critical value ( $Z_{\alpha/2}$ ), the sample size of 410 women agro-processors was determined as follows;

$$n = \frac{1.96^2 (0.31)^2}{0.03^2} = 410.198$$

Therefore, the sample size for the study is approximately 410 agro-processing women. However, data from only 402 respondents were used for analysis due to missing data for 8 respondents.

Probability sampling techniques including purposive sampling and random sampling were respectively employed to select the study areas and respondents from whom data was collected for the study. Nonetheless, the applicability of any probability sampling method primarily depends on the availability or generation of a complete list of sampling units and/or numbers and locations of all respondents in the enumeration areas to form a complete sampling frame. It was based on these that a listing of all women in shea butter and rice processing activities was done in all enumeration areas before respondents were randomly sampled using the Microsoft Excel tool known as the Flash Fill.

Based on the number of licensed microfinance institutions (MFIs) and the population of women engaged in shea butter and rice processing activities, Tamale Metropolis and



Kumbungu Districts were selected for the study because the two districts have the highest concentration of MFI and women agro-processors. In the second step, 9 and 6 enumeration communities respectively were selected from Tamale and Kumbungu Districts based on the concentration of women agro-processors. The specific communities sampled are Kasalgu, Jisonaa-yili, Darigohini, Nyohini, Saganarigu-Dungu, Bilpela, Dabogshe, Kalariga and Vitim from Tamale Metropolis; and Kuku, Gumo, Kumbuyili, Cheshegu, Kpalga and Bongnaayili from Kumbungu District. In the last step, due to the lack of a complete sampling frame of women in shea butter and rice processing in all the selected communities, a total of 28 women were equally allocated to each of the selected communities in the two districts, which translated into 420 women. Thus, a total of 252 and 168 respondents were allocated for random sampling in Tamale Metropolis and Kumbungu District, respectively. However, data from only 402 respondents were used for analysis due to missing data for 18 respondents. Data on socio-economic characteristics of respondents gathered included: age, marital status, educational level, household size, agro-processing type, start-up capital, right to asset ownership, gender stereotypes, business size and use of microfinance products.

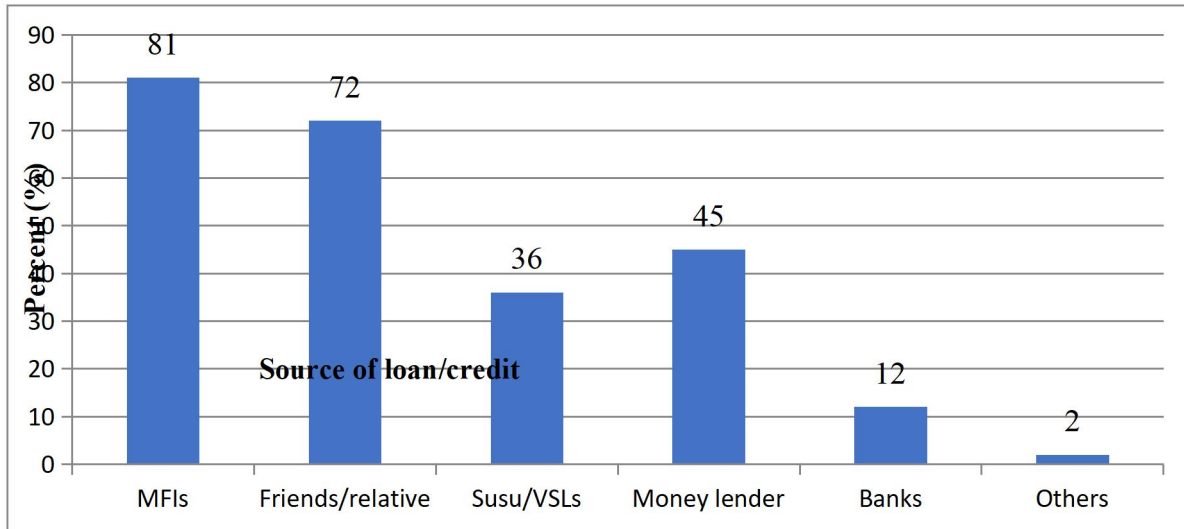
Data were collected using the face to face method with the help of questionnaire for quantitative information and interview guide for focus group discussions for qualitative data. The data collected was analysed using quantitative and qualitative analytical methods. Contingency tables and the application of the Pearson Chi-square test were used to analyse data on the relationship between socio-economic characteristics of women agro-processors and their utilization of microfinance products. This was employed to test the following:

