



## ASSESSMENT OF FACTORS HINDERING MARKETING AMONG SMALLHOLDER VEGETABLE COOPERATIVE FARMERS IN POLOKWANE MUNICIPALITY, LIMPOPO PROVINCE, SOUTH AFRICA

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### ABSTRACT

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The South African agricultural sector plays an important role in creating jobs, alleviating food insecurity and poverty, and contributes to exports. Agricultural commodities from smallholder farmers are often lost after production due to numerous marketing constraints which make it challenging for smallholder farmers to survey full lucrative markets. This, among other challenges, reduces smallholder farmers' motivation to participate in formal (commercial) or lucrative markets. The study examined factors hindering marketing among smallholder vegetable cooperative farmers in the Polokwane Municipality. Data used were collected through structured questionnaire from a random sample of one hundred and twenty smallholder cooperative vegetable farmers. Descriptive statistics, the Marketing Hindrance Index and Tobit model were employed as analytical tools to accomplish the objectives of the study. Results of the data analysis revealed that some of the factors hindering marketing among smallholder vegetable cooperative farmers include source of water and types of vegetables grown. The result of Tobit regression analysis revealed that access to credit, access to reliable information about marketing, age, access to storage and farming experience in years were significant variables influencing marketing. In view of the research findings, the study recommends encouragement of youth participation in agriculture, improved access to agricultural information and formal market access and enabling accessibility through the development of better infrastructure as critical to enhancing marketing in the study area.

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## INTRODUCTION

The first cooperative to be established was the Franche-Comté community in France. It emerged to be no accordance with regards to the precise origin of cooperative societies. There are some arguments that the first cooperative was established in Europe apart from this cooperative (Franche-Comté community in France). Many cooperatives were established in other countries as time emanate. With maturing of more cooperatives, cooperative principles raised. The Equitable Pioneers of Rochdale Society (EPRS) was developed in 1844. This cooperative

represented a band of unemployed community representatives who were twenty-eight in number and introspected of joining their insufficient resources for the exceptional of the band (Sebonkile *et al.*, 2015)

According to Ravinder (2017), the South African cooperatives eventually, controlled agricultural production, marketing and processing in rural areas and developed into powerful business ventures. Due to injustices brought by the past laws of South Africa blacks participated as general workers within cooperatives. The government later developed a Cooperative Act in 2005 of which is based on international cooperative principles. Today, cooperatives seek to fuse the first and second economy of south Africa as major interventions. This is done through the encouragement of previously disadvantaged blacks to form cooperative enterprises. This has also served the purpose of exterminating poverty and decreasing the level of unemployment in South Africa.

Marketing has always been an issue for smallholder farmers. Farmers had to form groups to receive help from the government as a method of eliminating many challenges including marketing. Smallholder vegetable cooperative farmers in particular still face challenges in marketing. Cooperatives are like any other business they should serve the market in efficient way and effectively. It has to be managed and must survive financially. Although the government has put in place strategies to help smallholder farmers to be more productive and participate in the market, the challenge is persisting. Several studies have been conducted on the marketing of smallholder co-operative farmers in Limpopo, however, an assessment of factors hindering marketing among smallholder vegetable co-operative farmers in the Polokwane municipality is still needed. Hence, this study aimed to investigate the factors hindering marketing among smallholder “vegetable” cooperative farmers in the Polokwane Municipality.

Marketing is an action of promoting and selling products or services from farmers to consumers (Antwi and Seahlodi, 2011). To meet specific demand and prospects marketing begin on the farm with designing and producing. Aspects such as market information and market prices help farmers make better decisions in planning at the stage before planting and sell the excess produced. (Bothloko and Oladele, 2013). Marketing plays a prominent part in gathering the long-term goals of economic advancement (Bothloko and Oladele, 2013). The pricing is unchanged the retail end of the industry does not reply to the supply and demand all due to the absence of marketing information (Xaba and Masuku, 2012). Generally, it is revealed that cooperatives play a very exceptional and prominent role in ensuring food security. This is due to the fact that those situated in cooperatives being more food secure and those that are not situated to any form of cooperative (Oluwatayo, 2009). It is against this backdrop that this study examined factors hindering marketing among smallholder cooperative farmers in the Polokwane Municipality of the Limpopo Province in South Africa.

Marketing plays a captious role in alleviating poverty, food security, and sustainable agriculture (Xaba and Masuku, 2012). Middlemen provide an association between farmers, markets and buyers when farmers sell their produce. Middlemen have access to agricultural market information, the working conditions of the market and exceptional knowledge. There is a sentiment that middlemen are more

advantaged than the farmers due to poor access to markets and agricultural markets by smallholder farmers. When farmers sell their produce, middlemen contribute to an association between them, markets and buyers. Good access to markets and market information may assist farmers avoid middlemen while selling their produce and hence benefit. To attain this, it is foremost for the framers to enhance the educational capacity in agricultural marketing (Magesa *et al.*, 2020).

