



EXTENT AND DETERMINANTS OF WOMEN PARTICIPATION IN AGRO-PROCESSING SMALL AND MEDIUM ENTERPRISES (SMEs) IN DAR ES SALAAM-TANZANIA

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List of Abbreviations

AfDB	African Development Bank
BRELA	Business Registrations and Licensing Agency
DHM	Double-Hurdle Model
ESRF	Economic and Social Research Foundation
EU	European Union
FAO	Food and Agriculture Organization
FSDT	Financial Sector Deepening Trust
GDP	Gross Domestic Product
IFC	International Finance Cooperation
IGC	International Growth Centre
IIDS	Integrated Industrial Development Strategy
ILO	International Labour Organization
IMED	Institute of Management and Entrepreneurship Development
MIT	Ministry of Industry and Trade
MSE	Micro and Small Enterprise
MSMEs	Micro, Small and Medium Enterprises
NGOs	Non-Governmental Organization
SIDO	Small Industries Development Organization
SME	Small and Medium Enterprises
SSA	Sub-Saharan African
TAFSIP	Tanzania Agriculture and Food Security Investment Plan
TBS	Tanzania Bureau of Standards
TCCIA	Tanzania Chamber of Commerce, Industry and Agriculture
TFDA	Tanzania Food and Drugs Authority
TMLI	Tanzanian Livestock Modernization Initiative
TWCC	Tanzania Women Chamber of Commerce
UDEC	University of Dar Es Salaam Entrepreneurship Centre
URT	United Republic of Tanzania
WAS	Women Participants in Agro-Processing Enterprises
WED	Women Entrepreneurship Development
WFP	World Food Program

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Abstract

The role of women in the promotion of agriculture and industrial development in Tanzania has recently become paramount. The existing studies on the role of women in agriculture sector have dominantly focused on challenges and opportunities and ignored the determinants and extent of their participation in agro-processing sector. This study was therefore set to examine the determinants and extent of Women participation in Agro-Processing Small and Medium Enterprises (SMEs) in Dar es Salaam Tanzania. Using a cross-sectional research design, the study gathered data from a total of 184 women agro-enterprises SMEs in Dar es Salaam. The analysis employed Double hurdle model for the determinants of participation in the first stage (probit model). This was followed by determining the extent of participation by using Truncated Regression Model. The study found that, different socio-economic and institutional factors affect participation and extent of women participation in agro-processing activities. Based on these findings, the study recommends policy that supports inclusion of women in the agro-processing sector; strengthen Women groups and cooperatives at the processing level and provide expert visits and consultations. Such measures will certainly facilitate a significant improvement in the agro-processing sector. The study further capitalizes the need for capacity building in entrepreneurship and agro-processing and coordinated institutions and policies to support women engagement in agro-processing activities.

Keywords: *Agro-processing, women SMEs, entrepreneurship*

Introduction and Background

Agro-processing is the process of transforming, through manufacturing, raw materials and intermediate products that originate from agriculture, forestry and fisheries into finished products. The agro-processing industry has a standard classification of the products such as food, beverages, paper products, wood and wood products, textile, tobacco, rubber products, and footwear, leather and leather products (FAO, 2000). In the developing countries like Tanzania, the level of agro-processing is still very low and is highly associated with poor infrastructure development in both rural and urban areas. As a result, these countries continue to export unprocessed agro-products, failing the domestic agro-processing industry to fully meet the requirement of realizing the value addition objective (ESRF, 2015). In the mid-1980s women comprised 54% of those economically active in agriculture. Approximately 98% of rural women classified as economically active are engaged in agriculture. Women farmers also contribute substantially to both commercial and subsistence agriculture, including livestock and fishing, as casual laborers and unpaid family workers (ILO, 2012).

Majority of Tanzania's population depends on agriculture as the principle source of livelihood. Agriculture provides more than two-thirds of employment and almost half of the country's GDP. Women play an essential role in agricultural production. The sector is female-intensive, meaning that women comprise a majority of the labor force in agriculture (54%). In Tanzania, the share of adult population working in agriculture is higher than regional averages, especially for women. Up to 81% of the female population works in agriculture in Tanzania, compared to 55% in the rest of sub-Saharan Africa (Leavens and Anderson, 2011).

The Hidden Harvest report (World Bank, FAO and World Fish, 2012) found that women make up 47 percent of workers in the fisheries supply chain, which is equal to about 56 million jobs in the harvest and post-harvest sectors. Just in the harvest sector, FAO (2012) estimated that 5.4 million women worked either as fishers or fish farmers (data of 2008). Women account for half of the workforce in inland fisheries, while in Asia and West Africa, 60 percent of seafood is marketed by women. FAO (2012) also estimated that at least 30 percent of the people employed in fisheries (harvest and post-harvest) were women. If one considers that a significant portion of contributions by women go unrecognized, then the actual figures could be higher than expected, and they could even surpass 50 percent (Weeratunge and Snyder, 2009).

The engagement of women in agro processing in Tanzania still needs recognition and women need to be taken seriously in the planning process. This is because, although, the involvement of women in Agriculture and fisheries has not only made the survival of the fishing communities and farmers possible but has also helped to preserve the way of life of artisanal fishing communities and farmers. The numerous outlets for employment in the artisanal sector and agriculture should be noted and creatively integrated into the economy.

It needs no further emphasis that Small Scale agro-processing is an important sub-sector in Tanzania since it absorbs raw-materials from agriculture as well as creates employment and a major source of income to individuals and national level (Kipene et al., 2015).

However, growth of small agro- processing firms is encounter challenges as most of them collapse in one to two years after they have been established. Even those which survive, they do not grow to maturity as expected (Mwang'ombola, 2005). The development of small agro-processing firms has been encouraged by Tanzanian government since 1965 to date (Kipene et al., 2015). The poor performance of firms is closely associated with policy-related problems, which include, among other factors, failure to maintain and keep the firms running. There is an emerging consensus that promoting gender justice in value chain development is not only a right's issue for women, but also makes 'business sense' for households, enterprises, and ultimately the national economy (Mayoux, 2012). Furthermore, Tanzanian government has put forward an emphasis on the role of gender in agricultural development through different policies and plans such as Tanzania Agriculture and Food Security Investment Plan (TAFSIP) (URT, 2011) and National Strategy for Gender Development in the Tanzania (URT, 2008). High level decisions in this context are challenged by lack of adequate evidence for women contribution to the Agro processing sector development.

Recent studies have shown that a number of factors may constrain the ability of small and medium scale agro-based enterprises to effectively manufacture and market processed food products. These studies have focused on the challenges and opportunities for women in entrepreneurship, access to credit, market access, initial capital, unequal distribution of responsibility, and skills in business (Isaga, 2018; Kapinga and Montero, 2017; Magesa et al., 2013; Chuma, 2014; Jagero and Kushoka, 2011). However, the determinants and extent of women participation in the agro-processing enterprises, which justify their critical contribution, are not adequately explored. As such, the general objective of this study was to assess the determinants and extent of women's participation in the agro-processing enterprises in Tanzania using the case of Dar es Salaam City which is the largest city and business capital of Tanzania.

This study sought, therefore, to assess Women participation in Agro-Processing Small and Medium Enterprises (SMEs) in Dar es Salaam Tanzania. Specifically, it sought to:

(i) analyze the determinants of Women participation in Agro-Processing Small and Medium Enterprises (SMEs) in Dar es Salaam, (ii) analyze the extent of Women participation in Agro-Processing Small and Medium Enterprises (SMEs) in Dar es Salaam, and (iii) examine the roles played by the government and other institutions of women engagement in Agro-processing in Dar es Salaam.

To achieve the objective of the study the following research questions were addressed: (i) what are the determinants and extent of Women participation in Agro-Processing Small and Medium Enterprises (SMEs)?, (ii) what is the extent of Women participation in Agro-Processing Small and Medium Enterprises (SMEs) in Dar es Salaam? and (iii) what are the roles played by the government and other institutions regarding women engagement in Agro-processing?

