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Credit Utilization Patterns among Women Agro-Processors in Ghana: Analyzing Socio-Economic Influences and Implications for Microfinance Institutions

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Abstract
Limited access to finance has been a major obstacle for small-scale women agro-processors in underdeveloped nations. Microfinance institutions (MFIs) have been praised for offering customized financial solutions for small-scale firms. Nevertheless, the use of borrowed funds from Microfinance Institutions (MFIs) plays a crucial role in enhancing the overall welfare of female borrowers. This article summarizes the results of a research that investigated the variables that influence the use of credit by women involved in agro-processing in the Northern Region of Ghana. The research is based on the life cycle hypothesis, which posits a connection between productivity and certain socioeconomic factors, such as age. Data was collected from 402 women agro-processors in two districts of the Northern Region of Ghana using a descriptive survey approach. The data was analyzed using descriptive and inferential statistics. The majority (60%) of women agro-processors questioned allocate a significant portion of their borrowed funds towards their agro-processing enterprises. Additionally, they allocate a significant portion (about 13%) of their investments towards other enterprises, as well as a considerable amount (15.4%) towards household spending. Approximately 12% of agro-processors obtained loans for the purpose of lending to others. The research also discovered a notable correlation between women's socio-economic attributes, such as the size of their households, religious affiliation, geographical location, their role as household heads, literacy level, and their use of credit. It is advisable for MFIs to provide training on loan use and financial management as part of their social intermediation efforts.

Keywords: credit utilization, microcredit, agro-processing, socio-economic characteristics.

Introduction

With an increased need for food, as the world population rose combined with expanding urbanization in emerging nations, the role of the agro-processing sector has never been more vital than it is today (Wilkinson and Rocha, 2008). The significance of the agro-processing business has naturally expanded relative to agriculture and dominates the manufacturing sector as developing nations improve on their development (ibid). Agro-processing comprises the post-harvest processes required to convert, store and prepare agricultural food for intermediate or final consumption (Africa Center for Economic Transformation [ACET], 2017).

The numerous operations or services that are incorporated in agro-processing include storage, grading and standards, transport, packaging, distribution, marketing, and finance. The value generated by these processes plays a vital role in altering 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 roughly 3% continues to outpace the 2% growth rate in food production, making the function of food processing and marketing increasingly vital in decreasing food spoilage, food insecurity and widespread poverty (Nkechi & Lambon-Quayefio, 2017; Okorley and Kwarteng, 2000). Although the industry is dominated by small and medium-scale female players, it is the major employer of the rural labour force in most agricultural areas in the nation (Afful-Koomson and Fonto, 2014). Also, not only was the percentage of agro-processing manufacturing value added (MVA) in total MVA over 50% in 2011 and 2014 (ACET, 2017; UNIDO, 2011) but also, its part of total export profits climbed by 38% between 2004 and 2011 (Oduro and Offei, 2014). Additionally, agro-processing enterprises provided 86.3% of the country's total Non-Traditional Exports (NTEs), producing US$2.16 billion in export revenues in 2014. However, the agro-processing business, which is dominated by women with low educational levels and abilities, is typified by poor productivity, low-value addition to agricultural commodities, and limited links with marketing and financial services (Afful-Koomson and Fonto, 2014).

In Ghana, productivity and uptake in the business continue to be low owing to various restrictions, including lack of modern agro-processing equipment, high cost of equipment, restricted access to extension services, insufficient management skills, and inadequate finance services (Owoo and Lambon-Quayefio, 2017). Besides, most women in the agro-processing business depend on energy-exhausting old processing methods for processing, resulting in low yields and poor product quality (MoFA, 2007). Even though women form 50% of the overall agriculture labour force and contribute more than 95% to agro-processing in Ghana (FAO, 2012), they have restricted access to agricultural resources and vital services such as land, agrochemicals, better seeds and financing (Jost et al., 2016). Women in the agro-processing business also have restricted access to physical marketplaces and pricing information, which makes them less price competitive, technically inefficient, and unprofitable (SEND Ghana, 2014). they gender-based barriers hamper development in productivity, product quality and profitability in the agro-processing business in the nation and they are often linked to socioeconomic, cultural, policy, and institutional issues (MoFA, 2019).

