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The Influence of Capacity Building on Small-Scale Agro-Processors in South Africa: Lessons for Agricultural Extension Advisory Services

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ABSTRACT

This paper examines capacity building from the perspective of business growth and success in small-scale agro-processing enterprises. Our analytical approach was underpinned by the inability of small-scale agri-enterprises to grow and succeed despite the South African government's support for capacity building through the economic empowerment programme initiative in the past three decades. The study was conducted in five of nine selected South African provinces (Gauteng, Limpopo, North-West, Free State, and Mpumalanga). This study was essential for developing an effective strategy for enhancing agri-business growth and success in South Africa. A concurrent mixed-methods research design was used, and data from 503 small-scale agro-processors was analysed using descriptive and multiple regression analysis techniques. The results revealed that capacity building ($\beta = 0.274$, $p = 0.000$) significantly influences the economic empowerment of small-scale agro-processors. Furthermore, the study showed that mentorship and technical and financial skills are critical types of capacity building that influence the economic empowerment of small-scale agro-processors in South Africa. It is recommended that all government or private stakeholders, including agricultural extension advisory services, invest in capacity-building programmes for

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small-scale agro-processors to achieve economic empowerment. Economically empowered small-scale agro-processors will significantly contribute to employment creation and better income distribution.

Keywords: Capacity Building, Human Capital Theory, Small-Scale Agro-Processors, Agricultural Extension Advisory Services

1. INTRODUCTION

Numerous studies have shown that capacity building plays a vital role in the growth and development of small-scale agro-processors (Owoo & Lambon-Quayeflo, 2018; Mkuna, Walaila & Isaga, 2021; Bittar, Raphel & Rawago-Odoyo, 2022; Mthombeni, Antwi & Oduniti, 2022). Human capital theory insinuates that an educated population is productive (Olaniyan & Okemakinde, 2008; Aladejebi, 2018). Furthermore, Schultz (1971), Sakamota and Powers (1995), Psacharopolous and Woodhall (1997), and Aladejebi (2018) argued that the human capital theory is centred on the assumption that formal education can lead to and is vital to improving the production capacity of a population. Human capital theorists' postulate that there is a direct positive relationship between formal education and the productive capacity of a population (Aladejebi, 2018).

The agro-processing sector plays a considerable role in South African society's socioeconomic development (Manasoe, Mmbengwa & Lekunze, 2021a). For example, the South African food industry employs 46 percent semi- and unskilled labour, 40.3 percent mid-level skills and only 7.1 percent high-level skills (Gebrehiwet, 2012). Hence, due to the forward and backward linkages, it is identified and prioritised in various development policies such as the National Development Plan, Industrial Policy Action Plan, and New Growth Plan. Multiple studies demonstrate the significance of small-scale agro-processing enterprises (Sinek, 1995; Mohamed & Mnguu, 2014; Daninga, 2020; Manasoe *et al.*, 2021a). Agro-processing comprises manufacturing activities that transform raw materials and intermediate products from agriculture, forestry, and fisheries (FAO, 1997; Mazungunye, 2020). In developing and transitioning countries, agro-processing activities dominate the manufacturing sector. These activities contribute 52 percent, 36 percent and 32 percent of the total value-added of manufacturing in low-, middle-, and upper-middle-income countries, respectively. Their contribution can be even higher in agro-based countries. In addition, about 4-5 percent of the

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total value-added in the low and middle-income countries is from agro-processing. Thus, agro-processing is vital in contributing to the economy's output. Agro-processed products comprise a significant part of these countries' exports (Mazungunye, 2020).

Small-scale food enterprises have played a vital economic role in employment creation and better income distribution. According to Hlatshwayo et al. (2021), small-scale agro-processors provide about 70% of employment in rural households. Furthermore, the small-scale agro-processors serve as a training ground for entrepreneurs before they invest in larger enterprises. Small-scale food enterprises also have essential linkages to related industries, such as manufacturing machinery, food packaging materials, and suppliers of food ingredients (Sinek, 1995). Furthermore, Daninga (2020) and Manasoe *et al*. (2021a) assert that small-scale agro-processing industries in sub-Saharan Africa are potential sources of livelihood for most disadvantaged people. The small-scale agro-processors have a functional role in employing workers at low capital cost, generating higher production volumes, introducing innovation and entrepreneurship skills, increasing exports, and distributing income across the country due to increased profit accrued from increased investment (Mohamed *et al*., 2014; Chichaybelu *et al*., 2021). However, the contrary can be assumed in South Africa, where agro-processing and agriculture are premised on a dualistic system.