Agricultural marketing is engaged with moving of agricultural commodities from the farm to the consumer. A large number of related exercises such as production, growing, planning harvesting, packaging, grading, storage distribution, transportation and sale contribute to the marketing of farm produce (Sultana, 2012). Farmers in Bangladesh only carry out a few of those marketing activities due to their illiteracy and inappropriate infrastructure. Mediators in agricultural product marketing play an outstanding part in making the agriculture business a hazardous business by consuming most important portions of the advantages from the real farmers and achieving high profit by putting a high price for the consumers of agricultural products.

Marketing challenges faced by smallholder farmers:

Smallholder farmers are prevented from participating in latent fruitful markets because they lack information, access to services and assets, (Daff, 2012). Farmers normally sell their vegetables to the neighbours and local shops at the lower price, because in deep rural areas people are usually unemployed, lack spending power and cannot pay higher prices.

Smallholder farmers in Tanzania are faced with two most important interference, they are restricted markets and market access. The formation of farmers' organisation is one way to conquer these constraints because it will improve access to markets while reducing transaction costs (Aku *et al.*, 2018).

Introducing smallholder farmers to lucrative markets in the agricultural stay the most important problem. There is a need to determine those constrains that are presently hindering smallholder farmers from participating and taking advantage from potential markets (Mdlalose, 2016).

Cooperative marketing:

According to Geoffrey *et al.* (2014), Crowd marketing should be put as of importance in marketing to enhance the compact position of smallholder farmers and as a means of lowering business costs. Disseminating of price information among others can be done through aggregate communications, government administration, and extension officer. Farmers who market their product or commodities at urban or rural markets should have the privilege of Contract marketing. Cooperatives need to be well directed and in place, particularly at their development stages, having seen it as a plumb channel of meeting the necessity of majority poor people in rural areas. Human resource, development, should be made a priority through education because with advance education households are less exposed to food insecurity (Oluwatayo, 2009). The development of marketing cooperatives would allow farmers to market their commodities and to locate individual small marketing production challenges, transport and high transportation costs in order to captivate and enter lucrative markets. Efficient and effective quality extension services should be provided to equip farmers with prominent abilities in the vegetable production and give beneficial

marketing information to the farmers. According to Abdullah *et al.* (2013), farmers cooperative can be developed at the local level of the country. The cooperative can be established as a form of marketers for smallholder farmers and guarantee a sincere price to consumer and farmers. This cooperative should involve farmers in the local areas and monitored and controlled by them. Major challenges in the cooperative which should be considered must include marketing orientation programmes, proper management, capital requirements and other activities. Successful cooperatives can ensure farmers and consumers sincere price and alleviate the plethora of middleman from market.

Capitalist markets should be established in order for cooperatives to compete and put a strain on their liberal principles. These ‘twin actualities’ of cooperatives speculate the disproportion between their internal standards and the external conditions in which they have to survive. (Parker *et al.*, 2014). According to the Reserve Bank of India “a cooperative marketing society is an association of cultivators formed primarily for the purpose of helping the members to market their products more profitably than possible through the private trade”. The purpose of a cooperative is not to impact resource achievements only to the keepers; it is to create advantages of members of the group.

## **MATERIALS AND METHODS**

### **Study area:**

The study was conducted in Polokwane Municipality which is located in Limpopo Province. The name Polokwane municipality comes from the city of Limpopo called Polokwane. It is the major economic centre with 38 wards and the largest metropolitan complex in the north. It is indicated that the area is more of an urban area than a rural area. The population size is 628 999, with 178 001 households. The number of households practising agriculture is 41,867 (Municipality Capacity Assessment, 2018).

### **Sampling method:**

Primary data was collected for the study and it was done through interviews. A structured questionnaire was used to interview one hundred and twenty smallholder cooperative farmers. The study used multistage random sampling method to sample the cooperative farmers of Polokwane Municipality. The municipality consists of 38 wards where a specific number of cooperatives from each ward was sampled based on the probability proportionate to size.