Currently, there is increased concern and interest among policymakers, stakeholders and foreign development partners in boosting productivity, competitiveness, quality, incomes, and living standards of small-scale agro-processors in the country (Andam et. al., 2015). Past initiatives in the agro-processing business have generated minimal beneficial benefits on the growth 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 projected to promote the agenda for structural transformation of the economy by upgrading the agri-food system and shifting resources to farmers, agri-food firms, and other value chain players (MoFA, 2019; MoFA, 2018; MoFA, 2017). The PFJ initiative specifically strives to increase the marketability of food crops by developing strong links between producers (farmers), commercial aggregators, public food programmes, and food and feed processing firms (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 undo the projected effects of these interventions. It is consequently felt that to overcome the issue of lack of proper access to financial services, microfinance must play a key role. Microfinance institutions have exhibited significant effort to promote the financial inclusion of the poor in developing nations (India, Indonesia, Bangladesh, Vietnam, etc) as documented by the Microcredit Summit Campaign Report (Gray, Rao, and Rogers, 2015). The research also indicates that around 211 million consumers were handled by microfinance institutions in 2013 and more than half of these clients were among the lowest during their initial loan applications. Also, all consumers with outstanding loans declined from 116 million in 2012 to 114 million in 2013 (Wijesiri, 2016). Northern Ghana has the greatest microfinance branch network (GSS, 2014). The prevalence of poverty in the area is not only high (50.4%), but it is the highest single contribution to the overall poor population in Ghana (GSS, 2014). According to the GLSS, Northern Ghana accounts for more than one-third of all impoverished families in the nation (GSS, 2018), while women are the worst sufferers. Northern Ghana has historically trailed in terms of per capita income, education, access to drinkable water, adequate infrastructure and health (World Bank Group, 2017). Most microfinance banks offer a range of financial services to women participating in agro-processing businesses such as shea butter, rice and groundnut oil processing, among others, with the purpose of enhancing livelihood stability and decreasing poverty (Al-Hassan et. al 2012; Schindler 2010). Broadly, services offered by these MFIs include financial intermediation; largely loans and saving services, and social intermediation, mostly training of agro-processors and market sourcing.

Though the purpose of microfinance institutions in the provision of financial services to women agro-processors is to boost productivity and eventually the welfare of agro-processors, not much has been examined to show the real use to which women agro-processors spend borrowed cash 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 sceptics of microfinance loans claim that some women participants in microfinance primarily act as conduits for collecting loans for their husbands (McCarter, 2006; Kabeer and Rajasekhar, 1997). In addition, owing to the fungible character of microfinance loans, some recipients are likely not to utilise borrowed money for the intended reasons (Kabeer and Rajasekhar, 1997).This has the risk of impacting the functioning of women agro-processing firms, therefore, their incapacity to accomplish their livelihood results. Socio-economic variables such insufficient assets possessed by women agro-processors that might be utilised as collateral for loans may potentially impact the usage of microfinance products for enhanced livelihood performance. However, these socio-economic determinants and their consequences on the adoption of microfinance services by women agro-processors have not been extensively studied in the current research. This creates a hole in the research about the degree to which socio-economic variables impact the usage of microfinance products by women agro-processors. It is in this context that this research explores the effect of socio-economic determinants on women's agro-processors consumption of microfinance products in the Northern Region of Ghana.

Literature Review

Existing study reveals the effect of social variables like age, educational experience, distribution of family resources, etc. on rural women's potential to acquire economic stability and raise their wellbeing (Zakaria, 2009). For example, as postulated by the life cycle theory, there exists a relationship between productivity and age. The theory predicts that productivity rises with age early in the life cycle and reduces with age late in the life cycle when the depreciation of human capital exceeds investment (Zakaria, 2009). As indicated by Johnson and Neumark (1997), productive age is commonly thought to be between the ages of fifteen (15) and forty-nine (49).

Also, the proposal from empirical studies has it that the educational level of farmers increases their output levels via increased understanding of the production processes and easier interpretation of research materials of new agronomic approaches (Seyoum et al., 1998). It is also indicated by Caswell (1997), that education gives new horizons for women and has a favourable impact on women's involvement in formal labour. This suggests that the quantity of education gained by rural women has a major effect on the quality of family human capital owing to its inclination to generate new vistas for women in labour.

The utilisation of funds from microloans for asset purchase, investment or production, consumption smoothing, and other purposes may be considered when examining the financial resources obtained from microfinance services. Over the years in most developing nations, governmental and non-governmental institutions have launched microfinance activities directed towards the poor to eliminate poverty. Based on the assumption that women have the greater propensity than males to be confined in terms of loan access, wage labour market and unequal sharing of power in family decision making, some of these microfinance schemes explicitly have women as their target audience (Pitt et al., 2006). Nonetheless, there have been numerous complaints about the negative consequences of microfinance, such as how

much heavier the workloads for women become, how it upsets the family dynamic and raises divorce and domestic violence rates, and how women are only used as conduits for their husbands to obtain loans (McCarter, 2006; Kabeer and Rajasekhar, 1997). This means that owing to the fungible nature of microfinance resources (micro-loans), there is the risk of women not utilising loans supplied to them by microfinance organisations for the intended reasons.

