

Full Length Research Paper

Reduction of transaction cost within the South African potato processing industry

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Typically, potato production has a high level of asset specificity and uncertainty, which are the major causes of transaction cost. The South African table potato market is associated with the spot market governance whereas the processing potatoes mainly make use of the more hybrid format of contracting. The aim of this study was to assist potato processing companies in South Africa to establish long-term relationships with producers and also to reduce producers' transaction costs. Questionnaires were used to determine the magnitude of transaction costs within the potato industry. Interviews were held with the managers of five successful alliances within the potato industry in order to establish if the alliance assisted in overcoming market obstacles and what elements should be in place in order to build a successful long-term relationship with their buyer. The spot market and the contract market within the potato industry were compared in terms of transaction costs. The results indicated that the contract market had the lowest transaction costs. The results indicated that by forming an alliance, producers were able to overcome the obstacles they faced and the elements which should be in place were sound administration, trust and loyalty, market research, marketing and traceability.

Key words: Transaction cost theory, potato marketing, contracts, marketing power, farmer alliances.

INTRODUCTION

The potato industry in South Africa is important to the South African economy. It contributed approximately 38% of the gross value of vegetables produced in South Africa during 2007 (National Department of Agriculture (NDA), 2008). The potato industry consists mainly of seed potatoes, table potatoes and potatoes for the processing industry. During 2007, the processing industry handled about 19% of the potatoes harvested in South Africa, of which 55% were processed into potato chips, 43% into crisps, and the remaining 2% was used for canning, mixed vegetables and other use (Potato, 2009). The last decade saw a substantial increase in the volume of

potatoes that was processed into frozen fries – from 70,000 tons in 1997 to 170 000 tons in 2007, which reflects a growth of 143% (Potato, 2009). Thus, frozen fries are becoming increasingly important as a final product within the potato industry of South Africa and as a market for producers.

Potato producers incur high levels of transaction costs that include temporal and physical asset specificity. Asset specificity relates to the ability of the specific asset to be transferred to alternative uses (Williamson, 2000) or the opportunity costs of assets in terms of alternative uses. Assets considered to be highly specific are those assets with comparatively low value elsewhere, which consequently give the owner of the asset strong interest to continue with the transaction (Hai, 2003). According to Milagrosa (2007), "asset specificity relates to the amount of money, time and effort put into the transaction by the

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transacting parties". Temporal specificity relates to the fact that potatoes are mainly produced in the summer rainfall areas with only a small part produced during winter. Processing potatoes are extremely sensitive to changes in sugar content and cannot be stored. The potatoes also have a limited window period for harvesting. Late harvesting of potatoes has a negative impact on the quality and its suitability for processing. Finally, potatoes that can only be planted on the same piece of land every fourth year due to soil health condition is also evidence of a high level of temporal specificity.

Physical asset specificity associated with the potato production relates to the need for physical assets that are used exclusively for potatoes. Such specific physical assets include, amongst others, harvesting equipment that can only be used to harvest potatoes. The need for such specific physical assets contributes to increased transaction costs for potato producers. Two other causes that influence transaction costs are the uncertainty in the yield variability of the potatoes and the variability in the price for the potatoes.

South African potato producers have two main marketing channels. Firstly, the normal fresh market, which is defined as the spot market. The second channel is the processing market, which can be divided into two sub-sectors, namely frozen fries and crisps. This channel is known as the contract market. There are also various structures that can be used to manage producers' transaction costs and marketing strategies, one of which is the Transaction Cost Economic Theory.

Transaction Cost Economic Theory is one of the "branches" of New Institutional Economics (Kherrelah and Kirsten, 2002). The fundamental argument in Transaction Cost Economics is that economic governance is a prerequisite for using resources in an economically optimal manner, and thus, also for enhancing economic efficiency. Within Transaction Cost Economics, institutions are furthermore hypothesised to be transaction cost-minimizing, which may evolve with changes in the nature and source of transaction costs (Kherallah and Kirsten, 2002). A firm is expected to choose the governance structure that will minimise the transaction costs associated with the specific transaction under consideration. Various authors such as Hobbs (1997), Mantungul et al. (2001), De Bruyn et al. (2001) and Jordaan and Kirsten (2008) used the Transaction Cost Economic Theory in their research methodology.