As observed before, agriculture is among the most important sectors that contribute significantly to the country's economy by providing employment to the majority of Tanzanians. Its significant contribution to the country's GDP is highly acknowledged (Tumbo et al., 2018; Sanches-Pereira et al., 2017; Chongela, 2015). This implies that agro-based industrialization is a key plank of Tanzania industrialization strategy as elaborated in the Integrated Industrial Development Strategy (IIDS, 2025) (Mwang'onda et al., 2018; Msami and Wangwe, 2016). However, the potential of small-scale agro-processing as an element is at present still poorly developed in Tanzania because the vast majority of agricultural produce are still exported in raw or unprocessed form (Lwesya, 2018; Mgeni and Bangi, 2014). Opportunities for processing and other value adding activities from agricultural raw materials have started to emerge as local and foreign investors increasingly recognize the potentials of this sector (Thurlow et al., 2018). Investment in agro-processing industries entails adding value, and improvement of standards and quality (Masamha et al., 2018; Kunda and Chihana, 2017). Available opportunities in the agro-processing sector in Tanzania include Fruit/Vegetable processing, Cashew nut Processing, Oil seeds, Meat and Dairy farming, to mention few.

Paradoxically, women are known to be more involved in agricultural activities than men in Sub-Saharan African (SSA) countries (Mmasa, 2013). For instance, in rural communities, women play a key role in supporting their households in achieving food and nutritional security, generating income and improving rural enterprises which can fuel local economies (Osuntande, 2014). Particularly, in Tanzania women play a certain role in the private sector, especially within the context of the micro, small and medium enterprises (MSMEs). It is widely accepted that micro and small enterprise (MSE) sector has potentials to provide a livelihood for a significantly large number of people in developing countries (Dagne, 2017). Women's effective participation hinges upon having in place research informed policies addressing specifically challenges facing women as they strive to participate in the sector.

Literature Review & Theoretical Background

This chapter presents the theoretical and reviews empirical past studies with a view to get perspectives related to agro processing industry. The Chapter covers the definition of Agro-processing SMEs, Women Agro-processing SMEs in Africa, constraints for Women participation in agro processing SMEs, factors influencing women to engage in agro-processing enterprise in Tanzania and opportunities for Women participation.

SMEs are defined differently worldwide. The European Union (EU) defines companies employing fewer than 10 employees as microenterprises, those with more than 10 but fewer than 50 employees as a small enterprise whilst those with more than 50 but less than 250 employees as medium enterprises. On the other hand, the United States refers to businesses with fewer than 100 employees as small, while medium-sized business often refers to those with more than 100 employees but fewer than 500 employees. In Canada, a small business is a business with less than 100 employees (if the business is in goods-producing business) or fewer than 50 employees (if the business is a service-based business), whilst a medium sized business should have more than 100 employees but less than 500 employees (Carsamer, 2009; Alhassan et al., 2016).

In the context of Tanzania, micro enterprises are those engaging up to 4 people, in most cases family members or employing capital amounting up to TZS 5 million. The majority of micro enterprises fall under the informal undertakings engaging between 5 and 49 employees or with capital investment from TZS 5Millions to TZS 200 million, while medium enterprises employ between 50 and 99 people or use capital investment from TZS 200 million to TZS 800 million and large enterprises employ above 100 employees and the capital investment in machinery is above TZS 800 million (URT, 2002).

2.1 Women Agro-processing SMEs in Africa

Several business ventures in Africa involving different types of food and cash crop processing dominate the agro-processing industry. These business ventures in the agro-processing industry consist of food, oil, drink and cash crop processing. Agro-processing is a very unique industry where food or other end products are processed by adding value to raw produce such as food and cash crops, as well as fish from both marine and inland sources. Agro-processing activities undertaken by only indigenous women include extraction of edible oil from palm fruit kernels, coconuts, groundnuts and shea nuts (Frederick and Dzisi, 2008).

In various African countries, the share of women participation in micro and small enterprises is relatively high: 65 percent in Ethiopia, 48 percent in Kenya, 43 percent in Tanzania and 67 percent in Zimbabwe. However, a number of women owned enterprises do not grow beyond the micro-level of five employees (Kiraka et al., 2013). This characterises the SME sector in general, but it is more evident among women-owned enterprises (Stevenson and St-Onge, 2005). So, the challenge in Africa is less about trying to increase the number of women entrepreneurs and more about how to legitimize and strengthen the base of their activity so they can grow the enterprises as already indicated elsewhere.

2.2 Constraints for Women participation in agro processing SMEs

Despite the massive contribution of women through agricultural processing SMEs, they face serious constraints in making decisions about their participation in the sector in Tanzania and other SSA countries. Feenstra (1998) attributes such constraints to the dynamic landscape of agriculture globally, which is characterized by increased demand for high value agricultural products, processed products, and pre-prepared foods. According to UN-Commission for Africa (2015) some of the features of the landscape include integration of markets and disintegration of production processes. The literature provides some indicators that such features have increased both the vulnerability and opportunities particularly for women who are involved in the processing stage of the value chain. At the same time, the literature by African Development Bank-AfDB (2015) highlights climate change and its associated variability and uncertain weather patterns as potential threats for crop losses and low yields, and which consequently lead to food insecurity and negative coping strategies. This suggests that, majority of women in Tanzania, just like in many SSA countries, are overburdened and cannot afford the upfront capital, required mainly for climate buoyant infrastructure, assets and practices.

The International Finance Cooperation-IFC (2016) categorized women's typical processing activities as being energy heavy and time-heavy. The prominent energy heavy activities include milling and de-hulling of grains, and walking with loads, among others. The prominent time-heavy activities are walking, waiting, and manual milling. Different agricultural crops constitute a group of core crops for which production and manual processing is significant, with a high involvement of women in postharvest activities. IFC (2016) also attributes women's access to storage as lower than that of men because of the required access to transport and financing. Apparently, the constraints women face in processing presented in literature are similar to those faced in production. The IFC highlights lack of access to knowledge and resources (including affordability) due to the women's unacknowledged roles. The study in Nigeria observed similar constraints namely, lack of capital, lack of government support, poor weather condition and diseases; lack of capital and a combination of the listed constraints (Oladejo, Olawuyi and Anjorin, 2011).

Despite the available evidence regarding roles and constraints facing women in agro-processing sector, the increased participation of women and changes in production technology necessitates context-specific empirical studies to capitalize on their extraordinary productive potentials.

Meena et al, (2014) study in Punjab state-India was conducted to iron out constraints perceived by rural women Agro-Processors in adopting modern post-harvest technologies. The study revealed that socio-economic, technological and farming constraints were more prominent than extension and marketing constraints. The study has a similar orientation with Khapayi and Celliers (2016) on factors limiting and preventing emerging farmers

from progressing to commercial agricultural farming in the Eastern Cape Province (South Africa). The two studies highlight the governments' crucial role to motivate women market participation by encouraging group marketing. Relevant to Tanzanian context, the studies recommend measures to address the constraints, appropriate policy interventions in the areas of training needs and thus needs-based and skill-oriented training of the agro-processors in order to upgrade their knowledge and skills in modern technology processing.

Mori (2016) conducted a Women Entrepreneurship Development (WED) survey in Tanzania, using a combination of both secondary and primary data sources and information. These women entrepreneurs and SMEs (majority of which are agro-processing) were identified by UDEC, MIT, IMED, TCCIA, TWCC and trade offices from Dar es Salaam, Mwanza, Dodoma and Tanga regions. The study documented multiple difficulties which impede women capacity to start and grow businesses in sectors that generate quality jobs. Acknowledging the untapped potentials for entrepreneurial development, the author noted further that women are often impeded by lack of the necessary capacities, skills and resources. These would create a cultural environment that makes it more difficult for women to start and run enterprises based on traditional reproductive roles and power relations. Given the scope of this study, any initiatives to address the constraints of women participation in agro-processing sector must be focused and acknowledge the role of Small-Scale Women agro-processors in order to capture their productive potentials and avoid being disadvantaged throughout the value chain.