### **Analytical methods:**

Analytical tools employed include descriptive statistics, marketing hindrance index and Tobit regression model. The Descriptive statistics technique was employed to summarise the socio-economic characteristics of smallholder cooperative farmers. This was done in the form of tables, frequencies, and charts to summarise the results of the data that were collected. The results were obtained from SPSS and transformed into tables and graphs in Microsoft Excel. The marketing hindrance index was used to identify factors hindering marketing of smallholder cooperative vegetable farmers. This index is calculated by taking the total number of factors hindering marketing among smallholder vegetable cooperative farmers divided by the total number of factors identified by the study. Crop rotation, crop insurance, crop sharing, source of water, agricultural inputs, quantity of vegetables, quality of vegetables, types of

vegetables farm size and subsidies were used for the purpose of computing the Marketing Hindrance Index. The Marketing Hindrance Index score ranges from 0 to 1. An index score of 1 refers to farmers who are highly affected by the factors that hinder marketing. An index score of 0 refers to farmers as those who are not affected by factors hindering marketing. The Tobit Model was employed to know the degree of marketing hindrance faced by smallholder vegetable cooperative farmers.

According to Wooldridge (2013), the Tobit Model can be expressed as follows:

$$Y^* = Y, \text{ if } 0 < Y \leq 1$$

$$Y_i^* = a + \beta X_i + e_i$$

Where:  $Y_i^*$  is the observed dependent variable (factors hindering marketing),  $\beta$  is a vector of unknown parameters,  $X_i$  is the vector of the independent variables and where:  $i=1, 2, \dots, n$ ;  $a$  is the constant term.

Tobit regression is used because the dependent variable (factors hindering marketing) is censored with a lower limit of 0 and an upper limit of 1. Therefore, the Marketing Hindrance Index (MMHi) values (Table 1), obtained using equation (1), were used as dependent variables (factors hindering marketing) and regressed with the independent variables. The empirical Tobit Model can be expressed as:

$$MMH_i = a + \beta_1 X_1 + \dots + \beta_{12} X_{12}$$

Where: MMHi (generated as shown in Table 1) is the dependent variable,  $a$  is the constant term and  $\beta_1$  to  $\beta_{12}$  are the parameters to be estimated while  $X_1$  to  $X_{12}$  are the hypothesised variables (Table 1) influencing marketing among smallholder vegetable cooperative and  $e_i$  is the error term

Table (1): Description of variables

Dependent variable	Description	Unit of measurement
Marketing hindrance	$\frac{\text{no of marketing hindrances highlighted by cooperative}}{\text{total no of cooperative hindrances in the study area}}$	INDEX (MMHi)
Gender	1 male 0 otherwise	Dummy
Educational level	Years of schooling	Years
Age	Age of the farmers	Years
Marital status	1 if married 0 otherwise	Dummy
Household size	Size of the household	Numbers
Farming experience in years	Number of years in farming	Years
Training in agricultural marketing	1 if cooperative farmers have training agricultural marketing 0 otherwise	Dummy
Access to credit	1 if cooperative farmers have access to credit 0 otherwise	Dummy
Access to reliable information about marketing	1 if cooperative farmers have access to reliable information about marketing 0 otherwise	Dummy
Transport cost	Cost incurred for transport	Rands
Extension service	1 if cooperative farmers have access to extension service 0 otherwise	Dummy
Access to storage	1 if cooperative farmers have access to storage 0 otherwise	Dummy
Insurance	1 if cooperative farmers have insurance 0 otherwise	Dummy

## RESULTS AND DISCUSSION

Marketing hindrance:

Table 2 illustrates the degree of marketing hindrance for smallholder vegetable cooperative farmers in the Polokwane Local Municipality. A marketing hindrance of between 0.01 and 0.33 shows farmers that are lowly affected by the factors. Marketing hindrance of 0.34 to 0.66 shows farmers that are affected by the factors that hinder marketing at a medium level; marketing hindrance of 0.67 to 1 shows farmers that are highly affected by factors hindering marketing (Miruts, 2016). From Table 2, The farmers that are lowly affected is 5% and About 54.5% of farmers are affected at a medium level. Only 5% of the farmers are highly affected by factors that hinder marketing in the Polokwane Municipality. And 11.5% of the farmers are not affected by factors.

Table (2): Degree of marketing hindrance

Marketing hindrance degree	Polokwane municipality
High (0.67-1)	32 %
Medium (0.34-0.66)	54.5%
Low (0.01-0.33)	5%
None	11.5%

Socioeconomic Characteristics of Smallholder Cooperative Vegetable Farmers:

Table 3 shows that the mean for age of the respondent is 57.12. This shows the average age of smallholder vegetable farmers. The minimum age of the respondents is 23 years while the maximum age is 92 years. The migration of youth from rural areas to urban areas have negative impact on agriculture development because they seek non-agricultural jobs due to their lack of interest in farming, the current farmers are aging. The mean value for household size was 5.57, which is the average number of members who live with the respondent in the same house. The smallest household size is 1 and the highest number of dependents is 17. The households size outcomes indicate the number of members who depend on the respondent's returns from vegetable production. Table 3 further shows that the mean value for the respondent's number of years in farming is 11.33. This is the average number of years that the respondents were in vegetable farming. The minimum number of years that the respondents were engaged in cooperative vegetable farming is 0 years and the maximum is 55 years. Older people have been in farming for many years when compared to the youth who have mostly inherited the farms from their grandparents. Farming experience is important in addressing some of the challenges that could be faced during production.