It is commonly agreed among development practitioners and academics that increasing access to microfinance; particularly microcredit has a good impact on the lives of disadvantaged entrepreneurs, especially women (Alhassan and Akudugu, 2012). As a consequence, one of the objectives for expanding microfinance services to women is to empower them in terms of having the ability to take part in decision-making both in their households and in their communities at large. Meanwhile, studies have shown that women's empowerment is obstructed as they do not manage the usage of their loans, as males take more of the choices linked with women's loans utilization than women do in selections related to men's loans (Alhassan and Akudugu, 2012; Kabeer, 1998). In a study conducted by Ganle et al. (2015) to investigate the impact of rural women's access to microcredit on empowerment, it was discovered that although some women benefited from having access to microloans in different ways, others were negatively impacted because they were unable to control how they used the loans, leaving them vulnerable to abuse and harassment. According to Aladejebi et al. (2018), household size, marital status, educational attainment, occupational status, and farm size were found to have a significant impact on the amount of agricultural credit that farmers acquired. This study evaluated the factors that influence credit acquisition and utilisation among household farmers in Ekiti State, Nigeria, with the goal of achieving sustainable output. Based on the assessment of literature in this part, the various metrics for identifying how a loan is secured and utilised by women agro-processors were developed. More significantly, the diverse purposes that these women put their loans to became obvious. The idea of women not being able to make their own choices was questioned since the survey found that most women apply their profits to build or expand on their firms.

Methodology

The research was done in Northern Region. Northern Region is situated in the Savannah ecological region, which is flanked 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 primary industrial operations in the Region include agro-processing activities such as rice milling, shea butter and vegetable oil production, cotton ginning, and textile as well as smock manufacture. Linkage of the agricultural sector to investment and commercial operations in the manufacturing sector is via such industrial crop output as rice, cotton, groundnuts, shea nuts and beans, notably soya beans. There are also small-scale companies engaged in car repairs, pre-fabrication of replacement components and production of agricultural tools. The rests include fabric and leather crafts, ceramics and woodwork (GSS, 2013).

The population of the Region is 2,310,939 and consists 1,141,705 men and 1,169,234 females (GSS, 2021). Among the districts in the Region, Tamale Metropolis has the biggest

population (374,744), followed by Nanumber North (188,680), while Nanton has the least population (50,767) (GSS, 2021). The average household size of 5.2 individuals is larger than the national average of 4.4 persons owing to the extensive practice of polygamy, and nuclear and extended family structures. The Region achieved an overall literacy rate of 4.9%, which is substantially lower than the national average of 21.9%. A total of 62.5% of the population are not literate in any language, whereas only 16.3% and 1.5% are literate in English exclusively and a Ghanaian language solely correspondingly (GSS, 2013). Tamale Metropolis has the lowest percentage of the male population that has never gone to school (27.7%), followed by Bunkpurugu-Yunyoo (38.4%), Bole (47.9%), while the rest districts report more than 50%. The most urbanized city in the Region is the Tamale Metropolis (65.4%), followed by Saveligu Nantong (30.3%), while Talon-Kumbugu is the least urbanized area. Skilled agricultural, forestry and fisheries workers represent the majority of the employed labour force (74.0%); whereas clerical, service and sales workers make up the lowest percentage of the labour force (0.4%) in the area (GSS, 2010). However, a large number of all businesses in the Region are in the services sectors (such as financial institutions and banking, retail and communications); whereas around one-fifth are in both agriculture and industry (GSS, 2014). In terms of individuals' involvement by establishments, more than three-quarters of persons are involved in the service sector while a comparatively lower number of persons are engaged in agriculture and industry (GSS, 2014). Further, informal businesses, especially small-sized and micro-sized enterprises are dominating with fewer than 10% of firms in all the districts functioning in the official sector (GSS, 2014).

A cross-sectional survey approach was utilised with which data was acquired from selected women involved in shea and rice processing. Both quantitative and qualitative approaches of data collection and analysis were applied in this research. The population for the research encompassed all women working in agro-processing activities, including: the processing of maize, rice, shea butter, soybeans, cassava and groundnut oil among others, and are inhabitants in the Tamale Metropolis and the Kumbungu District of the Northern Region of Ghana. The Northern Regional Office of the Ministry of Food and Agriculture's agro-processing mapping, as well as the 2010 Population and Housing Census, indicate that only women who process rice and shea butter, the two processed foods that women in the Region consume most frequently, were the focus of the sampling effort (GSS, 2013). However, during data collection, a sample of all the women who process rice and shea butter was chosen for an interview because surveying the entire population would have been very costly and technically challenging, particularly when the population is unregistered (Anderson et al. 2016).