Hypothesis:  $H_0$  : Socio-economic and other characteristics of women in agro-processing are independent of their utilization of microfinance products;  $H_1$  : Socio-economic and other characteristics of women in agro-processing are not independent of their utilization of microfinance products. The test for independence rejects the null hypothesis if the differences between observed and expected frequencies provide a large value for the test statistic. Thus, based on the p-value approach, and given a level of significance ( $\alpha$ ), the null hypothesis ( $H_0$ ) will be rejected if the p-value  $\leq \alpha$ . The qualitative data was analysed using content analysis.

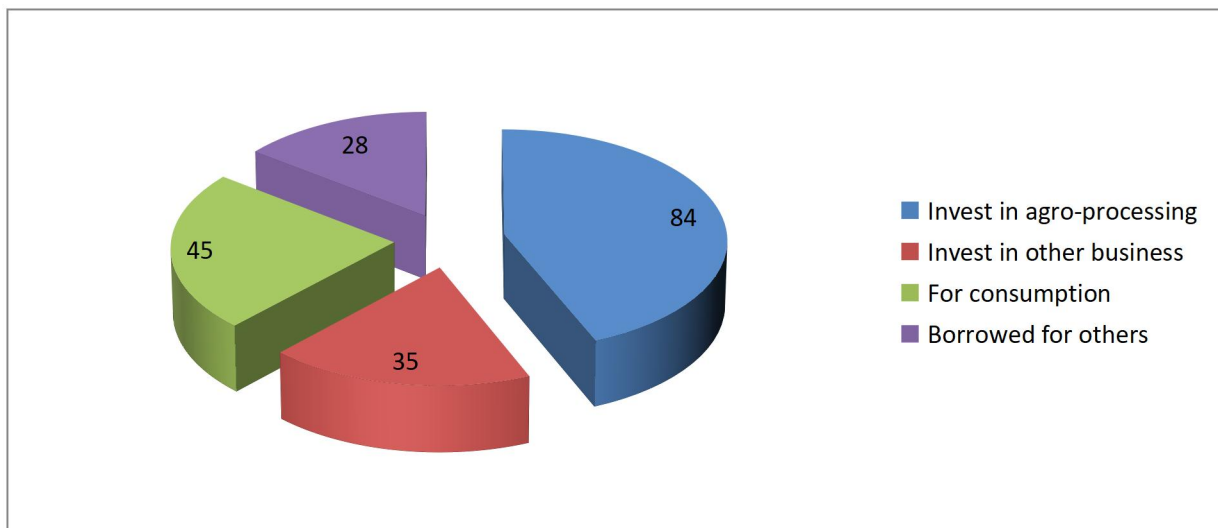
## Results and Discussions

### ***Borrowing among Women Agro-Processors***

Most (90%) of the respondents have ever taken a loan/credit from various sources. Only 40 respondents (representing 10%) indicated that they have never borrowed monies to inject into their businesses. The agro-processors interviewed often sourced their loans from many sources with some of them taking loans from multiple sources. However, the majority (81%) of respondents often sourced for their loans from MFIs and friends/relatives (72%). Some of them also often took loans from Susu or Village Savings and Loans groups (36%), money lenders (45%), banks (12%) and others (2%) as shown in Figure 1. As presented in Figure 3, the majority (84%) of the respondents who took loans indicated that they often invested their loans in their agro-processing enterprises, while 35% said they often invested in other businesses besides their agro-processing business and 45% and 28% respectively said they often borrowed for consumption and for others, like their husbands or family relations.