In South Africa, commercial agriculture is the leading player in the agro-processing industry, supplying major retailers and export agencies. Large-scale commercial farmers are typically considered the main drivers of national food security, producing about 80% of the country's food (Giller, 2020). In contrast, small-scale agro-processing plays a limited role in supplying agro-processed products commercially despite receiving the government's perpetual financial and non-financial support (Mmbengwa, Rambau & Qin, 2020), which includes, amongst others, entrepreneurial assistance, access to capital, business and incubation, industry research and technology transfer, and infrastructure investment (Department of Agriculture, Forestry and Fisheries, 2016). Although small-scale agro-processors receive the government's support, their growth and expansion do not resonate with the corresponding support, leading to policymakers questioning the rationale for supporting these entrepreneurs. A systematic under-investment characterises South Africa's human capital (Thwala& Phaladi, 2009). Studies show that most small-scale agro-processing enterprises in most African countries are operating below capacity (inefficiently) due to the absence of capacity building (Shitu, Sakia, Meti, & Maraddi,

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2013; Rambe & Agbotame, 2018). In addition, they lack sustainability due to a lack of technical and managerial skills (Shitu *et al*., 2013; Rambe *et al*., 2018).

Various studies have shown that capacity building contributes to economic growth but also the social development of local people (Cheers, Cock, Kruges & Trigg, 2005; Madu, 2019). Furthermore, capacity building can be considered essential and related to rural development and, simultaneously, the sustainability of rural development projects (Flora et al., 1999; Madu, 2019). Capacity building of farmers towards equipping them with crucial information about markets is of paramount necessity (Shitu *et al*., 2013). Furthermore, capacity building is defined as the development of skills and capacities, enhanced knowledge, and information exchange between the actors involved in innovation, including farmers and their organisations, agricultural research, education and training institutions, extension and advisory services institutions, and the researchers and professionals working in the agricultural sector. Proper training, capacity building and investment in relevant physical and scientific infrastructure are necessary to ensure that the country has the requisite absorptive capacity to benefit from the numerous technology initiatives and efforts going on within and outside its frontiers (Banji & Sampath, 2007; Kinyanjui, Kabare & Waititu, 2018). Capacity building for agro-processing firms is critical to their growth and success. Government interventions must be refocused to provide training incentives for firms willing to relocate. It concluded that capacity building based on technical skills might be required to ensure that these entrepreneurs effectively carry out their entrepreneurial duties (Nyame & Caesar, 2022). According to Aladejebi (2018), some researchers consider capacity building an antidote to hunger, poverty, diseases, crises, and the stimulation of economic activity. Furthermore, capacity building involves equipping people with the knowledge, skills, information, and training to carry out their functions effectively in a nation.

However, the lack of capacity building in South Africa's small-scale agro-processing enterprise sector is dire. The study's objectives were to outline the socioeconomic characteristics of South Africa's small-scale agro-processing enterprises regarding gender, age, and educational background and to analyse the influence of capacity building on the economic empowerment of small-scale agro-processors in South Africa. The capacity of small-scale agro-processors is extremely weak. Henceforth, the study aims to analyse the influence of capacity building on the economic empowerment of small-scale agro-processors in South Africa.

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2. PROBLEM STATEMENT

Since the dawn of democracy in 1994, the South African government adopted a transformation policy that included the economic empowerment of small businesses. In addition, the agricultural and agro-processing sector was prioritised for support due to its backward and forward linkages in the economy. Various initiatives were developed to support small-scale agro-processors, including capacity-building programmes. Despite the commitment from the government and the huge investments made to assist small-scale agro-processors in being integrated into commercial agrifood chains, actual success stories of emerging farmers successfully operating in commercial agrifood chains are scarce. A study by Mthombeni et al. (2022) shows that despite the government's investment capacity-building programmes, most small-scale agro-processors have no formal training on good processing practices.

The study's main objective was to examine the impact of capacity building on the economic empowerment of small-scale agro-processors in South Africa. This study is significant to SME owners and managers in capacity building and benefits. Also, this study is vital to policymakers, academics, potential investors, and government agencies. Concerning the roles they can play in improving the human capacity building of small-scale agro-processors.

3. THEORETICAL FRAMEWORK

This article is premised on human capital theory, which posits a reciprocal relationship between human capital, productivity, and income (Fix, 2018). According to Fix (2018), the human capital theory originated in the mid-20th century work of Mincer (1958), Schultz (1961), and Becker (1962). The human capital theory assumes that education determines labour's marginal productivity and earnings (Marginson, 2017). Furthermore, Marginson (2017) indicates that the lifetime earnings of educated labour define the value of an investment in education. Education, work, productivity, and earnings are seen in the linear continuum. Graduate earnings follow when educated students acquire the embodied productivity (the portable human capital) employers use.

According to Namasivayam and Denizci (2006), human capital refers to education, knowledge, work competence, and psychometric evaluations. In addition, Aliu and Aigbavboa (2019) define human capital as an individual's skill, knowledge, health, and creativity. According to Aliu *et al.* (2019), Adam Smith argues that education and training are the bedrock of human capital in any society. Furthermore, Aliu *et al.* (2019) indicated that centuries later, Marshall

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(1965) supported Smith's postulations, described education as a national investment, and highlighted that the most valuable capital is invested in humans. Like most theories, the human capital theory is not exempted from criticism. Over time, various researchers have criticised the theory for being too basic in its assumption. They have reasoned that education alone cannot influence organisational productivity but must complement other constructs (Aliu *et al.*, 2019).