The sample size for this research was set using a statistical approach to guarantee that conclusions may be drawn for the total population. The sample size was determined using the desired margin of error formulae as follows:

$$E \; Z_2 \; / \sqrt{n} \qquad [1]$$

where E denotes desired margin of error, n is the sample size, σ is the sample estimate of the standard deviation, and Z_2 is the Ƶ-critical value which is determined from the

confidence level. From equation [3.1], the sample size formula is deduced as follows:

$$n = \frac{Z^{2}\,\sigma^{2}}{e^{2}} \quad [2]$$

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_{2}), the sample size of 410 women agro-processors was determined as follows;

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

Therefore, the sample size for the research is roughly 410 agro-processing women. However, data from just 402 respondents were included for analysis owing to missing data for 8 respondents.

Probability sampling approaches comprising purposive selection and random sampling were respectively applied to determine the research regions and respondents from whom data was gathered for the study.Nonetheless, the application of any probability sampling approach principally relies on the availability or development of a full list of sampling units and/or numbers and locations of all respondents in the enumeration regions to construct a complete sample frame. It was based on this that a listing of all women in shea butter and rice processing activities was done in all enumeration regions before respondents were randomly picked using the Microsoft Excel application 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 stage, 9 and 6 enumeration villages respectively were picked from Tamale and Kumbungu Districts based on the concentration of women agro-processors. In the final phase, owing to the absence of a full sample frame of women in shea butter and rice processing in all the chosen areas, a total of 28 women were evenly distributed to each of the selected communities in the two districts, which translated into 420 women. Thus, a total of 252 and 168 respondents were assigned for random sample in Tamale Metropolis and Kumbungu District, respectively. However, data from just 402 respondents were included for analysis owing to missing data for 18 respondents. Data on socio-economic characteristics of respondents obtained included: age, marital status, educational level, household size, agro-processing type, start-up capital, right to asset ownership, gender stereotypes, company size and usage of microfinance products.

Data were obtained utilising the face to face approach with the use of questionnaire for quantitative information and interview guide for focus group talks for qualitative data. The data gathered was examined using quantitative and qualitative analytical approaches. Contingency tables and the use of the Pearson Chi-square test were used to evaluate data on the link between socio-economic features of women agro-processors and their usage 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 ( ), the null hypothesis (H_0) will be rejected if the p-value . The qualitative data was anlysed using content analysis.

Results and Discussions

Borrowing among Women Agro-Processors

90% of those surveyed had ever taken out a loan or credit from one or more sources. Only 40 respondents (about 10%) said that they had never borrowed cash to pump into their firms. The agro-processors questioned generally obtained their loans from several sources with some of them receiving loans from multiple sources. However, the majority (81%) of respondents typically obtained for their loans from MFIs and friends/relatives (72%). Some of them also commonly borrowed loans from Susu or Village Savings and Loans organisations (36%), money lenders (45%), banks (12%) and others (2%) as indicated in Figure 1. As shown in Figure 2, the majority of respondents who took out loans (84%) said they frequently invested in their agro-processing businesses; 35% said they frequently invested in businesses other than their agro-processing businesses; and 45% and 28%, respectively, said they frequently borrowed money for personal use and for other people, such as their husbands or family members.