2.3 Factors influencing women participation in agro-processing enterprise

Substantial literature offers evidence that women and women SMEs have taken a critical role in the processing of agricultural produce, and the determinants of their participation connect to roles of various actors or stakeholders. Jeckoniah et al., (2012) explored the determinants of Women Empowerment in the Onion Value Chain, using a Simanjiro District case in Tanzania. The study sought to explore the linkage between women's participation in onion value chain development activities and their empowerment. The study employed four index scales to measure women empowerment, namely personal autonomy, household decision making, economic domestic consultation and freedom of movement. A composite women empowerment index was then developed to assess women empowerment. The findings indicated that, empowerment increased with education attainment, age at first marriage and women income. Women participating in the value chain development program were more likely to be empowered than their counterparts. Ordinal logistic regression analysis indicated existence of a significant relationship between women empowerment and marital status, education level, age at first marriage, land ownership and access to credits and participation in onion value chain ($P < 0.05$).

Recommendations in line with this study relate to the need for the government, non-governmental organization and farmers groups to provide women with gender and life skills education in value chain programs to sensitize and mobilize actors to challenge gender inequalities and promote women empowerment. While this is an ideal recommendation, there is limited evidence on the extent to which women make decisions to participate as a result of these support mechanisms.

Dietz et al., (2000) assessed the support measures to attract food processing entrepreneurs by government institutions, development agencies and the private sectors. Key areas sought decisive to strengthen and motivate rural based food processing include availability of credit facilities and working capital for small entrepreneurs, availability of a variety of technologies to choose from; technology packages in which individual components match; and skills and competence in technology maintenance in relation to respective business. The study aligns with Mmasa (2013) in a view that, diverse actors must contribute to reducing women's workloads, improve their health to increase productivity; promote education and training; identify strategies for women's economic empowerment; advocate the development of gender-sensitive statistics; and ensure that women's experiences and concerns are more fully integrated into the planning process. Mmasa's (2013) study about challenges and policy recommendations on participation of women in agriculture in Tanzania, similarly, noted that, the task of addressing women obstacles to participation can be very daunting. Given this fact, unless they are explicitly motivated to participate, the economy may not benefit from their potentials.

Okpachu (2018) used a Pearson's Gender Relations Theory to guide a descriptive study to determine the impact of Women participation in Small and Medium Scale Agricultural Enterprises (SMEs) on poverty reduction in Yobe State-Nigeria. The result from the study shows that women are involved in SMEs to earn income that will enable them take care of families. The logistic regression indicated that SMEs had impacted significantly on women in the study area. The study thus recommended for the need to enlighten women to participate in agricultural SMEs. The study also noted that, it is important for the government to create an enabling environment through the provision of facilities such as farming equipment, land to construct shops and funds to carry out their businesses so that they (women) can venture into SMEs. While the study is closely relevant to the situation in Tanzania, it indicates a growing conception about the role of the government intervention to women SMEs performance. This makes it important for studies to confirm the level that the government and other institutions are motivating women to engage in agro-processing activities.

2.4 Opportunities for Women in Agro-Processing

Women's access to the opportunities which increase their power over economic decisions and the control of the economic resources or benefits may lead to the generation of employment and income to women and development of the economy (SIDA, 2015).

African women play a central role in the continent's agriculture sector. As the backbone of the sector they represent 52% of the total population in the sector and are responsible for approximately 50% of the agricultural labor on farms in Sub-Saharan Africa (SSA). They also produce 60% to 80% of the continent's food.

In Tanzania women have opportunities in agro-processing through their engagement in the agriculture sector, forestry and fishing. The agriculture sector is characterized as female intensive, meaning that women comprise a majority of the labor force in agriculture (54%). Moreover, there are over 15 million smallholder farmers in the country, more than half are women (Nyomora et al., 2012). Majority cultivate one to three hectares, with limited access to modern machinery, inputs and improved technologies. Agriculture also comprises a greater part of women economic activity than men's: 81% of women, compared to 73% of men. In rural areas, that number rises to 98% for women.

Women have the opportunity of establishing meat processing plants, dairy products processing plants and cattle ranches, given the large livestock population the country is blessed to have; thus, the country is ideal for meat processing, packaging and processing of dairy products. Tanzania has the third largest livestock population on the African continent comprising 25 million cattle, 98% of which are indigenous breeds, complemented by 16.7 million goats, 8 million sheep, 2.4 million pigs, and 36 million chickens (URT, 2015).

Women with access to capital have the opportunity to be involved in the fishing sector through buying fish and fish products from the market, or directly from the landing sites, taking the catch home for processing and/or selling it in other areas. The areas to sell their fish will then depend very much on their own mobility and their access to ice and to processing techniques for preserving the products so they last longer without perishing (Lentisco, 2013).

There is an opportunity in rehabilitating old plants or establishing medium-scale processing plants for the processing of the cashew nuts produced in Tanzania. Cashew nut is one of the major cash crops in Tanzania, its production has risen to 120,000 tons annually. However, only about 10 percent of the cashew nuts produced within the country are processed in Tanzania. There is room, therefore, for women to engage in agro processing if there is rehabilitation of the old plants. They can initiate processing of cashew nuts within the country so as to increase the percent of cashew nuts processed and enhance the growth of exports of well processed cashew nuts to the outside world.

Women have the opportunity to invest in the leather sector such as establishment of modern tanneries and finishing production units for leather. This is because Tanzania has a large livestock population and produces about 2.6 million pieces of raw hides and skins annually. A large portion is exported raw and only 10 percent is processed. Hence the Investment in the leather sector should include establishment of modern tanneries and leather finishing production units to increase the percent of processed products. That would enhance creation of more job opportunities and income generation to the people within the country.

2.5 Theoretical framework

The theoretical framework of this study hinged on the link between Entrepreneurship and Institutional theory in an attempt to understand the factors and the extent to which they influence women engagement in agro-processing enterprises in Tanzania. This section provides an overview of the theory and how it merges with Entrepreneurship.

2.5.1. Entrepreneurship and Institutional theory

Entrepreneurship refers to the activity of setting up a business or businesses, taking on financial risks in the hope of getting profits (Ribes-Giner et al., 2018). On the other hand, Institutional theory seeks to explain organizational communication in terms of shared pre-existing rules, beliefs, and norms in the external environment of organizations (Lammers and Garcia, 2017). Various studies have widely acknowledged that entrepreneurs are both limited and enabled by the institutions (Bruton & Ahlstrom, 2003; Scott, 2007; Bruton et al., 2010).

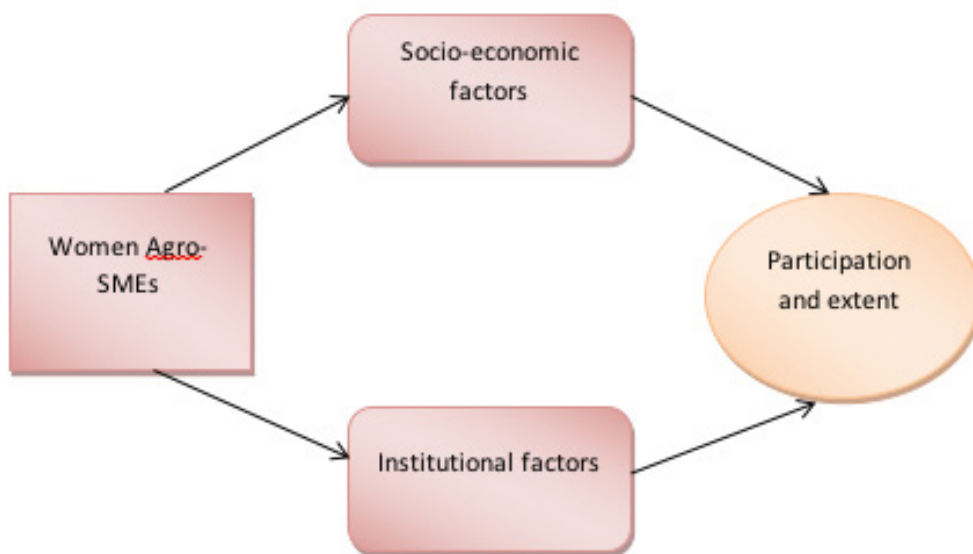
The institutional theory postulates that different institutional factors impact entrepreneurial efforts such as direct action of governments in constructing and maintaining an environment supportive for entrepreneurship as well as societal norms toward entrepreneurship. Specifically, the level of entrepreneurship that develops in a society is directly related to the society's regulations and policies governing the allocation of rewards (Baumol et al., 2009; Bruton et al., 2010). Governments can ensure markets function efficiently by removing conditions that create entry barriers, cause market imperfections and impose stifling regulations.