Aliu *et al.* (2019) have identified the key features of human capital: knowledge and skill, creativity and innovation, competitive advantage, and increased customer satisfaction with the organisation. The knowledge and skills feature proposed that training is a considerable investment in workers that fosters their skills and abilities in handling workplace problems. While the competitive advantage feature alludes, organisations must seek to encourage creativity and innovations to align themselves with the present complexities and convolutions characterising the world of work (Namasivayam & Denizci, 2006). On the third feature, Namasivayam *et al.* (2006) indicate that in establishing a competitive edge, organisations must seek to create a distinction from their competitors by acquiring the services of more knowledgeable and skilled employees. Lastly, the increased customer satisfaction from the organisation opines that employees who display a high quality of service delivery tend to create a positive vibe among customers that positively influences their loyalty to the organisation, which can lead to increased financial benefit for the firm. The human capital theory affects economic growth and can help develop the economy by expanding its people's knowledge and skills, including small-scale agro-processors.

The agricultural extension and advisory services or agricultural extension officers are defined as systems that should facilitate the access of farmers, their organisations, and other market actors to knowledge, information, and technologies (Ali, Hamad, Abdallh, & Elagab, 2020). The agricultural extension officers play a critical role in the capacity building in the agricultural sector. However, various authors differ in terms of the role the agricultural extension officers have to play. According to an article by Mkuki and Msuya (2020), agricultural extension officers are grouped into two broad categories: process and technical skills (Suvedi & Kaplowitz, 2016). However, Agricultural for Impact (2015) states that AEOs' roles are categorised as technology transfer, advisory, and facilitation. Also, Moris (1987), as cited by Mattee (1994), grouped AEOs' roles into two categories: educational and advisory. Based on the literature reviewed and the author's experience in the extension field, the seven categories of roles were formulated to help understand the AEO's perception of their roles. These include

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facilitation, organisational, intermediation, educational, technical, advisory, and administrative roles. According to Takemura, Uchida, and Yoshikawa (2014), agricultural extension officers assist small-scale agro-processors with technical and social matters.

Furthermore, within the agricultural extension and advisory services, extension isn't merely occupying a bridge position. Still, it facilitates improving the efficiency and effectiveness of both the farmer and the research to facilitate the transfer of agricultural technologies among the farmers (Rivera et al., 1997). The extension starts with knowledge management and ends with human enrichment. By its nature, agricultural extension has an important role in promoting the adoption of new technologies and innovations (Jamilah et al., 2010). Through education and communication, agricultural extension changes farmers' attitudes, knowledge, and skills. The role of agricultural extension involves disseminating information, building farmers' capacity through various communication methods, and helping farmers make informed decisions (Sinkaiye, 2005). Extension services can be crucial in providing information on sustainable agricultural education. Thus, the role of extension is very important in supporting sustainable agriculture, which is moving from production to a wider set of sustainability (Salem, 1994; Rahman, Mardiningsih & Dalmiyatun, 2018).

4. METHODOLOGY

4.1. Study Area and Research Design

The study was conducted in five provinces of the Republic of South Africa: Gauteng, Limpopo, North West, Free State, and Mpumalanga (see Figure 1). The focus of the study was on the small-scale agro-processors located in these provinces. These provinces combined account for 55% of South Africa's population and 64% of its agri-business economy (StatsSA, 2018; Mthombeni *et al*., 2021). Lastly, the study area accounts for 60.5% of South Africa's economy. The World Bank (2020) data shows that South Africa had an 87% adult literacy rate in 2020, ranking below countries such as Mexico (95%), Brazil (93%), and Azerbaijan (99.8%). At the same time, South Africa's Human Development Index value for 2019 is 0.709, which places the country in the low human development category, positioning it at 114 out of 189 countries.