**Loans**

**Figure 3: Bar Chart Showing Distribution of Source of Loans. Source: Field Survey, 2019.**



**Figure 4.: Pie Chart Showing the use of Borrowed Money. Source: Field Survey, 2019.**

This implies that the existence of women micro-enterprises depends greatly on access to microfinance services. This finding is not surprising since the main intention of these women in contracting credit/ loans is to improve their agro-processing businesses. This further implies that, even though some pieces of literature argue that women microfinance borrowers do not use their borrowed funds for the intended purposes and that some women even borrow for their husbands, it is not generalizable to all borrowers. This finding of the study is in line with that of Boateng, Boateng and Bampoe (2015) who reported that most microfinance loan beneficiaries use the contracted credit for the expansion of their businesses. The finding also corroborates that of Sagarik (2016) whose study found that most agro-processors invest their borrowed microfinance resources into their agro-processing activities. However, during a focus group discussion, it was revealed that even though women agro-processors often contracted loans with the core aim of investing borrowed financial resources into their businesses, some of them often ended up spending some of the resources on meeting very pressing needs of their households; such as,

payments of ward's school fees or even on consumption. This was confirmed during a focus group discussion when one of the respondents made a statement that;

*"About 40% of the initial loan I took from Bonzali Rural Bank Microfinance was used to pay my daughter's school fees when she gained admission into the senior secondary school; the savings I made for the past year was not enough to take care of her admission fees let alone to make other expenses to prepare her for school, fortunately, the loan I applied for earlier was given to me at that critical time that I needed it and so I used about 40% of it in paying her fees and also prepared her for school".* (Verbatim Comment by a female respondent on the 15<sup>th</sup> of May 2019 at Darigohini).

Besides, an interview with a key informant revealed that, women are unable to make decisions in their households due to the cultural reason that, the man is the head of the family and so should be the one to take decisions concerning the family. As such, some microfinance participants end up not using credits/loans given to them by microfinance institutions for the intended purposes. This is because culturally, husbands must approve for their wives to apply for loans and so are said to have the right to make decisions on how loans taken by their wives should be utilized; with the reason being that the men must pay when the women incur liabilities. This is said to limit the growth of women agro-processing enterprises and consequently, higher default rates among microfinance participants. This was emphasised by a statement made by a key informant from one of the microfinance institutions during an interview;

*"Some of the women borrowers some times do not use their loans for the intended purposes especially those who depend greatly on their husbands to take decisions,. A typical case is a sean I saw where a man was beating his wife and when I found out the reason behind his beating of the wife, it came out that the man asked the wife to lend to him money she borrowed from a microfinance institution to buy inputs for her agro-processing business and the wife refused to do so".* ( Verbatim Comment by a male key informant on the 15<sup>th</sup> of May 2019 at Bonzali Rural Bank ).

### **Socio-economic Factors Influencing Respondents' Credit Utilization**

The use of borrowed money from microfinance institutions is critical in the improvement of the general well-being of women borrowers. However, individual use of borrowed monies largely depends on their socio-economic and other circumstances. As such, the study examined socio-economic and other factors influencing women agro- processors' use of borrowed monies.

Bivariate analysis was employed in assessing the relationship between selected socio-economic factors and agro-processors' use of borrowed financial resources. The premise of this study is that; agro-processor's age, household size, religious background, ability to read and/or write, membership of associations/ groups and main livelihood activities have a significant influence on their use of credit. These factors are therefore expected to determine whether an agro-processor would invest her borrowed monies in her business, use it for consumption or be given to others.