Therefore, in this study, socio-economic and institutional factors influencing entrepreneurial efforts have been examined. Based on the theory, women enterprises are considered to be facing different challenges related to the growth of their enterprises. It is assumed that with the supportive environment for entrepreneurship as well as societal norms toward entrepreneurship these barriers might be removed and create instead a path for the women Agro-enterprises in Tanzania to grow.

2.6. Conceptual framework

In this study, it is conceived that, the determinants and extent of women participation in Agro-processing are influenced by both socio-economic and institutional factors. Figure 1 presents the relationship of variables conceptualized in this study based on the theory above.

Figure 1. Conceptual framework: Determinants and extent of women participation in Agro-processing



Source: Field Survey (2020)

Research Methodology

This chapter presents research methodologies employed in this study. It describes research approach, research design, study area, study population, sample size, sampling technique, data collection, and analysis methods used.

3.1. Description of the Study Area

This study was conducted in Dar es Salaam Region. Dar es Salaam was selected because it is the largest commercial city in Tanzania with the majority of small and medium businesses (FSDT, 2012; Isaga, 2012; Mapunda et al., 2018). Two major districts were selected, i.e., Ilala and Kigamboni, to represent the five districts in Dar es Salaam, Tanzania. Ilala and Kigamboni districts were purposively chosen for the study because many SMEs are located in these districts.

3.2 Research Design

According to Kombo and Tromp (2006) research design is the scheme, outline or plan that is used to generate answers to research problems. It is the conceptual structure within which the research is conducted. Research design constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2009). Research design is the arrangement of setting to accumulate and investigate data in a manner (Mwakiluma, 2010). This study employed a cross-sectional design to collect data on relevant variables from different women engaged in Agro-processing activities. The information brought deeper insights and better understanding of the problems. The study reflects a mix of both qualitative and quantitative data and methodological treatments.

3.3 Data Collection

Data was obtained from both primary and secondary sources. Primary data was obtained using semi-structured and structured questionnaires while secondary data was obtained from journals, articles and research studies. Both quantitative and qualitative data were collected for the study. For the qualitative part of the work, semi structured interviews were used while for quantitative data, semi-structured questionnaires were used. The data was collected from the owners/managers and group leaders of all the sampled SMEs. The data generated through the questionnaires were analysed using STATA software.

3.4 Sample size and Sampling technique

One hundred and eighty-four (184) respondents who own enterprises were interviewed. Out of this, 57 were engaged in selling un-processed agricultural goods while 127 engaged in processing. Probability sampling technique known as a Two Stage Cluster Randomly Sampling technique was used. Generally, Cluster sampling is a sampling technique which involves dividing the entire population into clusters or sections and then the clusters are randomly selected (Turner et al., 1996; Hoshaw-Woodard, 2001). All the elements of the cluster are used for sampling. Clusters were identified using details such as age, sex, location, etc. Based on the Two Stage Cluster Randomly Sampling, firstly, the clusters were randomly selected. Secondly, from those selected clusters, certain elements for sampling were also randomly selected (Palinkas et al., 2015). In this study, with the consultation of trade and community development officers in each district selected, the list of SMEs involved in selling agricultural goods was scrutinized. Only SMEs owned by women were clustered, and thereafter grouped into processors and non-processors of agricultural goods.

Purposive sampling (non-probability sampling) technique was used based on the intention or purpose of the study. The selected elements entail the population which only suits the best for the purpose of our study. Key informants, i.e., trade and community development officers were also interviewed to share general information on the institutional support for women SMEs in each District.

3.5 Empirical methods

3.5.1 Determinants and extent of Women participation in Agro-Processing SMEs

This study employed the Double-hurdle model (DHM) with the assumption that, participation of women in Agro-processing sector and the extent of participation are two distinct or independent decisions. The Double-hurdle model was formulated by Craig (1971). In line with this study, the model assumes that women who own SMEs make two sequential decisions with regard to participation in the Agro-processing sector and the

extent of their participation. The double-hurdle model was adopted based on its advantage over the Heckman's sample selection model (Okoffo et al., 2016). The Heckman sample selection model assumes that no zero response will be present in the second hurdle of the analysis once the first hurdle is passed while the double-hurdle on the other hand recognizes the possibility of zero observations in the second stage (Wodjao 2008). Thus, in this study the first hurdle is participation in Agro-processing sector equation that was estimated by using a probit model as described in equation 1.

$$d_i^* = X'_{ii}\beta_i + U_i \quad U_i \sim N(0,1) \quad (1)$$

1 if $d_i^* > 0$ and 0 if $d_i^* \leq 0$

Where d_i^* the latent discrete participation choice variable that denotes binary censoring (i.e. 1 means the respondent is participating in Agro-processing sector, and 0 means otherwise). X'_{ii} are vector of explanatory variables hypothesized to influence participation choice (i.e socio-economic factors) and β_i s are vector of parameters and U_i is the standard error term.

The second hurdle involves an outcome equation, which uses a truncated model to determine the extent of participation in Agro-processing sector which was estimated using truncated regression model (Craig, 1971). The extent of participation was measured in terms of the proportional amount of capital invested in Agro-processing from the average capital of SMEs of all women interviewed (those who are processing and those who are not). In other words, the study interviewed women with similar Agricultural products, one was engaged in processing while the other was not. Therefore, the average capital was more or less the same for both groups but those who processed the Agricultural produce invested slightly higher than the rest due to processing costs.

$$\text{Extent of participation in Agro-processing} = \text{Proportion of Capital invested in Agro-processing} / \text{Average capital for all Women SMEs interviewed.} \quad (2)$$

A log-likelihood test will be conducted to justify the use of the double hurdle model over the Tobit model and it's expressed in equation 2 below:

$$\lambda = 2[LL_{probit} + LL_{Trunc} - LL_{Tobit}] \quad (3)$$

3.5.2 Government and other Institution roles of promoting Women participation in Agro-Processing Small and Medium Enterprises (SMEs)

The collected data were analyzed through preliminary, descriptive and inferential analysis. The preliminary analysis involved coding, cleaning and screening of data prior to doing the analysis. Descriptive analysis was used to compute frequencies, mean, standard deviations and percentages based on the respondent's responses.

Results and Discussion

This section is divided in four subsections. The first subsection describes the sample and provides the socioeconomic characteristics of women participants in Agro-processing enterprises (WAS). The second subsection provides sales details of WAS. The third and fourth subsections detail the results from probit regression and truncated regression model respectively by providing the in-depth explanation of significant variables.

4.1 Socio-Profile of respondents

From table 1 above, 42.9% of the respondents had primary education, 41.8 %had secondary education, 11.9 % of the respondents had University college education and 3.2 % of the respondents had other level of education. This indicates that, over 84% of the women respondents with low level education (primary and secondary education) engage more in agro-processing business than those with higher level education from University College and other. Women with higher level of education engage more in employability business and leave with those with low level education to engage in agro-process business. This tendency is likely to affect productivity in agro-process business.