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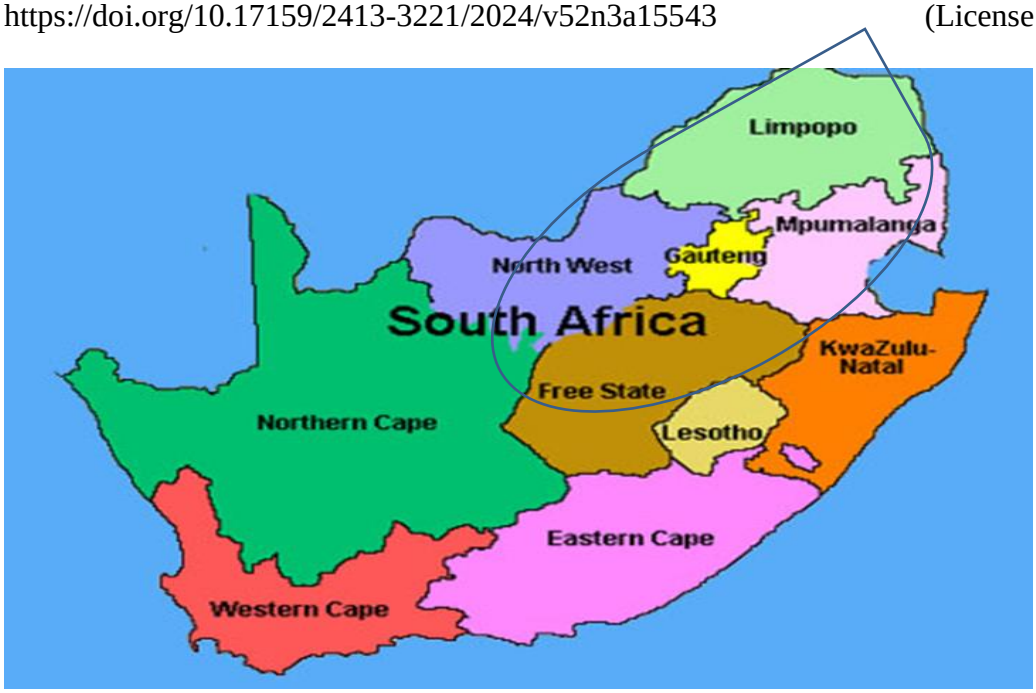

FIGURE 1: Map of South Africa showing Provinces (Source: Google Maps, 2019).

The study employed a concurrent mixed methods design to collect qualitative and quantitative primary data.

4.2. Sampling Procedure and Sample Size

The population in this study comprised small-scale agro-processors chosen from the study area. Due to the informal nature of the enterprises and their traditional background and meagre economic contributions, South Africa's government institutions do not have a formal database to derive their accurate population. The study population was estimated to be 1150 small-scale agro-processors, based on their concentration in various centres of the study areas. The target population was owners and managers of small-scale agro-processing enterprises located within the study area. According to the province, a stratified random sampling technique was used to select 503 respondents. When randomly selecting people from a population, these characteristics may or may not be present in the sample in the same proportions; stratification ensures their representation (Creswell *et al*., 2017). Identifying whether the sample contains individuals in the same proportion as the character appears in the entire population within each stratum is appropriate. Stratified sampling was appropriate for this study since the number of agro-processing firms differed from province to province. The provinces were selected due to the value of the agricultural activities in each province. A sample calculator was used to calculate the sample size per province. Table 1 depicts that Limpopo and North West Province

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received a higher response rate than anticipated, while Mpumalanga and Free State's response rate was below expectation.

TABLE 1: Estimated Population, Sample, and Response Rate Per Province

Province	Population (N)	Sample Size (n)	Percentage of sample size per province	Number of questionnaires completed	Response rate %
Gauteng	300	100	33.3%	100	100%
Limpopo	200	100	50%	103	102%
North West	150	100	66.7%	143	143%
Mpumalanga	300	100	33.3%	98	98%
Free State	200	100	50%	60	60%
Total	1,150	500	43.5%	503	100.6%

4.3. Data Collection

The study used primary data, which was collected through a survey. The data was collected over two months (July – August) in 2019 via face-to-face interviews using semi-structured questionnaires. The questionnaire was designed and divided into two sections (descriptive and inferential) informed by the study's objectives. The questionnaire was pre-tested to check whether it was suitable for the study and to check for some errors. It is also assisted by training the data collectors to familiarise them with the questionnaire. The people's interviews were conducted in local languages (Setswana, Sesotho, Siswati, Sepedi, Isizulu, and Isixhosa) to reduce misinterpretations and gain the interviewees' confidence. In business management research, an acceptable range for response rates could be 50%–80% (Ali, Ciftci, Nanu, Cobanoglu & Ryu, 2021). Through the assistance of two data collectors, the researcher distributed 503 questionnaires to owners and managers of small-scale agro-processing enterprises in North West (143), Limpopo (102), Free State (60), Mpumalanga (98), and Gauteng (100) Provinces, all of which were completed. Therefore, this study's response rate was 100%, well beyond the acceptable range of 50% and 80% in business management research.

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4.4. Data Analysis

The study adopted descriptive and empirical analytical techniques to analyse the influence of capacity building on the economic empowerment of small-scale agro-processors in South Africa. Mondal, Swain, and Mondal (2022) assert that descriptive statistics is the first step to gaining insight into the research data. They further indicate that when researchers know the central tendency and distribution of the data, they decide on the inferential statistical plan. The analyses were obtained using descriptive analytics and multiple regression analysis. The descriptive statistics include percentages and mean scores. Standard deviation analyses the socio-demographic characteristics of small-scale agro-processors, such as age, gender, educational status, employment status, marital status, agro-processing speciality, and years of experience in the agro-processing industry (Chikaire, Ajaero & Atoma, 2022; Mahasha, Hlongwa & Gidi, 2022; Manasoe, Mmbengwa & Lekunze, 2022).