### **Age of Agro-processors and Credit Utilization**

In assessing the relationship between age and credit utilization of respondents, a cross-tabulation of age and credit utilization status as 'participant' and non-participant' of microfinance and Chi-square test of association was conducted. Respondents' age category

as young, middle-aged, or aged is likely to have a significant effect on the investment of their borrowed monies in their businesses or use it for household consumption or surrender to others, mostly husbands and other male relatives. The data was therefore subjected to Chi-square analysis to test the following hypotheses:

H<sub>0</sub> there is no significant relationship between women agro-processors' age and the use to which they often put their credit.

H<sub>a</sub>: there is a significant relationship between women agro-processors' age and the use to which they often put their credit.

Results of Chi-square test shown in Table 1 with Pearson Chi-Square ( $\chi^2$ ) = 6.525; df = 6; P-value = 0.367 found no statistically significant relationship between age and use of credit. As such, the null hypothesis could not be rejected. It is therefore argued that the age of agro-processors do not significantly influence their use of credit. Thus, the young as well as middle and aged respondents were equally likely to invest their credit in their businesses, use it for household consumption, or be given to others. Respondents in their middle-age were found to be more likely to invest their borrowed monies in their agro-processing enterprises compared to the youth and the elderly.

The predominance of the middle-aged agro-processors utilization of credit into their agro-processing and in other businesses could be attributed to the fact that women in this age group have a lot of responsibilities to carry out including feeding their families and paying their children's school fees. As a result, women in this age group in the study area work very hard at their businesses as well as diversifying into other businesses to earn more income to meet their obligations in their households. Women within this age group also work very hard because of the high poverty rate in rural areas, especially in the northern part of Ghana. This finding supports that of Egyir (2010), who indicated in his study that, due to the inability of most men to earn enough income to take care of their household needs, the survival of most households depends on women. Table 1 provides detailed information on the age and use of borrowed money by respondents.

**Table 1: Influence of Socioeconomic Characteristics on the use of Micro-Credit**

Relationship being Tested	Pearson Chi-Square ( $\chi^2$ )	Df	P-value
Use credit * Age Group of Respondents	6.525	6	0.367
Use credit * Marital Status	3.224	3	0.358
Use credit * Household Headship Status	6.723	3	0.041**
Use credit * Ability to Read and Write	5.845	3	0.018***
Use credit * Respondents' Location	10.872	6	0.092*
Use credit * Respondents' Religion	10.872	6	0.092*
Use credit * Membership of Association	13.855	3	0.003***
Use credit * Household Size	9.418	6	0.029**

Source: Field Survey, 2019

### **Marital Status of Respondents and Use of Credit**

In assessing the relationship between marital status and use of credit, Chi-square test was applied to the these hypotheses:

H<sub>0</sub>: there is no significant relationship between marital status and the use of credit

H<sub>a</sub>: there is a significant relationship between marital status and the use of credit

The Chi-square test results as shown in Table 1, with Pearson Chi-Square ( $\chi^2$ ) = 3.224; df = 3; P-value = 0.358, found no statistically significant relationship between marital status of agro-processors and use of credit. As such, the null hypothesis could not be rejected. Thus, married respondents, as well as singles, do not differ significantly in their decision on how to use their credit. The non-significance of the Chi-Square test is surprising, as there is still a high sense of patriarchy among members of the studied communities. For instance, during a focus group discussion in one of the communities a participant lamented that:

*“Men and for that matter, our husbands are seen as heads of our households and leaders in the community in general, while women are followers and are expected to succumb to their authority. As a result, most of them use their positions as heads and leaders of families to control women in all aspects including their economic and financial matters. We, women, have to seek their endorsement before taking part in microfinance programmes especially microcredit and so they most often want to dictate to us as to how loans taken should be utilized”* (Verbatim Comment by a female respondent on the 18<sup>th</sup> of May 2019 at Darigohini).

However, the higher percentage of married women processors' investment of their borrowed micro-loans in their agro-processing enterprises could mean that, because they are married, they have more responsibilities and so need the services of microfinance institutions to be able to invest much into their processing enterprises and need to work hard in their businesses to earn more income to be able to manage their families. This finding corresponds with that of Addai (2017), whose study found that the majority of the women customers of MFIs are married and hence may require the services of MFIs to be empowered to manage their homes. Table 1 provides detailed information on respondents' use of borrowed money and their marital status.