Loans

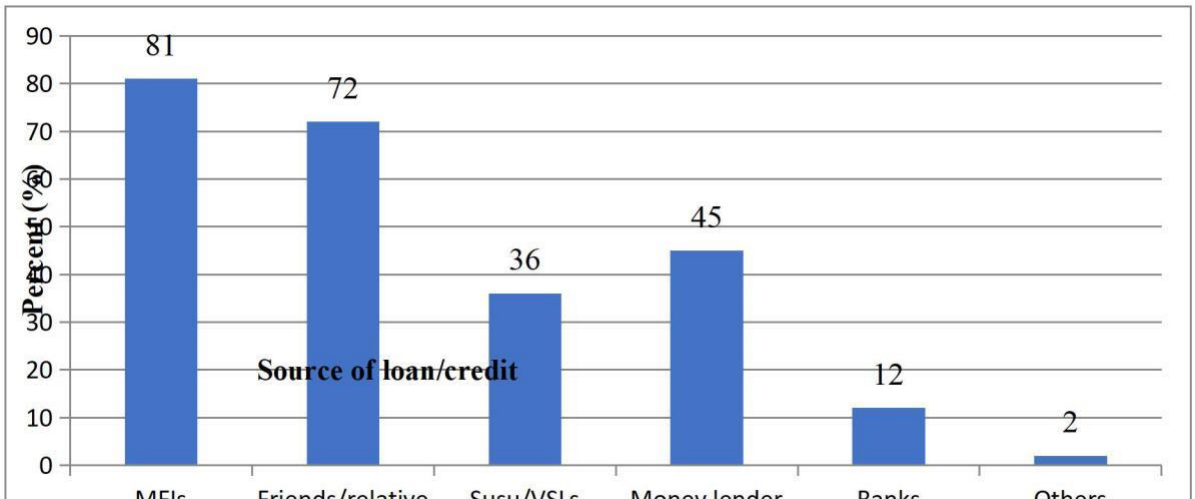

Figure 1: Bar Chart Showing Distribution of Source of Loans. Source: Field Survey, 2019.

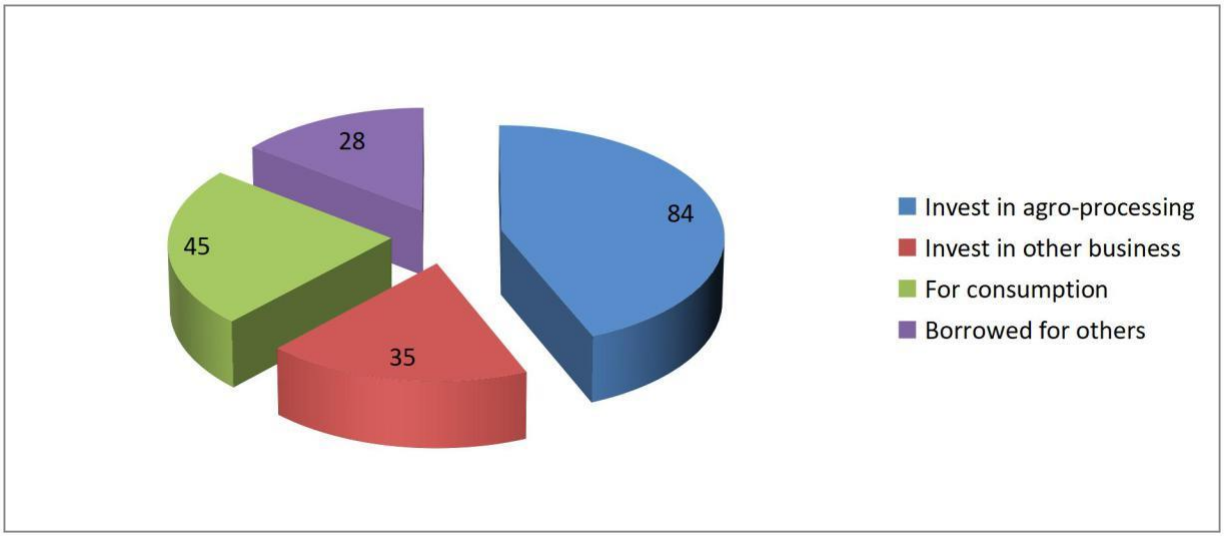

Figure 2: Pie Chart Showing the use of Borrowed Money. **Source:** Field Survey, 2019.

This means that the existence of women micro-enterprises relies largely on access to microfinance services. This outcome is not unexpected given the major objective of these women in contracting credit/ loans is to enhance their agro-processing companies. This further shows that, even if certain pieces of research claim that women microfinance borrowers do not utilise their borrowed monies for the stated goals and that some women even borrow for their husbands, it is not generalizable to all borrowers. This conclusion of the research is in accordance with that of Boateng, Boateng and Bampoe (2015) who stated that most microfinance loan benefiaries utilise the contractual credit for the growth of their enterprises. The conclusion also corroborates that of Sagarik (2016) whose research indicated that most agro-processors put their borrowed microfinance resources into their agro-processing enterprises. 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 verified during a focus group discussion when one of the respondents made a comment stating;

"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 responder on the 5th of May 2024 at Darigohini).

Furthermore, it was discovered during a key informant interview that women are not allowed to make choices in their homes because of the cultural belief that males should be the ones to make decisions about the family since they are the family's head. As such, some microfinance participants end up not utilising credits/loans offered to them by microfinance organisations for the stated goals. This is because traditionally, husbands must authorise for their wives to apply for loans and thus are thought to have the authority to make choices on how loans obtained by their wives should be employed; with the rationale being that the men must pay when the women incur obligations. This is considered to impede the expansion of women agro-processing firms and subsequently, greater default rates among microfinance participants. This was reinforced by a comment made by a key source from one of the microfinance organisations during an interview;

"Some of the women borwers some times do not use their loans for the intended purposes especially those who depend greately on their husbands to take decisions,. A typical case is a sean I saw where a man was beating his wive 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 5th of May 2024 at Bonzali Rural Bank).