More than 67% of the married women respondents engage more in agro-process business compared to single, widow and divorced at 21.2%, 9.2% and 1.6% respectively. This implies that married women play active role in agro-process business than other non-agro-process business. The household responsibility may be the factor for married women to dive more in agro-process business. The data indicate that, Women engage more in group kind of agro-process business, as 60.3% of respondents belonging to the Women economic groups than those in sole proprietorship, partnership and cooperation kind of agro-process business. Women are more reluctant to engage in cooperation for 3% and partnership for 5%. This may be attributed to by the fact that a greater number of women own group agro-process businesses.

Table 1: Socio-economic characteristics of women Agro-processing enterprises

Variable	Description and measures	Frequency	Percentage
Education Level	Average years of school		
	Primary education	79	42.9
	Secondary school	77	41.8
	University/College	22	11.9
	Other	6	3.2
Marital status	Marital status of respondent		
	1. Married	125	67.9
	2. Single	39	21.2
	3. Widow (er)	17	9.2
	4. Divorced	3	1.6
Business Ownership	The type of ownership of Agro-processing enterprises		
	Sole proprietorship	56	30.4
	Partnership	11	5
	Women Group	111	60.3
	Cooperative	6	3
Size of the SMEs	-Enterprises1	120	65.2
	Small-Enterprises2	54	29.3
	Medium-Enterprises3	10	0.05

Source: Field Survey (2020)

The results indicate also that the majority of the enterprises are within the micro-enterprises (65.2%), followed by medium enterprises (29.3%) and large enterprises (0.05%). This implies that most enterprises owned by women in the study area are still very small, with small amount of capital. The studies by Jagero and Kushoka (2015) and Ssendi and Anderson (2020) also noted that the size of the women's enterprises is influenced by the capacity problems mainly related to general level of education, technical and business management skills, including the sophistication to work with financial institutions, in terms of interest and commitment in the activity and the career and motivation to develop the activity among those who start business as an economic necessity.

4.2. Types of products that Women SMEs are processing

The study found that majority of SMEs (24.4%) are engaged in processing different types of Pickles such as Mango and Pepper Pickles. Pickles are easily made and take time to perish but also attract a significant market around the SMEs. Pickles are originally referred to spiced, salted vinegar that was used as a preservative and normally used as an appetizer for human feeding. Up to 22.8% of SMEs are engaged in processing and drying vegetables such as Amaranths (Mchicha), Sweet potato leaves (Matembele), Pumpkin Leaves (Majani ya Maboga) and Peppers (Pilipili).

Table 2: Types of products that Women SMEs are processing

Product	Frequency	Percentage
Dried Vegetables	42	22.8
Peanut Butter	23	12.5
Mixed Spices (Pilau Masala)	15	8.2
Tea Spices/Masala	25	13.6
Nutrious Flour (Unga lishe)	34	18.5
Mango, Peppers Pickles (Achali ya embe,pilipili,mbilimbi)	45	24.4

Source: Field Survey (2020)

Furthermore, 18.5% of the SMEs are engaged in processing Nutrious Flour (Unga lishe). Unga lishe is a combination of nutrients and nutrients from various grains. This flour is used in porridge for people with various health issues, Children, Pregnant Women, Breastfeeding and as a Breakfast for the Family. Furthermore, only 13.6%, 12.5% and 8.2 % are engaged in processing Tea spices, Peanut Butter and Mixed Spices (Pilau Massala) respectively.

4.3 Sales details

Table 3: Sales profile of women agro-processing enterprises

Variable	Description	Frequency	Percentage
Sales outlet if it's a designed market	Yes	59	32.0
	No	125	67.9
Sales outlet/types of customer	Businessman/Middleman	45	25.0
	Direct to the market	61	33.8
	Cooperative	2	1.1
	NGOs	6	3.3
	Supermarket	7	3.8
	Others (house to house/ friends/loyal customers)	59	32.7
Sources of market information	Direct from the market	96	52.2
	Businessman/Middleman	4	2.2
	Friends	81	44.0
	Media	3	1.6
If having a contract with customer	Yes	17	9.6
	No	159	90.3
If product is registered with authority (TBS/TFDA etc)	Yes	21	88.3
	No	159	11.6
Loss of products while transporting them to the market	Yes	6	4.1
	No	139	95.8
If selling on the same day after production	Yes	61	33.5
	No	121	66.4
If advertising the product(s)	Yes	65	35.3
	No	119	64.6

Source: Field Survey (2020)

4.4 Factors influencing Probability of women participation in Agro-processing

The results (in table 3) of the survey indicate that, 32.1% of respondents' sale their product in a designed market and 67.9% sale their product in un-designed market. The higher number of those who channel their sales in informal market might mean less revenue to the government in form of sales tax. Also, it can be seen from table 3 that, 25.0% of the customers are businessman/middlemen, 33.8% of the customers operate directly at the market; 1.1% are cooperative, 3.3% are NGO's, 3.8% are supermarkets. Other including friends, loyal customers and house to house selling occupy 32.7%. This means that direct market operations command more than 65% of the products produced. The findings show the main sources of market information as direct from the market at 52.2% and friends at 44%. This means that, markets are the main source of information. Other sources of market information are businessmen with 2.2% and media with 1.6%, which plays a small part in providing market information, which may be due to high cost of advertisements through media.

Up to 90.3% of the respondent do not have a contract with the customers and only 9.6% of the respondents had a contract with the customers. This means that there is less guarantee of keeping a customer for buying the product as there is no written agreement. The survey shows that only 11.6% of the respondents registered their product with regulatory authority (TBS/TFDA etc.) and 88.3% of the respondents do not register their products with the authorities. This means that the quality of the products is in question as they have not been checked against specified quality standards. Up to 95.8% of the respondents transport safely their product to the market without incurring losses/damages. Thus, larger amount of the product reach customers at the market while only 4.1% of the respondents lose some portion/quantity of their products on transit to the market. The result of the survey indicates that, 33.5% of the respondents sold their product on the same day after production while 66.4% of the respondents sold their product some days after production.

Table 4: Probit results (first hurdle) for the factors influencing Probability of women participation in Agro-processing

Variables	Description	Coefficient	Marginal effects	Robust Standard Error	z-statistics	P>Z
POP	Position in the Business	-0.799	-0.215	0.73	-1.1	0.272
BOP	Business Ownership	-0.376	-0.132	0.14	-2.77	0.006***
MRT	Marital Status	-0.153	0.042	0.17	-0.87	0.382
EDU	Education level	0.281	0.105	0.14	1.94	0.052*
IVS	Institutional Visit/Support	-0.032	0.186	0.23	-0.14	0.887
TOC	Type of the client/customer	0.246	0.096	0.06	4.19	0.000***
ECB	Engaged in Contract Business	1.109	0.204	0.39	2.86	0.004***
APA	Access professional advice (Agro-processing advices etc)	0.277	0.192	0.25	1.1	0.272
ATL	Access to Loan	0.593	0.109	0.28	2.12	0.034**
RPT	Registered Product	-0.315	-0.024	0.37	-0.84	0.399
PCT	Processing costs	-0.142	-0.052	0.22	-0.65	0.514
POC	Price of Commodity processed	0.283	0.129	0.11	2.55	0.011**
EXP	Experience in Agro-processing (years)	0.001	-0.019	0.03	0.02	0.987
AGE	Age of the respondent (Woman owns Agro-processing SME)	-0.010	0.004	0.02	-0.62	0.535
Constant		-0.410		3.02	-0.14	0.892
Regression diagnostics						
Number of observation	184					
Wald chi2(14)	92.55					
Prob > chi2	0.000					
Pseudo R2	0.4786					
Log pseudo-likelihood	-59.373					
Outcome correctly classified	83.70%					

Notes: *,** and *** indicate the variable is significant at 10%, 5% and 1%

Source: Field Survey (2020)

4.4.1 Business ownership and participation in agro-processing activities

For the business ownership variable, the study locates a respondent as either an owner or an employee in the business entity/SME. The findings indicate a negative relationship between business ownership with the decision of women participation in agro-processing. This implies that women who own agribusiness enterprises are likely not willing to participate as compared to those who are employee or member of an enterprise owned by a group. Sole proprietor form of ownership has a corresponding influence on risk taking by an individual to participate in processing, which means most of individuals are risk averse.