#### ***Status of Respondents within the Household and Use of Credit***

Gender structured household status as either headed by male or female was analysed against the use of borrowed financial resources and Chi-square test was applied to test the following hypotheses:

H<sub>0</sub>: there is no significant relationship between the sex of household head and use of credit.

H<sub>a</sub>: there is a significant relationship between the sex of household head and use of credit.

With Pearson Chi-Square ( $\chi^2$ ) = 6.723; df = 3; P-value = 0.041 the test result confirmed significance (at 5% level of significant) between gender household headship status and use of credit (See Table 1). As such, the null hypothesis was rejected in favour of the alternative. Thus, women agro-processors from a male-headed household differ significantly from those agro-processors from a female-headed household in how they often use their credit obtained from microfinance institutions.

This finding is not surprising as the socio-cultural background of respondents in the study area has male household heads as breadwinners of the household and makes it mandatory for them to take care of household consumption whilst women play a supportive role. Very few women agro-processors from male-headed households invest their credit into other businesses and this could be attributed to the fact that women need to seek approval from their male heads (mostly husbands) before taking decisions concerning themselves or their children. As indicated earlier, due to the strong level of patriarchy among members of the study communities, most men use their positions as heads and leaders of families to control women in all aspects of their lives even including their economic and financial matters. Also,

cultural norms in the study communities assign roles and responsibilities to both women and men, and this shapes how women utilize their borrowed funds from microfinance institutions. This finding is in line with that of Mukamana, Sengendo and Okiria (2017), which reported that women are required to involve in income generation activities that can take place close to their homes. This is to enable them shear their time between their economic activities and their reproductive roles as women and by so doing allow men to perform the task that requires more mobility and interaction with the public.

### ***Literacy of Respondents and Use of Credit***

This section presents information on the use to which literate women put their borrowed microfinance funds as compared to their counterparts who could not read and/or write and the results are presented in Table 1. Chi-square test was applied to test the following hypotheses:

H<sub>0</sub>: there is no significant relationship between the literacy of women agro-processors and their use of credit.

H<sub>a</sub>: there is a significant relationship between the literacy of women agro-processors and their use of credit.

Applying Pearson Chi-Square ( $\chi^2$ ) = 5.845; df = 3; P-value = 0.018 as presented in Table 1, the null hypothesis was rejected in favour of the alternative hypothesis. Thus, there was a significant relationship between the literacy of women agro-processors and their use of credit. Most of the respondents who could read and write were found more likely to invest the credit into their agro-processing businesses compared with 63.6% of processors who could not read and write.

The reasons behind most literate women agro-processors' utilization of their credit in their agro-processing businesses could be that, with their education, they might have better knowledge regarding loan terms and conditions compared to women processors who cannot read and/or write. Additionally, literate women agro-processors may also have adequate and better knowledge on the implications of defaulting in the settlements of their loans on their businesses and may take adequate precautionary measures with regards to the utilization of borrowed funds. This finding supports that of Asanoy (2004) which indicated that educated borrowers had higher levels of knowledge and skills in loan utilization compared to illiterate ones.

### ***Respondents' Location and Use of Credit***

Women agro-processors' place of residence as rural, peri-urban and urban were conceived to affect their use of borrowed financial resources. As such, these hypotheses were formulated and tested using Chi-square test to assess the relationship between location of respondents and their use of credit facilities. The results are presented in Table 1.

H<sub>0</sub>: there is no significant relationship between residential location of women agro-processors and their use of credit; H<sub>a</sub>: there is a significant relationship between residential location of women agro-processors and their use of credit.