Socio-economic Factors Influencing Respondents' Credit Utilization

The usage of borrowed money from microfinance firms is crucial in the enhancement of the overall well-being of women borrowers. However, individual utilisation of borrowed cash mostly relies on their socio-economic and other factors. As such, the research explored socio-economic and other aspects impacting women agro- processors' utilisation of borrowed finances.

Bivariate analysis was performed in examining the link between selected socio-economic characteristics and agro-processors' utilisation of borrowed financial resources. The assumption of this research is that; agro-processor's age, family size, religious background, ability to read and/or write, membership of associations/ organisations and principal livelihood activities have a substantial effect on their usage of credit. These elements are consequently anticipated to affect whether an agro-processor would spend her borrowed cash in her firm, utilise it for consumption or be gifted to others.

Age of Agro-processors and Credit Utilization

In examining the link between age and credit usage 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 undertaken. Respondents' age group as young, middle-aged, or elderly is likely to have a substantial influence on the investment of their borrowed cash in their enterprises or use it for domestic consumption or surrender to others, usually

husbands and other male relatives. The data was thus put to Chi-square analysis to evaluate the following hypotheses:

H0 there is no significant relationship between women agro-processors' age and the usage to which they typically put their credit.

Ha: there is a considerable relationship between women agro-processors' age and the usage to which they typically put their credit.

Results of Chi-square test given in Table 1 with Pearson Chi-Square ($\chi 2$) = 6.525; df = 6; P-value = 0.367 indicated no statistically significant link between age and usage of credit. As so, the null hypothesis could not be rejected. It is consequently stated that the age of agro-processors do not considerably impact their utilisation of loans. Thus, the young as well as middle and senior respondents were equally likely to invest their credit in their firms, utilise it for home spending, or be handed to others. Respondents in their middle-age were found to be more inclined to invest their borrowed cash in their agro-processing firms compared to the young 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 consequence, women in this age group in the research region work extremely hard at their enterprises as well as branching into other industries to make additional cash to satisfy their duties in their houses. Women within this age range also work extremely hard due of the high poverty rate in rural regions, notably in the northern portion of Ghana. This conclusion complements that of Egyir (2010), who showed in his research that, owing to the incapacity of most males to produce enough cash to take care of their home requirements, the survival of most families relies on women. Table 1 gives specific information on the age and utilisation of borrowed money by respondents.

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

Relationship being Tested	Pearson Chi-Square (χ^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 analysing the association between marital status and utilisation of credit, Chi-square test was performed to the three hypotheses:

H0: there is no substantial relationship between marital status and the utilisation of credit

Ha: there is a considerable relationship between marital status and the utilisation of credit

The Chi-square test findings as presented in Table 1, with Pearson Chi-Square ($\chi 2$) = 3.224; df = 3; P-value = 0.358, indicated no statistically significant link between marital status of agro-processors and utilisation of credit. As so, the null hypothesis could not be rejected. Thus, married respondents, as well as singles, do not vary considerably in their choice on how to utilise their credit. The non-significance of the Chi-Square test is unexpected, considering there is still a strong perception of patriarchy among members of the investigated groups. For instance, during a focus group session in one of the communities a member bemoaned 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 consequence, most of them utilise their roles as heads and leaders of families to control women in all areas of their economic and financial problems. We, women, have to seek their permission before taking part in microfinance programmes notably microcredit and so they most frequently try to prescribe to us as to how loans received should be utilized" (Verbatim Comment by a female respondent on the 5th of May 2024 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 conclusion aligns with that of Addai (2017), whose research indicated that the majority of the women clients of MFIs are married and so may need the services of MFIs to be empowered to manage their households. Table 1 gives specific information on respondents' utilisation of borrowed money and their marital status.

Status of Respondents within the Household and Use of Credit

Gender stratified household status as either led by male or female was evaluated against the utilisation of borrowed financial resources and Chi-square test was employed to test the following hypotheses:

H0: there is no significant relationship between the sex of household head and utilisation of credit.

Ha: there is a considerable relationship between the sex of household head and utilisation of credit.

With Pearson Chi-Square ($\chi 2$) = 6.723; df = 3; P-value = 0.041 the test result indicated significance (at 5% level of significant) between female household headship position and usage of credit (See Table 1). As thus, the null hypothesis was rejected in favour of the alternative. Thus, women agro-processors from a male-headed home vary greatly from those agro-processors from a female-headed household in how they frequently utilise their loans received from microfinance organisations.