4.4.2 Level of Education

Level of education of the owner or leader of a group of women agro-processing SME, which was measured in terms of number of years in formal education, was found to be positively influencing decision of participation in agro-processing activities by respondents. This is because the level of education creates awareness and makes it easy for one to adapt and interpret different Agro-processing processes. Sacerdote (2011) also provides evidence that education can be leveraged to enhance an individual's economic decision-making quality or economic rationality. Thus, those with higher education were likely to engage in handling different business logistics such as record keeping and basic financial literacy. Also, education can potentially provide access to expertise, technology and resources of assistance to Agro-processing activities and business management (Chiliya and Roberts-Lombard, 2012).

4.4.3 Types of market-clients and women participation in agro-processing

The study aimed to explore the influence of the type of clients/markets on women, both the decision to participate and extent of participation in agro-processing. Types of clients were grouped into formalized and non-formalized or structured and unstructured. The two categories were regarded as determinants for certainty and sustainable markets. The findings established a positive relationship between the nature of clients/markets and their decision and extent to participate in the agro-processing business. As such, women agro-processors with formalized/structured clients/markets participated or were advancing to processing activities compared to those whose market for the products were non-formalized/unstructured. The responses suggest that respondents perceive access to sustainable clients/market as a condition to guarantee profitability of business. In line with the findings in this study, Adenugba & Raji-Mustapha's (2013) study (in rural Nigeria) established that linkages within women agro-processors and the more organized market/clients' networks fast-track decisions and further advancements of processing activities.

4.4.4 Contract

The study found also that respondents with contract customers were highly motivated in the decision to participate in agro-processing activities. This implies that respondents with contract buyers are assured of the market and price hence the motivation to produce more is high. Unfortunately, most of the respondents base their operations on informal contracts, built on informal handshake agreements.

4.4.5 Access to Loan

Access to loan was found to be among the important factors that positively influence respondents' decision to participate in agro-processing activities. Access to finance is crucial for small and medium-sized enterprises (SMEs) for their growth and innovation (Lee et al., 2015). Cross-country studies show that the probability of being credit constrained decreases as firm size increases and that, SMEs in the least-developed regions like Sub-Saharan Africa, East Asia and the Pacific and South Asia are more likely to encounter significant financing obstacles. Also, access to finance has been identified as one of the most critical constraints to firm growth. On the other hand, availability of external finance is positively associated with indicators of entrepreneurship such as the number of startups and firm dynamism and innovation (World Bank, 2018).

4.4.6 Price of processed commodity

The study sought to determine the role of agro-processed commodities' price on both decision and extent of participation in the agro-processing activities among women. The findings in this study indicate existence of a positive relationship between the said variables, which suggests that women agro-processors opted to engage with processing activities that are in the value chain because they were certain of fetching higher selling prices of their commodities. Some determinants of the marketing margins include production and transport cost and efficient and competitive market (International Growth Centre-IGC, 2011). This shows that, more initiatives, including market orientation, by the government and other support stakeholders may need to focus on addressing those determinants so that women who take courage to participate in the agro-processing sectors should be able to realize the expected advantages.

4.5 Determinants of extent of women participation in Agro-processing

The factors influencing respondents' extent of participation in agro-processing enterprises are presented in table 5.

Table 5: Truncated regression model (Second hurdle) results for the factors influencing extent of women participation in Agro-processing

Variables	Description	Coefficient	Robust Standard Error	z-Statistics	P> z
POP	Position in the Business	-0.050	0.064	-0.77	0.439
BOP	Business Ownership	0.045	0.016	2.76	0.006***
MRT	Marital Status	0.038	0.012	3.15	0.002***
EDU	Education level	0.015	0.013	1.15	0.252
IVS	Institutional Visit/Support	0.071	0.019	3.71	0.000***
TOC	Type of the client/customer	-0.017	0.006	-2.98	0.003***
ECB	Engaged in Contract Business	0.056	0.038	1.48	0.138
APA	Access professional advice (Agro-processing advices etc)	-0.026	0.029	-0.92	0.359
ATL	Access to Loan	-0.019	0.026	-0.76	0.447
RPT	Registered Product	0.060	0.055	1.1	0.273
PCT	Processing costs	-0.037	0.016	-2.31	0.021**
POC	Price of Commodity processed	0.036	0.008	4.6	0.000***
EXP	Experience in Agro-processing (years)	0.005	0.002	3.33	0.001***
AGE	Age of the respondent (Woman owns Agro-processing SME)	0.000	0.001	-0.25	0.802
Constant		1.005	0.212	4.73	0.000

Notes: *, ** and *** indicate the variable is significant at 10%, 5% and 1%

Source: Field Survey (2020)

4.5.1 Business ownership and participation in agro-processing activities

For the business ownership variable, the study locates a respondent as either an owner or an employee in the business entity/SME. The aim was to establish the link between business ownership in this sense and decision for a woman to participate in agro-processing activities. The findings indicate a positive relationship between business ownership with extent of participation in agro-processing activities of respondents. The responses show that, majority of women who are engaged in the processing of agro-products represent owners of the particular businesses. This indicates that women who own a business have awareness about the value added through processing and as such can take risks to attain the highest possible return from the business. With sufficient support and resources, agro-processing can thus extend efforts to empower other women in the lower level of agricultural value chain. The view connects with ILO's report (2018) which recommends that mentoring, coaching and peer-to-peer support are approaches to enhance chances of business among women. The approaches can be adopted to help women at any node in the value chain to realize economies of scale, invest in technology and penetrate new markets.

4.5.2 Marital status and women participation in agro-processing

The role of women has continued to weigh so much regardless of their marital status. This does not preclude the fact that marital associated roles have significant impact on how women attend their economic interests. The aim of this study was to describe women agro-processors' participation experience as a result of their marital status. The findings in this study indicate a positive connection between marital status and the extent of participation in agro-processing. Married women or rather those women with assured support from men are likely to participate in agro-processing activities than unmarried women or those without significant support from men. Although the findings are surprisingly contradicting the cultural practices where women participation is constrained by domestic chores, they relate to WFP (2017) report in Ghana, where agricultural commodities are traditionally produced and traded by women. Men tend to dominate in the value chains nodes where more capital and resources are required, and profit margins are higher. In this study, however, the practices indicate a growing gender equality and confidence of women participation in commercial agriculture.

4.5.3 Visit and expert consultation and participation in agro-processing

The study sought to establish the influence of expert consultations on women decision to participate in agro-processing activities. In this study, expert consultation is regarded as platforms for information sharing and may also operate through training. The findings of this study present a positive relationship between expert consultation and extent of women participation in agro-processing. Women with access to entrepreneur-expert information sharing are likely to develop confidence to advance into processing. The findings in this study resemble those by Khatun and Roy (2012) in a study for the state of West Bengal where a positive effect of training by extension agents on women participation in agro-processing activities is evidenced. This suggests the necessity for the government to locate extension officers to as many urban and rural places as possible where potential for various value adding activities exist.

4.5.4 Agro-Processing costs and women participation

The findings of this study present the costs associated with agro-processing as an inhibitor for women participation in agro-processing, which implies a negative relationship between the costs of processing and extent of women participation in the processing of agro-products. The study observed that majority of those who have and those who have not advanced to processing stage to be struggling with investment costs related to processing and packaging technologies, energy and registration. The findings under this section are not unique to Tanzanian. Similar findings are reported by Okpara & Wynn (2007) in a study for Nigeria and for SMEs in Rwanda, Ghana and Kenya (Mukantwali et al., 2012; Chu et al., 2007). This suggests that unless concerted efforts are taken Tanzania may continue to struggle to formalize the potentials of women contribution to economic development.