Again, Table 3 shows that the mean value of the number of years that the farmer went to school is 8.01. The highest number of years that the participants went to school is 16 and the lowest is 0 which implies that some of the smallholder farmers interviewed managed to reach university while others did not attend school at all.

Factors Influencing Marketing among Smallholder Cooperative Vegetable Farmers:

Some socioeconomic characteristics of smallholder cooperative vegetable farmers (Table 4) were regressed against the marketing hindrance index (MMHi) and AGE (age of the respondent) was found to be positive and statistically significant at

5% level, implying that this variable had the likelihood of influencing smallholder vegetable cooperative farmers' marketing. This implies that a unit increase in the number of years of sampled smallholder vegetable farmers is likely to affect marketing of cooperative vegetable farmers. This concurs with the results of Geoffrey *et al.* (2014) which declared that unlike older people, youth is more eager to contribute to the markets. Miruts (2016) states that the age of the farmer plays an important role in describing the level of experience the farmer has with regard to agricultural production and marketing. Older farmers tend to be more experienced in the production of vegetables than younger farmers. Also, farming experience was found to be positive and statistically significant at 1%. This implies that with the number of years, smallholder farmers' participation in marketing would increase with the year's farmers have been engaged in farming. A farmer is assumed to make an excellent decision in selling commodities compared to those with fewer years in farming because it is presumed, they have proficiency on the prices, market area and standard essentials. Sebopetji and Belete (2009) carried out a study in the Letaba Local Municipality, South Africa, where they analysed the decision of farmers to use credit or not. The results revealed that farmers' decision to acquire credit was positively and significantly affected by farming experience which aligns with the results of this study.

Table (3): Summary statistics of socioeconomic factors (continuous variable)

Variable definition	mean	Std deviation	Min	Max
Age	57.12	15.371	22	91
Household size	5.57	2.230	1	17
Farming experience in years	11.33	8.028	0	55
Years of schooling	8.01	4.779	0	16

The variable access to credit was found to be negative and statistically significant at 10% level. This implies that a unit increase in access to credit is likely to hinder the marketing among smallholder vegetable cooperative farmers. This is rather expected because if farmers have access to credit, they will use the money for the advancement of their farms. According to Kebedom and Ayalew (2012), the availability of credit enables farmers to focus on increasing their farm inputs other than focusing on limited resources. Matsane and Oyekale (2014) state that farmers' lack of access to credit can be due to the lack of property which can be used as collateral by lenders; and also lack information about the types of credits available for farmers and their interest rates. Awotide *et al.* (2014) state that credit gives farmers an incentive to invest in new technology.

Variable access to storage was found to be negative and statistically significant at 5% level of significance. The negative sign obtained is due to the fact that only a small comparison of the farmers had access to storage facility. This implies that a unit increase in access to storage is likely to hinder marketing among smallholder vegetable cooperative farmers. The storage of vegetables plays an important in the distribution chain because of the perishability nature of vegetables. Once vegetables were harvested, they were immediately taken to the markets. Farmers kept their other

vegetables in open air sheds and wet sacks. And because of the perishability nature of tomatoes, they were kept in their kitchen.

Access to reliable information about marketing was found to be positive and statistically significant at a 5% level. This implies that one-unit increase in access to reliable information is likely to increase marketing among smallholder vegetable cooperative farmers. Generally, smallholder lacked knowledge and understanding of markets and all related market information including market niches and market failures and market intelligence information, they were also not aware of consumer demand. Smallholder Vegetable farmers are likely to have access to market only if they are aware of better market information. Perhaps this might be due to the fact that, the access to market information can assist any farm business in planning the marketing process (Magesa *et al.*, 2014). If farmers have more reliable information about marketing of vegetables, they will be able to make better decisions. Mittal and Mehar (2013) state that farmers use multiple sources of information because a single source might give them incomplete information.

Table (4): Empirical results of factors influencing Marketing.