This conclusion is not unexpected given the socio-cultural backdrop of respondents in the research region has male household heads as breadwinners of the home and makes it obligatory for males to take care of household consumption whereas women play a supporting role. Very few women agro-processors from male-headed families invest their

credit into other enterprises and this might be related to the fact that women need to obtain consent from their male heads (mainly husbands) before taking choices involving themselves or their children. As noted previously, owing to the substantial degree of patriarchy among members of the studied communities, most males utilise their roles as heads and leaders of families to control women in all areas of their life even including their economic and financial concerns. Also, cultural norms in the studied communities allocate duties and obligations to both women and men, and this impacts how women spend their borrowed monies from microfinance firms. This conclusion is in accordance with that of Mukamana, Sengendo and Okiria (2017), which revealed that women are needed to participate in revenue generating activities that might take place near to their homes. This is to let them divide their time between their economic activity and their reproductive obligations as women and by thus doing allow males to conduct the duty that demands greater mobility and engagement with the public.

Literacy of Respondents and Use of Credit

This section gives information on the use to which literate women placed their borrowed microfinance monies as contrasted to their peers who could not read and/or write and the findings are shown in Table 1. Chi-square test was employed to examine the following hypotheses:

H0: there is no significant relationship between the literacy of women agro-processors and their utilisation of loans.

Ha: there is a significant relationship between the literacy of women agro-processors and their utilisation of loans.

Applying Pearson Chi-Square ($\chi 2$) = 5.845; df = 3; P-value = 0.018 as given in Table 1, the null hypothesis was rejected in favour of the alternative hypothesis. Thus, there was a substantial link between the literacy of women agro-processors and their usage of loans. Most of the respondents who could read and write were deemed more inclined to spend the loan into their agro-processing enterprises compared with 63.6% of processors who could not read and write.

The reasons for most literate women agro-processors' use of their credit in their agro-processing enterprises might be that, with their education, they could have superior understanding about loan terms and conditions compared to women processors who cannot read and/or write. Additionally, literate women agro-processors may also have appropriate and better understanding on the repercussions of defaulting in the payments of their loans on their enterprises and may take suitable preventive measures with respect to the usage of borrowed money. This study confirms that of Asanoy (2004) which demonstrated that educated borrowers had greater levels of knowledge and skills in loan use compared to illiterate ones.

Respondents' Location and Use of Credit

Women agro-processors' location of residence as rural, peri-urban and urban were imagined to effect their utilisation of borrowed financial resources. As such, these hypotheses were created and evaluated using Chi-square test to investigate the association between location of responndents and and their usage of credit facilities. The findings are shown in Table 1.

H0: there is no significant relationship between residential location of women agro-processors and their use of credit; Ha: there is a significant relationship between residential location of women agro-processors and their use of credit.

Analysing using Pearson Chi-Square ($\chi 2$) = 10.872; df = 6; P-value = 0.092 as stated in the Table 1, the null hypothesis was rejected in favour of the alternative. Thus, the research indicated a significant relationship at 10% of significance between home location of women agro-processors and their usage of loans. Respondents from peri-urban and urban areas were found less inclined to invest their borrowed cash in their agro-processing firms compared with their rural counterparts. It might be suggested that because of the high cost of living in the peri-urban and the urban districts combined with their spending on social amenities which are nonexistent in the rural communities, could explainthis conclusion. It might also be the availability of additional business alternatives in the peri-urban and urban regions in which agro-processors could diversify their livelihood activities as compared to processors in the rural areas. This conclusion confirms that of Ibrahim and Zareba (2015), whose research findings reveal that loan use and repayment performance are highly impacted by the geography of borrowers. Table 1 gives specific information on the utilisation of borrowed money from microfinance organisations and respondents' location.

Religious Background of Respondents and Use of Credit

In examining the link between the religious background of respondents and their use of borrowed microfinance resources, the following hypotheses were established and evaluated using Chi-square test of relationship and the findings are shown in Table 1.

H0: there is no significant relationship between religious background of respondents and their usage of credit
Ha: there is a significant relationship between the religious background of respondents and their usage of credit.

The test findings, as shown in Table 1, with Pearson Chi-Square ($\chi 2$) = 7.319; df = 3; P-value = 0.062, indicated a significant relationship between religious background of respondents and their usage of credit. As such the null hypothesis was rejected in favour of the alternative. As stated in Table 1, majority of the women agro-processors who are followers of Islamic Religion were found to have spent their borrowed cash in increasing their agro-processing enterprises. This conclusion might be linked to the fact that they have bigger family sizes since the religion encourages members to give birth to greater number of children, therefore higher labour force that can be tapped into their agro-processing enterprises as output grows. The disparities in the usage of borrowed money by agro-processors who are followers of Islamic Religion, and the Christian Religion could possibly be related to variances in belief systems of these faiths on contracting loans. This conclusion confirms the work of Mansori et al. (2018), which demonstrated that adherents of faiths had distinct behaviours in decision-making over contracting loans and loan repayment performance. Table 1. gives specific information on the utilisation of borrowed money and the respondent's faith.