According to More *et al*. (2006), multiple regression analysis is a statistical technique that can be used to analyse the relationship between a single dependent and several independent variables. Regression analysis aims to project the character of interconnection among the various input and output variables (Bharati, Ray, Khandelwala, Rai & Jaiswal, 2021). The multiple regression analysis applies to more than one input variable. It provides the most appropriate equation showing the relationship between independent and criterion variables (Teymen & Mengin, 2020). Multiple regression analysis aims to use the independent variable whose values are known to predict a single dependent value. The multiple regression analysis was used to identify the influence of capacity building on the economic empowerment of small-scale agro-processors in South Africa. The aim is to estimate and model the relationship between the set of hypothesised causal variables to understand their influence on the economic empowerment of small-scale agro-processors.

4.4.1. Hypothesis Testing

The multiple regression analysis may be used when you want to determine the following:

- **Null hypothesis:** There are no determinants that influence the economic empowerment of the small-scale agro-processors and
- **Alternative hypothesis:** At least one determinant influences the economic empowerment of the small-scale agro-processors.

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4.4.2. Model Specification

The analysis of this study was conducted through multiple linear regression modelling. The assumption was that X_1, X_2 and X_3 are the predictors of economic empowerment variables as informed by the human capacity-building theory (Munyigi et al., 2024). Table 2 provides the measurement. Gujarati (1992) suggested that the multiple linear regression model should be specified as depicted by the following:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + E_{ij}$$

Where:

Y = economic empowerment (continuous),

β_0 = constants,

β_i = coefficients of variation,

X_1 = infrastructural resources,

X_2 = transformation,

X_3 = capacity-building of small-scale agro-processors, and

E_{ij} = error term.

TABLE 2: Description and the Measurements of the Dependent and Independent Variables.

Variables	Description	Measurements	Expected sign
Dependent			
Y	Economic empowerment	5-point Likert scale	±
Independent			
X_1	Infrastructural resources	5-point Likert scale	+
X_2	Transformation,	5-point Likert scale	+
X_3	capacity-building	5-point Likert scale	+

5. RESULTS AND DISCUSSIONS

This section discusses study results from the two analytical frameworks used to examine the socioeconomic factors of the small-scale agro-processors in South Africa. The socioeconomic characteristics of the small-scale agro-processors were analysed using descriptive statistics. In

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contrast, the influence of capacity building on the small-scale agro-processors was analysed using multiple regression analysis. The descriptive and inferential results are presented as tables in section 5 below.

5.1. The Socioeconomic Characteristics of the Participants in the Small-Scale Agro-Processing Activities

The participants' descriptive analysis was presented to provide a picture of the representativeness of the study sample (Khoza *et al.,* 2019). The descriptive results analyse the characteristic demographic profile in an empirical study and establish the biographical parameters of the sampled participant group (Mazibuko, Smith & Tshuma, 2018). Table 3 exhibits the socioeconomic characteristics of small-scale agro-processors in South Africa. Researchers have shown that the respondents' demographic profiles are central to determining their capacity.

The results revealed that most of the respondents were females [365 (72.6%)] as compared to males [138 (27.4%)]. This corroborates the findings of various studies (Ampadu-Ameyaw & Omari, 2015; Quartey & Darkwah, 2015; Williams, Akuffobea, Onumah & Essegbey, 2016; Owoo & Lambon-Quayefio, 2017; Mangubhai & Lawless, 2021; Mthombeni *et al*., 2021; Manasoe, Mmbengwa & Lekunze, 2021b) which indicate that; 95% of actors involved in agro-processing are women as compared with the male counterparts. The dominance of females might result from the unique situation of South Africa, where black women were not allowed to participate in the formal economy during the apartheid period. This was also ventilated during the focus group discussion sessions. In these sessions, some participants strongly felt that government interventions have been very biased toward male-owned enterprises. Furthermore, these results contrast the findings presented by Akpan, Offor, and Archibong (2020); Adduali, Bahadur, and Fraser (2022); Kena, Golicha, Jemal, and Gayo (2022), who found fewer female participants in their survey. On the other hand, Olive *et al*. (2020) reported a slightly similar gender representation in their sample, where females were 61% compared to 39% of males. The current study results contradict three other South African studies, which found that males play a dominant role in the agro-processing sector compared to women (Khoza *et al.,* 2019; Mazibuko *et al*., 2018; Mmbengwa *et al.,* 2019). The findings by Khoza *et al.* (2019), Mazibuko *et al.* (2018), Mmbengwa *et al*. (2019) and Thindisa and Urban (2022) corroborate the findings by Kuwornu and Dunayiri (2014) and Gumbochuma (2017). They

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found that male farmers constitute a majority in the agro-processing industry compared to female farmers. The main finding of the descriptive analysis is that the current study disagrees with most of the studies on the composition of small-scale agro-processors in South Africa. The current study found that most small-scale agro-processors are women, while most studies found that males were the majority. These findings show that South Africa's transformation and women's economic empowerment efforts yield positive results. This might further mean that most males are often more prone to primarily farming crops or livestock, while women take the processing duties.