Analysing with Pearson Chi-Square ( $\chi^2$ ) = 10.872; df = 6; P-value = 0.092 as shown in the Table 1, the null hypothesis was rejected in favour of the alternative. Thus, the analysis confirmed a significant relationship at 10% of significance between residential location of women agro-processors and their use of credit. Respondents from peri-urban and urban

areas were found less likely to invest their borrowed monies in their agro-processing enterprises compared with their rural counterparts. It could be argued that because of the high cost of living in the peri-urban and the urban areas coupled with their expenditures on social amenities which are absent in the rural communities, might explain this finding. It could also be the availability of other business opportunities in the peri-urban and urban areas in which agro-processors might diversify their livelihood activities into compared to processors in the rural areas. This finding supports that of Ibrahim and Zareba (2015), whose study results indicate that loan utilization and repayment performance are significantly influenced by the locality of borrowers. Table 1 provides detailed information on the use of borrowed money from microfinance institutions and respondents' location.

### ***Religious Background of Respondents and Use of Credit***

In testing the relationship between the religious background of respondents and their use of borrowed microfinance resources, the following hypotheses were formulated and tested using Chi-square test of relationship and the results are presented in Table 1.

H<sub>0</sub>: there is no significant relationship between religious background of respondents and their use of credit

H<sub>a</sub>: there is a significant relationship between the religious background of respondents and their use of credit.

The test results, as shown in Table 1, with Pearson Chi-Square ( $\chi^2$ ) = 7.319; df = 3; P-value = 0.062, confirmed a significant relationship between religious background of respondents and their use of credit. As such the null hypothesis was rejected in favour of the alternative. As shown in Table 1, most of the women agro-processors who are followers of Islamic Religion were found to have invested their borrowed monies in expanding their agro-processing businesses. This finding could be attributed to the fact that they have larger household sizes because the religion encourages followers to give birth to higher number of children, hence higher labour force that can be tapped into their agro-processing businesses when production increases. The differences in the utilization of borrowed funds by agro-processors who are followers of Islamic Religion, and the Christian Religion might also be attributable to differences in belief systems of these religions on contracting loans. This finding supports the work of Mansori et al. (2018), which indicated that followers of religions have different behaviours in decision-making regarding contracting loans and loan repayment performance. Table 1. provides detailed information on the use of borrowed money and the respondent's religion.

### ***Membership of Association and Use of Credit***

The study also assessed the relationship between membership of a group and use of borrowed monies. It is expected that respondents who were members of groups such as livelihood-based groups, (e.g., agro-processors association, and farmer-based organizations) would benefit from sharing ideas and experiences among their colleagues and as such, better equipped to make informed decisions on the use of their financial resources. Therefore, the Chi-square test of relationship was applied in testing the following hypotheses:

H<sub>0</sub>: there is no significant relationship between agro-processors' membership of association and use of credit; H<sub>a</sub>: there is a significant relationship between agro-processors' membership of association and use of credit.

Table 1 presents cross-tabulation of membership of association and use of credit and Chi-square test results. Using Pearson Chi-Square ( $\chi^2$ ) = 13.855; df = 3; P-value = 0.003, the null hypothesis was rejected in favour of the alternative. Thus, there is a significant relationship between membership of association and the use of credit at a 1% level of significance. Respondents who belonged to associations were found more likely to invest their credit into their agro-processing enterprises compared with those who did not belong to any association.

The likelihood of respondents who belong to associations to invest their credit into their agro-processing enterprises could be attributed to the fact that agro-processors who are in associations or groups are normally targeted for business development training by some NGOs and microfinance institutions in the study area.

This assertion was confirmed by one shea butter processor during a focus group discussion when she said ;

*“Some NGOs, as well as microfinance institutions, provide those of us in associations or groups with business development training that enabled us to improve upon our businesses. For instance, Bonzali microfinance has trained us on financial literacy, how we should invest our borrowed funds and how to keep records of our businesses to know if they are growing or not”* (Verbatim Comment by a female respondent on the 19<sup>th</sup> of May 2019 at Kalariga).