4.5.5 Experience in similar business

The study aimed to explore the relationship between an experience in business activities and the extent of women participation in the processing activities. The findings established a positive relationship between the variables. In this regard, women agro-processors with processing experience can better do the processing in a similar or closely similar business for a particular product. The observation supports that by Politis and Gabrielsson (2005) who noted that career experience for the development of entrepreneurial knowledge, i.e., knowledge, will enable an entrepreneur to recognize and act on opportunities as well as to organize and manage new ventures. Similarly, Jeckoniah, Nombo, & Mdoe (2012) established that, women participating in the value chain development programme are more likely to be empowered than their counterparts. Therefore, career related capacity development approaches among women agro-processors need to be acknowledged and women should be trained along the lines of experience and interests.

4.6 Institutional Support for Women Agro-Processing

Different efforts by government and its agencies, together with private sector, were observed to play some roles in coordinating and supporting women who are engaged in the agro-processing sector. The results of different roles of these institutions are provided in table 6.

Table 6: Institutional support for women in Agro-processing activities

Variable	Description and measures	Frequency	Percentage
Government/NGOs are supporting us sufficiently	Yes	119	64.6
	No	65	35.3
Types of Institutional Support	Loans	51	85.0
	Capital	1	1.7
	Loan Guarantee	-	-
	Other	8	13.3
If receiving technical advice during production	Yes	71	38.6
	No	113	61.4
Source of technical advice	Government	69	60.0
	NGOs/Training institutions	46	40.6
If received loans from Government/Private institutions	Yes	129	72.5
	No	49	27.5

Source: Field Survey (2020)

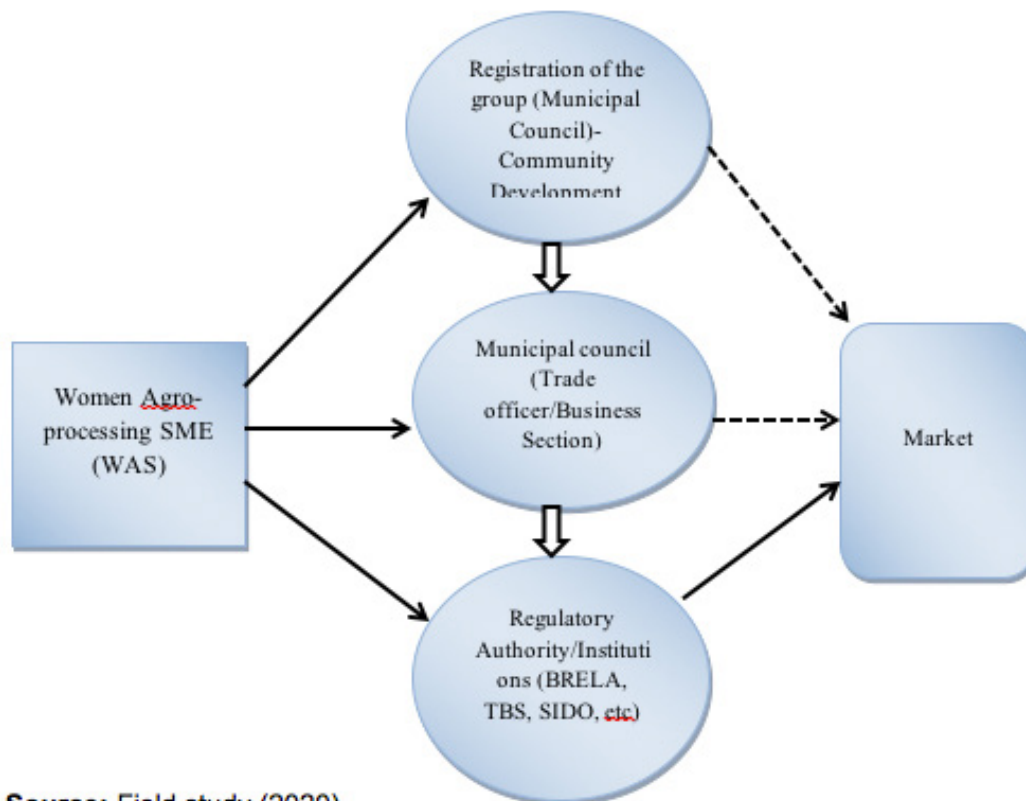
The results in table 6 show that, 64.6 percent of the respondents agree that the government/NGOs provide sufficient support to them. This may be through their access to both short-term and long-term loans and technical advice provided by different NGOs/government to the women which in turn influences women engagement in Agro-processing business. However, about 35.3 percent disagree saying government/NGOs are not supporting them enough. Women in this group may have insufficient or no access to the loans, capital and other technical advices offered by government/NGOs. The 85 percent of the respondents explained that loans influence women to engage in Agro-processing business and only 1.7 percent of the respondents say that they are influenced to engage in Agro-processing business through access to capital. None of the women seem to engage themselves in Agro-processing business through loan Guarantees, while 13.3 percent of the respondents view that they depend on other types of institutional support to engage in Agro-processing business.

Only 36.6 percent of the respondents agreed that receiving technical advice during production has influence on their engagement in Agro-processing business. Otherwise, 61.4 percent disagree that receiving technical advice during production influenced them to engage in Agro-processing business. Besides, they explained that the government, which is a source of technical advice, has some influence on their engagement in Agro-processing business. Similarly, 40 percent of the respondents explained that, the NGOs or other training institutions as sources of technical advice have influence on women engagement in Agro-processing business. 72.5 percent of the respondents explained that loans offered by the government and other private institutions influence women to engage in Agro-processing business. While 27.5 percent of the respondents disagree.

4.7 Observed institutional arrangement for WAS

Figure 2 summarizes the coordination and roles played by institutions in supporting women engagement in agro-processing sector at the Districts level.

Figure 2: Institutional arrangement of Women Agro-processing SMEs in visited study areas



Source: Field study (2020)

The results show that, institutional arrangements for formalizing the Agro-processing SMEs are still facing some challenges related with inconsistency with no proper channels for women to participate in the Agro-processing activities. The earlier findings indicated that, majority of SMEs are not owned by individuals rather by a group. The group has at first to be registered at the Municipal office (Community development desk) and are required to produce their constitution and provide other details. Once the group is registered, it is linked to the trade officer of the Municipal to obtain necessary permits, including business license and follow other regulatory procedures administered by bodies such as BRELA, TBS or TFDA. Following these procedures, the SME can be allowed to sell its products to the market and are subjected to close follow-up and monitoring during the production process. However, individuals interested in engaging in Agro-processing must go straight to the Municipal trade officer for registration of the business and other operation procedures.

The study noted that, majority of WAS are not following these channels. Once the groups are registered at the community development desk, they tend to engage in production process directly and sell to the available market. They do so due to having insufficient information, but also in trying to avoid payment of any costs associated with these channels. Those who already have customers normally skip the registrations process and sell directly to their customers. According to regulatory authorities, general procedures for running Agro-processing enterprises require a specific location for the business, assurance of food safety, packaging and labeling, storage facilities and other specific requirements based on the products. Since most of the WAS have small capital, they tend to avoid all these procedures. Other WAS go straight to the regulatory institutions and register their products and sell them straight to the market.

Different roles are played by institutions in supporting Agro-processing businesses in Tanzania. For instance, the experience in Kigamboni District and Ilala provide evidence that both private and government institutions playing key roles in supporting women participation in Agro-processing business. The observed institutions are discussed briefly hereunder.

4.7.1 Business Registrations and Licensing Agency (BRELA)

The Business Registrations and Licensing Agency (BRELA) is an Executive Agency under the Ministry of Industry and Trade responsible for business administration and regulation of the laws; namely Companies Registration, Business Names Registration, Trade and Service Marks Registration, and granting of Patents and issuing of Industrial License. It was established under the Government Executive Agencies Act No. 30 of 1997 and formally launched on 3rd December 1999 (BRELA, 2019). Diao et al. (2018) also noted that, only 3 percent of these firms are registered with BRELA and that only 5.3 percent of these firms have a tax identification number. Officially, firms in Tanzania are classified as formal when they are either registered with BRELA or when they have a tax ID number. Thus, the MSME sample consists primarily of small informal firms.