In the same results, the marital status analysis showed varying proportions. It showed that the number of small-scale agro-processors who were never married was the highest [214 (42.5%)]. It has also shown that married small-scale agro-processors formed the second highest [181 (36.0%)] participants in the sample. These findings contrast the findings of Ampadu-Ameyaw *et al*. (2015) and Mazibuko *et al*. (2018), who found that the majority (65% and 61%, respectively) of women small-scale agro-processors were married. Findings by Ampadu-Ameyaw *et al.* (2015) and Mazibuko *et al*. (2018) corroborate findings by Mkuna, Nalaila, and Isagama (2021). This implies that married women are more active in agro-processing business than other non-agro-processing businesses. Household responsibility may allow married women to dive more into agro-processing. These observations show that married women and those who never married comprise the small-scale agro-processors. The higher participation by unmarried males might imply that more young males are participating in the sector owing to the successful implementation of the country's youth development programs. Akpan *et al.* (2020) confirm that most of the participants in the sector are married entrepreneurs. However, this study seems to have some differences when it comes to those who are unmarried. Overall, it may be reasonable to assume that marriage resource availability positively influences male and female entrepreneurs in this sector.

Furthermore, the study found that over 70% of female and male small-scale agro-processors possess an educational level up to the secondary level (Ekerete & Ekanem,2015; Ampadu-Ameyaw *et al*., 2015; Swai, 2017; Githinji, 2017; Akpan *et al.*, 2020; Akpan *et al*., 2020 and Mthombeni *et al.*,2021). At the same time, Ampadu-Ameyaw *et al.* (2015) found that most small-scale agro-processors had less than six years of formal education. They attributed the low education to poverty and some parents' disinterest in school for their girls. The low education of these women is consistent with a study by Mazibuko *et al.* (2018) and Quartey *et*

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al. (2015), which suggests that most micro and small business entrepreneurs in Africa have no or little education. On the contrary, the current study found that 11.2% of female and 3.6% of small-scale male agro-processors in South Africa do not have formal education, while the majority acquired secondary education. This also implies that most higher education graduates have not embraced entrepreneurship despite more education skills related to good business management (Githinji, 2017). Mthombeni *et al.* (2021) and Adom (2019) discovered results contradicting the current study. They found that 30% and 22% of their respondents had completed post-secondary education, compared to 55.7% in the current research. The results demonstrate that most respondents are highly educated, implying that the respondent's level of education has no positive impact on the economic empowerment of small-scale agro-processors.

The study further found that females and males have 5.6 years and 4.6 years of experience in business, respectively. At the same time, females have 5.3 years of experience in the agro-processing business compared to 4.3 years of males, an average of 4.8 years for both genders. In contrast, Morris *et al.* (2019) found that most small-scale agro-processors had 11.89 years of experience in the agro-processing business. A study by Williams *et al.* (2016) found that about half (50%) of the agro-processors in Ghana had engaged in agro-processing activities for more than 10 years, whereas 36% had been in operation between four and 10 years. About 14% of the agro-processors had been in business operation for three years or less. In addition, a study by Githinji (2017) found that small-scale agro-processors have been in the industry for over five years. Long years of business engagement provide an experience that is an important asset that may contribute to improved performance if best practices have been learned over the years.

Furthermore, Williams *et al.* (2016) indicate that education and training play a key role in developing the abilities of existing entrepreneurs to grow their businesses to tremendous success, hence an essential factor to consider for improved productivity. It is argued that the limited years of experience in the business and the agro-processing industry are the primary reasons for the failure of small-scale agro-processors in South Africa. Therefore, investing in capacity building for small-scale agro-processors is essential to achieve sustained growth in these enterprises.

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The descriptive analysis from this study has also shown that more females, compared to males, are small-scale agro-processors. The mean value of their years of experience in the agro-processing sector was five years for females and four years for males. The short(er) duration displayed by the mean years of experience by agro-processors indicates the necessity for capacity building for small-scale agro-processing enterprises to achieve strategic economic empowerment.

TABLE 3: Socioeconomic Characteristics of the Respondents

Gender	**Female**		**Male**	
Socio-economic variables	**Frequency**	**Percent**	**Frequency**	**Percent**
Gender	365	72.6	138	27.4
Marital status				
Married	134	36.7	47	34.0
Widowed	36	9.8	2	1.4
Divorced	27	7.4	3	2.2
Separated	29	8.0	11	8.0
Never married	139	38.1	35	25.4
No response	0	0.0	40	29.0
Employment status				
Employed	27	7,4	12	8,7
Self-employed	284	77,8	114	82,6
Pensioner	32	8,8	3	2,2
Entrepreneur	20	5,5	9	6,5
Unemployed	2	0,5	0	0
Highest qualifications				
No schooling	41	11.2	5	3.6
Primary and secondary	226	61.9	93	67.4
Certificate	89	24.4	33	23.9
Diploma	7	1.9	6	4.3
Degree	2	0.6	1	0.8
Agro-processing specialty				
Drying	156	42.7	62	44.9