Variables	Coefficients	SEE	T-ratio	P>T
Constant	0.1441182	0.1562305	0.92	0.358
Gender	0.0119375	0.0369385	0.32	0.747
Age	0.0058707*	0.002294	2.56	0.012
Marital status	-0.0075776	0.011698	-0.65	0.519
Education level	0.0034	0.0040744	0.83	0.406
Household size	0.0022335	0.0093553	0.24	0.812
Access to storage	-0.230633**	0.1083844	-2.13	0.036
Access to reliable information about marketing	0.1214943*	0.065044	1.87	0.022
Access to credit	-0.841238*	0.0479361	-1.75	0.082
Access to extension services	-0.0042097	0.0467862	-0.92	0.928
Insurance	0.1144544	0.0932056	1.23	0.222
Training in agricultural marketing	0.0390745	0.0395903	0.99	0.326
Farming experience in years	0.0094403***	0.0033511	2.82	0.006
Log-likelihood	-49.66			
Prob>chi square	0.088			
Pseudo R square	0.5749			
Likelihood ratio chi square	29.10			



## CONCLUSION AND RECOMMENDATIONS

This study examined factors hindering marketing among smallholder cooperative vegetable farmers in the Polokwane Municipality. Evidence from the findings supports literature that smallholder farmers face challenges in marketing their produce. Furthermore, there are some challenges in the market environment that hinder marketing among smallholder farmers. The statistically significant variables found were access to reliable information about marketing, access to credit, age, farming experience in years and access to storage. Furthermore 5% of the smallholder vegetable farmers were lowly affected, 54% of the smallholder vegetable farmers were averagely affected, 32% of these smallholder vegetable farmers were highly affected by factors hindering marketing amongst them and only 11.5% of the farmers were not affected. The results indicate that there are marketing hindrances among smallholder vegetable cooperative farmers. Also, farm size, the source of water, type of vegetables, quality of vegetables, agricultural inputs, kind of vegetables, subsidies, crop rotation, crop insurance and crop sharing were identified as factors hindering marketing among smallholder vegetable cooperative farmers in the Polokwane Municipality.

Based on the findings, it was recommended that farmers should be educated on the terms and conditions of loan agreements and banks should try to charge reasonable interest rates for small-scale farmers because they do not produce more compared to commercial farmers. Also, since access to information plays an important role in enhancing farmers' knowledge about the type of agricultural commodities that are trending in the market, efforts should be geared at enhancing access to basic marketing information to ease marketing of their produce.

تقييم العوامل التي تعوق التسويق بين صغار مزارعي تعاونيات الخضروات في بلدية بولوكون، مقاطعة ليمبوبو، جنوب أفريقيا

### الخلاصة

يؤدي القطاع الزراعي في جنوب أفريقيا دورا هاما في إيجاد فرص العمل، وتخفيف حدة انعدام الأمن الغذائي والفقر، ويسهم في الصادرات. وكثيرا ما تفقد السلع الزراعية من صغار المزارعين بعد الإنتاج بسبب القيود التسويقية العديدة التي تجعل من الصعب على صغار المزارعين مسح الأسواق المربحة بالكامل، وهذا يقلل من بين تحديات أخرى، من دوافع صغار المزارعين للمشاركة في الأسواق الرسمية (التجارية) أو المربحة. وبحثت الدراسة العوامل التي تعوق التسويق بين صغار مزارعي تعاونيات الخضروات في بلدية بولوكوني. وجمعت البيانات المستخدمة من خلال استبيان منظم من عينة عشوائية من مائة وعشرين مزارع خضروات تعاونيا من أصحاب الحيازات الصغيرة. واستخدمت الإحصاءات الوصفية ومؤشر عائق التسويق ونموذج Tobit كأدوات تحليلية لتحقيق أهداف الدراسة. وكشفت نتائج تحليل البيانات أن بعض العوامل التي تعوق التسويق بين صغار مزارعي تعاونيات الخضروات تشمل مصدر المياه وأنواع الخضروات المزروعة. وكشفت نتيجة تحليل الانحدار Tobit أن الحصول على الائتمان، والوصول إلى معلومات موثوقة حول التسويق والعمر والوصول إلى التخزين والخبرة الزراعية في السنوات كانت متغيرات كبيرة تؤثر على التسويق. وبالنظر إلى نتائج البحوث، توصي الدراسة بتشجيع مشاركة الشباب في الزراعة، وتحسين فرص الحصول على المعلومات الزراعية، والوصول الرسمي إلى الأسواق، وتمكين الوصول إليها من خلال تطوير بنية تحتية أفضل باعتبارها عنصرا حاسما لتعزيز التسويق في مجال الدراسة.

**الكلمات المفتاحية:** التقييم، والقيود التعاونية، والتسويق، ومزارعو الخضروات، و جنوب أفريقي

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