Also, the likelihood of investment of borrowed funds into agro-processing enterprises by respondents who belong to associations could be attributed to the fact that agro-processors who belong to associations develop social networks which enable them to exchange and share information regarding their livelihoods as well as their general wellbeing. As a result, agro-processors in associations discuss issues concerning their livelihoods activities and microfinance products given to them and how to invest and manage them to be able to pay back their loans without any difficulty. Associations also serve as collateral for women agro-processors when they apply for micro-credit facilities from microfinance institutions that operate based on the solidarity group’s model. These findings corroborate that of Anderson et al. (2016) which indicated that most customers of microfinance join associations because of the promise of getting loans, the network and support from their colleagues. Table 1 provides details of the relationship between agro-processors use of borrowed funds from microfinance institutions and membership of associations.

### ***Household Size of Respondents and Use of Credit***

Agro-processors often relied on their family’s labour sources for their labour demand; as such, the study assessed the relationship between household size and use of borrowed money by applying the Chi-square test to the following hypotheses:

H<sub>0</sub>: there is no significant relationship between household size and use of credit by women agro-processors, H<sub>a</sub>: there is a significant relationship between household size and use of credit by women agro-processors.

Again, with Pearson Chi-Square ( $\chi^2$ ) = 9.418; df = 6; P-value = 0.029, the analysis confirmed a significant relationship between household size and use of credit and as such, the null hypothesis was rejected in favour of the alternative. As shown in Table 1, respondents from large households were more likely to spend their credit for household consumption. Thus, agro-processors with small household sizes always stood a better chance of not facing



difficulties in the repayment of their borrowed funds. This finding corroborates that of Zareba, (2015), whose study found that, by investing a greater percentage of borrowed microfinance funds into running their agro-enterprises, there is the likelihood to generate more income through improvement in the business performance. Thus, loan utilization affects repayment rates. Table 1 provides detailed information on women agro-processors' use of borrowed money and their household sizes.

### **Conclusion**

The findings of the study indicate that agro-processors use credit borrowed from microfinance institutions in varied ways including investing in their agro-processing businesses and other businesses as well as borrowing for consumption and for other members of the family. The study also found a significant relationship between Agro-processor's gender, household headship status, literacy levels, location, religious background, membership of associations and household sizes and their use of credit from microfinance institutions. This implies that these variables are important factors that affect the use to which they put their borrowed resources from microfinance institutions. However, no statistically significant relationship exists between agro-processors' marital status, age, and use of borrowed monies. Meanwhile, findings from focus group discussions indicate that there is still a high sense of patriarchy among members of the studied communities in which husbands are seen as heads of households and leaders in the community in general; while women are followers and are expected to succumb to their authority. As a result, most of the men use their positions as heads and leaders of families to control women in all aspects including their economic and financial matters. The study concludes that the socio-economic and other characteristics of women agro-processors have a significant relationship with their utilization of microfinance products. The study also concludes that credit is fungible as microfinance clients' households use their borrowed resources in numerous ways that suit their needs and seal their financing gaps efficiently. Borrowed microfinance funds are used by agro-processors for financing their capital requirements and at the same time, for consumption smoothing, health and education of their households. Due to the high level of patriarchy among members of the study communities, some men use their positions as heads and leaders of families to control women in all aspects of their lives even including their economic and financial matters. That is, some husbands would dictate to their wives as to how credit obtained from microfinance institutions should be utilized.

### **Recommendations**

Based on the findings of the study, it is recommended that the District Assemblies, Non-Governmental Organizations (NGOs) and other Civil Society Organizations (CSOs) operating in northern Ghana should intensify their education and advocacy activities on women's economic empowerment through improving women agro-processors access and capacity to effectively utilize microfinance services and products for improved productivity of their agro-processing enterprises. Microfinance institutions should also advocate for men's support for the financial empowerment of women. Due to the fungibility of credit which makes women agro-processors use their borrowed funds for activities other than agro-processing, there is a need for microfinance institutions to establish special or educational credit facilities which women agro-processors could use to cater for the educational needs of their wards or for expenses outside agro-processing activities.

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