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Canning	32	8.8	6	4.3
Bottling	48	13.2	24	17.4
Juicing	23	6.3	11	8.0
Powdering	72	19.7	18	13.0
Paste/puree	14	3.8	4	2.9
Cleaning	20	5.5	13	9.4
Entrepreneurial Position				
Director	1	0.3	2	1.4
Owner	334	91.5	126	91.3
Managing Director	6	1.6	3	2.2
Manager	24	6.6	7	5.1
Educational Background				
Agriculture	132	36.2	51	37.0
Science	95	26.0	40	29.0
Commerce	94	25.8	27	19.6
Engineering	17	4.7	16	11.6
Humanities	25	6.8	3	2.2
Medicine	2	0.5	1	0.7
Employment and Experience				
	Mean	SD	Mean	SD
Experience in the business	5,6466	3,21287	4,6594	2,64022
Experience in the agro-processing	5,3753	3,29484	4,3551	2,71734

5.2. Analysis of the Influence of Capacity Building on the Economic Empowerment of Small-Scale Agro-Processors in South Africa.

This section discusses the results from the multiple regression analysis on the influence of capacity building on the economic empowerment of small-scale agro-processors in South Africa. Table 4 shows the determinants of economic empowerment of small-scale agro-processors, namely infrastructure, resources, transformation, and capacity building. According to the results, infrastructure and resources, transformation, and capacity building account for 16.5% of these enterprises' economic empowerment variance (R2 = 0.165, adjusted R2 = 0.160,

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F (3, 499) = 32.876). Additionally, Table 2 reports the unstandardised (β), Standardised (Beta) regression coefficients and semi-partial correlation (Sr2) for each predictor in the regression model. The results reveal that capacity-building (Beta = 0.274, p = 0.000), transformation (Beta = 0.152, p = 0.000), infrastructure, and resources (Beta = 0.075, p = 0.050) were significant and influenced economic empowerment of small-scale agro-processors.

TABLE 4: Determinants of the Economic Empowerment of the Small-Scale Agro-Processors.

	Collinearity Statistics						
Variables	**β**	**Beta**	**Lower**	**Upper**	**Sr^2**	**Tolerance**	**V.I.F.**
(Constant)	1,514***		0,890	2,138			
	(0.318)						
Infrastructural	0,026*	0,075	-0,004	0,056	0.005	0,849	1,178
resources	(0.015)						
Transformation	0,056***	0,152	0,021	0,091	0.017	0,728	1,374
	(0.018)						
Capacity building	0,073***	0,274	0,048	0,098	0.056	0,744	1,343
	(0.013)						

Notes: *R^2 = 0.165, Adjusted R^2= 0.160, F (3, 499) = 32.876. *** = P< 0.000, * = P< 0.10, F^2 = 0.198 (small effect size)*

The results also revealed that the influence of these factors was low (F2 = 0.198). Among these factors, capacity-building had a significant impact, followed by transformation, infrastructure, and resources. This finding is consistent with the findings of Coppock et al. (2011) and Daninga (2020), whose studies revealed that human capacity building significantly impacted Ethiopia's impoverished and Chinese communities, respectively. Nwankwo and Ezeokafor (2020) and Palmioli et al. (2020) have also found that capacity-building is essential in improving farmers' lives using local cassava varieties and food systems. Similarly, Geet al. (2020) have found that agricultural transformation significantly improves small peasants' livelihood systems. Ombaka *et al.* (2020) have found that technical skills, entrepreneurship infrastructure network, and transformation are essential in enhancing small-scale agro-processors's capacity building. The study findings concur with other findings, which reveal that agricultural transformation is

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critical for small-scale agro-processors in South Africa. Findings from the study's conclusions also reveal the role of capacity building in enhancing the strategic economic empowerment of small-scale agro-processors.

Table 4 below depicts the types of capacity building: mentorship, technical skills, leadership skills, access to information, and financial skills. All these types have a mean score of above 18, which indicates that each variable is significant for the capacity building of small-scale agro-processors. However, mentorship and technical and financial skills have a considerable influence. Furthermore, the overall Cronbach Alpha for capacity building is 0.780, and the Cronbach Alpha for each variable is above 0.70, with mentorship (0.754), financial skills (0.780), and technical skills (0.735). Various studies concur with the current study's findings that mentorships are critical for the capacity building of small businesses and assist the businesses to be more productive (Muchau, 2013; Bjursell & Sadbom, 2018; Kuratko, Neubert & Marvel, 2021). Their findings concur with the current study but differ from the findings by Muchau, who noted that mentorship does not positively influence the capacity building of small-scale agro-processors. In another study on mentorship's influence on business performance, Kuratko *et al.* (2021) found that more coachable entrepreneurs are ultimately more successful during their time in these programs and are more satisfied with their mentorship experience. The general and overall observation is that mentorship is a critical capacity-building type for the economic empowerment of small-scale agro-processors.