Membership of Association and Use of Credit

The research also investigated the association between membership of a group and utilisation of borrowed cash. 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 connection was employed in examining the following hypotheses:

H0: there is no significant link between agro-processors' membership of association and use of credit;

Ha: there is a substantial relationship between agro-processors' membership of association and use of credit.

Table 1 displays cross-tabulation of membership of association and utilisation of credit and Chi-square test findings. 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 substantial link between membership of organisation and the utilisation of credit at a 1% level of significance. Respondents who belonged to associations were found more inclined to spend their credit into their agro-processing firms compared with those who did not belong to any group.

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 assumption was corroborated by one shea butter processor during a focus group discussion when she remarked ;

"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 instructed us on financial literacy, how we should invest our borrowed monies and how to maintain records of our enterprises to see whether they are expanding or not" (Verbatim Comment by a female respondent on the 9th of May 2024 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 consequence, agro-processors in associations debate topics surrounding their livelihoods activities and microfinance products offered to them and how to invest and manage them to be able to pay back their loans without any difficulties. Associations also function as collateral for women agro-processors when they seek for micro-credit facilities from microfinance banks that operate based on the solidarity group's concept. These results match those of Anderson et al. (2016) which suggested that most clients of microfinance join organisations because of the prospect of acquiring loans, the network and assistance from their peers. Table 1 offers information about the link between agro-processors utilisation of borrowed money from microfinance institutions and membership of organisations.

Household Size of Respondents and Use of Credit

Agro-processors generally depended on their family's labour sources for their labour demand; as such, the research investigated the link between household size and usage of borrowed money by using the Chi-square test to the following hypotheses: H0: there is no significant relationship between household size and use of credit by women agro-processors, Ha: there is a substantial 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 indicated a significant association between household size and usage of credit and as such, the null hypothesis was rejected in favour of the alternative. As demonstrated in Table 1, respondents from big households were more likely to use their credit for household expenditure. Thus, agro-processors with modest family sizes always had a greater chance of not having issues in the return of their borrowed cash. This conclusion corroborates that of Zareba, (2015), whose research indicated that, by spending a bigger proportion of borrowed microfinance money into operating their agro-enterprises, there is the potential to earn more revenue via improvement in the company performance. Thus, loan use influences payback rates. Table 1 gives specific information on women agro-processors' utilisation of borrowed money and their family sizes.

Conclusion

The results of the research reveal that agro-processors utilise credit acquired from microfinance institutions in diverse ways include investing in their agro-processing firms and other businesses as well as borrowing for consumption and for other members of the family. The research also revealed a strong link between Agro-processor's gender, household headship status, literacy levels, locality, religious background, membership of organisations and family sizes and their utilisation of loans from microfinance institutions. This means that these characteristics are major elements that impact the use to which individuals use their borrowed money from microfinance firms. However, no statistically significant association exists between agro-processors' marital status, age, and utilisation of borrowed cash.

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 consequence, most of of the males utilise their roles as heads and leaders of households to control women in all areas including their economic and financial problems. The research shows that the socio-economic and other features of women agro-processors have a strong association with their use of microfinance products. The research also suggests that credit is fungible since microfinance clients' families utilise their borrowed resources in many ways that meet their demands and fill their funding gaps effectively. Borrowed microfinance funds are utilised by agro-processors for funding their capital needs and at the same time, for consumption smoothing, health and education of their homes. Due to the high prevalence of patriarchy among members of the study communities, some males utilise their roles as heads and leaders of families to dominate women in all parts of their life even including their economic and financial

concerns. That instance, some men would prescribe to their spouses as to how loans received from microfinance organisations should be used.

Recommendations

Drawing from the study's results, the District Assemblies, NGOs, and other Civil Society Organisations (CSOs) functioning in the northern region of Ghana are advised to step up their educational and advocacy efforts regarding women's economic empowerment. This can be achieved by enhancing the access and ability of women agro-processors to utilise microfinance products and services for increased productivity within their agro-processing businesses. Microfinance institutions should also campaign for men's support for the financial empowerment of women. Microfinance institutions should set up special or educational credit facilities that women agro-processors can use to pay for their wards' educational needs or other expenses outside of agro-processing activities, as a result of credit's fungibility, which leads to women using their borrowed funds for purposes other than agro-processing.

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