4.7.2 Small Industries Development Organization (SIDO)

SIDO was established in October 1973 as a parastatal organization under the then Ministry of Trade, Industry and Marketing (now Ministry of Trade, Industry and Investment). Its objective was to develop the small industry sector in Tanzania. It was expected to fulfill a very wide range of functions, from policy formulation to providing direct support to industries and hands-on involvement in the establishment of SMEs, in both rural and urban areas. Some of the best-known activities include Industrial Estates, Technology Development Centres, Training cum Production Centres, hire purchase schemes for equipment, technology development, technology transfer through twinning arrangements and exchanges with industries in Europe and Asia, and direct marketing (SIDO, 2019). Other key mission of SIDO is to provide skills-based training and loans to the small and medium entrepreneurs (Kinissa and Mokaya, 2018). In this study, it was observed that SIDO is the only institution involved in training and capacity building of women who are interested to learn more in Agro-processing activities.

4.7.3 Private sector

The study found that, private sector institutions are involved mostly in capacity building in of the areas of entrepreneurship skills. Microfinance institutions offer small and soft loans to women and coordinating with the local government in implementing different roles in supporting women in agro-processing activities.

Conclusion and Recommendation

This section presents the summary of the study. It highlights the results and links the results with policy implications and associated recommendations.

5.1 Summary and Conclusion

The empirical evidence from this study has indicated that 42.9% (majority in this case) of the respondents had primary and, therefore, low level of education, which mean they can at least read and write. More than 67% of married women engage more in agro-process activities, which justify the roles of women in supporting household livelihood, which are very crucial roles that should not be under estimated. Up to 60.3% of respondents belong to the Women economic groups as opposed to sole proprietorship form of business ownership. This suggests that, capital accumulation and knowledge sharing for the growth of agro-processing are influenced by collective action. Moreover, 67.9% of the respondents sold their product in un-structured market; while 33.8% of the respondents sold their products to customers who were available directly at the market. This suggests that direct markets (available local un-structured markets) receive more than 65% of the products produced by women in agro-processing.

In addition, more than 52% of respondents received market information directly from the market. This indicates that, market information obtained by directly visiting the market is important and reliable in making decision to engage in Agro-processing activities. Only 9.6% of the respondents were found to have formal and informal contracts with the customers who provided some assurance of purchasing the products. This implies that contracts are not given more attention by the women agro-enterprises. At least 11.6% of the respondent registered their product with regulatory authority, which suggests that most of processed products are not tested to determine if they met the required of quality. Furthermore, the results show that transport is not a constraint as most of the respondents (women producers) are close to the processing and market areas. As such, there is low level of loss on transit.

In assessing factors influencing probability of women participation in Agro-processing activities, education level, type of the client/customer, engagement in contract business, access to loan and price of commodity processed have significant and positive influence, i.e., they increase the chances of one making a decision to participate or not in agro-processing activities. However, business ownership has significant and negative influence, which implies that, if the enterprise is owned by a respondent, the chances of participation in agro-processing decreased. The study observed factors like business ownership, marital status, institutional visit/support, type of the client/customer, processing costs, price of commodity processed and price of commodity processed to have significant and positive influence, i.e., increases the extent of participation in agro-processing activities.

On the other hand, the study revealed that majority of the women respondents benefited from the government/NGOs support in different ways. For instance, up to 85% of the respondents acknowledged loans' influence engagement in Agro-processing business. However, a minority, i.e., 36.6 percent of the respondents acknowledged that the technical advice received during production influenced their decision to participate in Agro-processing business. This indicates that expert visits and consultations played a vital role in advancing the agro-processing activities of women SMEs. The study found also that government as a source of technical advice influenced women decisions to participate in Agro-processing business. Furthermore, loans offered by the government and other private institutions have had significant influence on women engagement in agro-processing activities.

5.2 Policy implications and recommendations

Policy on inclusion of women in Agro-processing sector

The level of participation of women in economic activities of any country is an important indicator of economic growth performance. Due to the ambition of Tanzania to become a semi-industrialized country by 2025, there is a need to ensure that the country's SME policy facilitate fast-tracking inclusion and participation of women in Agro-processing activities. There is a high need to mainstream the needs of women entrepreneurs across all sectors of industrialization. The results of this study suggest that other challenges that affect women engagement in agro-processing activities, such as lack of product formalization, access to loans/finance, contract business arrangement, may be addressed through the SME policy as special cases. Otherwise, different strategic development actions of various economic sectors of the country should encourage women participation and contribution to the economy through the agro-processing sector.

Strengthening Women's groups and cooperatives at the processing level to enable a significant improvement in the agro-processing sector

The findings indicated that majority of respondents belong to women groups dealing with agro-processing activities. However, rather than supporting individual women, support to structures such as women's business associations will allow women in agro-processing sector to express their voices loudly and with greater impact on change. Moreover, strengthening women associations and its members' capacity in business management are likely to spark more impact than reaching out to individual beneficiaries who are not members of associations. Several studies such as (Allen and Truman, 2016; Ismail and Ahmed, 2016) have proved that when women come together, they have stronger bargaining power and ability to influence policymakers and private sector development initiatives.

Strengthening expert visit and consultation

It emerged from this study that experts' visit and consultations to agro-processing entrepreneurs play a key role in influencing women engagement in agro-processing activities. These are likely to inform and support best practices in agro-processing. Based on this perspective, women agro-processing enterprises require more specific advice on the key problems affecting their enterprises. Certainly, improving the management of these enterprises through technical assistance, that is, through a detailed diagnosis of the strengths and weaknesses of the enterprises, identification of required changes or improvements, and the support in the implementation of such changes/improvements may be achieved.

Entrepreneurship and Agro-processing capacity building

Continuous training is one of the primary methods of building the capacity of women groups. Trainings could vary from one group to another depending on the groups' preference and what the government or NGOs find to be of great interest to the group. They could include, among others, issues such as saving management skills, group dynamics, leadership skills, human rights, resource mobilization, income generation, and modern ways of agro-processing. In addition, specific training about entrepreneurship are likely to motivate women participation in agro-processing activities by equipping them with general skills relevant for management of the enterprises.

Co-ordinated institutions and policies to support women engagement in agro-processing activities

The results of this study indicated that different institutions and policies are involved in supporting women engagement in agro-processing sector. However, various roles played by each institution have to be well coordinated and monitored closely to ensure they deliver appropriate results. There should be institutional clarity of roles and responsibilities played by each government agencies engaged in the agro-processing sector in the implementation policies and strategies.

5.3 Study Limitations

The sample selected for this study was specifically on Women who own Agro-processing enterprises, either as individuals or as a group. As a result, such cases were treated as Agro-processing SMEs. The results in this study may not all be applicable to other population groups, such as youths.

5.4 Areas for further research

As a result of the limitations of this study, suggestions for further research include the following areas:

- i. As the sample size was limited to women category, future studies may focus on other groups of the population.
- ii. Other studies may also use qualitative research approaches to allow more discussion and opinions to complement the findings of this study.
- iii. Further research should also analyze other factors apart from socio-economic and institutional factors such as the level of skills, willingness, economic and financial incentives from participation in Agro-processing.

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Footnotes

1. According to the Tanzania's SMEs Policy of 2003, Micro-Enterprises are those engaging up to 4 people, in most cases family members or employing capital amounting up to Tshs.5.0 million. The majority of micro enterprises fall under the informal sector.
2. Small enterprises are mostly formalised undertakings engaging between 5 and 49 employees or with capital investment from Tshs.5 million to Tshs.200 million.
3. Medium enterprises employ between 50 and 99 people or use capital investment from Tshs.200 million to Tshs.800 million.



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