Table 5 below depicts that technical skills have an overall Cronbach Alpha of 0.735. These results demonstrate that technical skills significantly influence the capacity building of small-scale agro-processors. In terms of technical skills, the current study concurs with various studies that technical skills are critical for the capacity building of small businesses (Almahry, Sarea & Hamdan, 2018; McKenzie, 2021; Ahmad *et al*., 2018; Akpan, Udoh & Adebisi, 2022). Technical skills include written and oral communication, technical implementation, and organising skills (Almahry *et al.*, 2018). Their study found that the technical skills of small-scale agro-processors are improved by the level of entrepreneurial education and vice-versa. A study by McKenzie (2021) found that access to technical skills increases profit and sales on average by 5 – 10 percent. Therefore, small-scale agro-processors' access to technical skills will improve their capacity-building abilities and business success.

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Dahlstrom and Talmage (2018), Hussain, Salia, and Karim (2018), and Umar, Sasongko, and Aguzman (2018) show that financial skills are critical for the success of small businesses. Hussain *et al.* (2018) examined the relationship between financial literacy, access to finance, and growth among small- and medium-sized enterprises (SMEs) within the Midlands region of the United Kingdom. It assesses whether financial literacy assists SMEs in overcoming information asymmetry, mitigates the need for collateral, optimises capital structure, and improves access to finance. The study found that financial literacy is an interconnecting resource that mitigates information asymmetry and collateral deficit when evaluating loan applications; therefore, financial literacy should be part of the school curriculum. The analysis suggests enhanced financial literacy, reduced monitoring costs, and optimises firms' capital structure, positively impacting SMEs' growth. Financial management knowledge is recognised as the core resource that aids effective decision-making by owners of SMEs. These studies concur with the current study's findings that financial skills are a crucial variable for the capacity building of small-scale agro-processors.

Table 5 below shows that mentorship, technical, and leadership skills have the highest Cronbach's Alpha of 0.754, 0,735, and 0,728, respectively. This shows that the South African government should invest in mentorship programmes and technical and financial skills to achieve increased capacity building for small-scale agro-processors, significantly influencing the economic empowerment of small-scale agro-processors. Since the agricultural extension officers are responsible for the capacity building of small-scale agro-processors, they should dedicate their resources towards mentorship and technical and leadership skills to achieve the economic empowerment of small-scale agro-processors in South Africa.

TABLE 5: Types of Capacity Building in the Economic Empowerment of Small-Scale Agro-Processors.

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Capacity building					
Mentorship	18,5984	19,181	0,507	0,304	0,754
Technical skills	18,4254	18,098	0,565	0,358	0,735

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Leadership skills	18,3380	17,575	0,588	0,364	0,728
Access to information	18,3479	17,403	0,609	0,417	0,720
Financial skills	18,4175	19,108	0,502	0,298	0,756
Overall Cronbach's Alpha					0.780

6. CONCLUSIONS AND RECOMMENDATIONS

The study aimed to analyse the influence of capacity building on the economic empowerment of small-scale agro-processors in South Africa, focusing on its implications for industrial development. The study revealed that capacity building significantly influences the economic empowerment of small-scale agro-processors in South Africa compared to infrastructure, resources, and transformation. The study revealed that capacity building's influence on economic empowerment of small-scale agro-processors is Beta = 0.274 and p=0.000. Since most small-scale agro-processors in South Africa are women-owned businesses, the government should target support for the agro-processing enterprises owned by women.

The study further discussed the types of capacity-building programmes. It was revealed that mentorship, financial, and technical skills are critical for capacity building, influencing the economic empowerment of small-scale agro-processors. It is recommended that the South African government should prioritise and invest in mentorship and financial and technical skills programmes to achieve the economic empowerment of small-scale agro-processors. The capacity-building initiatives should, amongst others, include these parameters. Therefore, the South African government should prioritise these parameters to enhance the economic empowerment of small-scale agro-processors. Future research could investigate the impact of identified parameters along with the commodity classifications in various regions of South Africa.

In addition, it is recommended that governments develop policies and programmes to support the capacity building of small-scale agro-processors and invest in capacity building to achieve the economic empowerment agenda of South Africa. Furthermore, the agricultural extension officers should dedicate their resources towards mentorship and technical and leadership skills to achieve the economic empowerment of small-scale agro-processors in South Africa. Lastly, the economic empowerment of small-scale agro-processors through capacity-building

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programmes will contribute towards South Africa's industrialisation and structural transformation agenda. Since most small-scale agro-processors are women, it is further recommended that agricultural extension officers develop capacity-building programmes geared to them. Lastly, to achieve increased industrialisation and structural transformation, capacity-building programmes should include training small-scale agro-processors in technical skills such as using advanced manufacturing tools and machinery since most small-scale agro-processors process their products manually or through old production technologies.

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