The authors mainly used proxy variables to represent transaction costs in regression analysis. The main focus of the more recent research is that the transactions itself is the basis of analysis. Jordaan (2012) assessed the attributes of the transaction associated with the respective governance structures and includes the spot and contract market. Milagrosa (2007) used Transaction Cost Economics to determine the most effective governance structure for the vegetable industry in the

Northern Philippines. Jordaan (*ibid*) used the same theory to evaluate the most effective governance structure for raisin producers in the Northern Cape. Both authors conclude that the contracting structure is the most effective transaction cost minimizing structure compared to other governance structures such as the spot market. Contracting has an important role to play in the South African potato industry because the processing industry is growing at a fast pace. The potato processors of South Africa are, however, striving to get more permanent long-term contract producers to enter into the processing industry. These contracts also benefit producers, mainly because of a reduction in uncertainty and also because producers can use the contracts as security in order to obtain production loans. South African producers sometimes struggle to enter into long-term relationships because of issues such as economies of scale, the strict quality requirements of the buyer and the fact that the buyer requires constant volumes all year round. According to Vasilescu (2009), Ortman and King (2007) and Birchall et al. (1996), producers can overcome these obstacles if there is closer cooperation within the supply chain. Weatherspoon and Reardon (2003) argued that producers can overcome obstacles within a market if they collaborate and obtain economies of scale. Gonzalez-Diaz et al. (2006) stated that producers are too far removed from their consumers and need to integrate into the supply chain to make it shorter and move closer to their market. Gonzalez-Diaz et al. (2006) proposed a business model called a Farmer Controlled Business (from here on Farmer Controlled Business and collaborative structures will be referred to collectively as alliances). With this model, producers are still the owners and managers of their own farm units, but they can share in the benefits of being part of a bigger collaborative organisation. International studies have found that collaboration allow smaller farm units to gain economies of scale, share resources, minimise risk, enter new markets and decrease their transaction costs (Milagrosa, 2007, English Farming and Food Partnerships, 2004). Therefore, it is important to evaluate currently, successful alliances in the potato industry in order to establish a better marketing strategy for both producers and processors. Alliances can allow producers to buy inputs, produce, or market together. Alliances can be a formal legal entity like a cooperative or private company, which allows producers to remain the owners of their farms (Gonzalez-Diaz et al., 2006). The establishment of alliances can be a vehicle for producers to overcome the obstacles they face in the market. These alliances can assist producers in becoming more adaptive, efficient and flexible within the supply chain (Terziovski, 2003). Producers who form alliances are able to share their skills and expertise, and achieve greater marketing power within the industry. Alliances can enhance the competitiveness of producers and allow them to form relationships with the businesses which

offer market contracts (Coviello et al., 1998). It also provides producers with the opportunity to take advantage of economies of scale and still be the managers and owners of their farms (Business Environment Specialists, 2009) and therefore, allow flexibility in their management practices (Venkataramanaiah and Parashar, 2007). When producers form relationships with their buyers, it leads to vertical linkages which can also result in horizontal linkages which can build capacity and provide these producers access to markets (Business Environment Specialists, 2009).

The aim of this study was to assist potato processing companies in South Africa to establish long-term relationships with producers and also to reduce producers' transaction costs. The magnitude of transaction costs within the potato industry's (table and processing) different governance structures was determined and whether formation of alliances assisted potato producers to overcome the obstacles they faced in the market. The critical elements necessary to establish longer term relationship between producers and processors were identified.

DATA AND PROCEDURES

Transaction costs

A structured questionnaire was used to conduct telephonic interviews in 2010 to determine the magnitude of the transaction costs within the potato industry. The study area consisted of the Eastern Free State region of South Africa in which the largest concentration of farmers producing potatoes for table and processing industry was found. A census method was used and all the respondents (n=70) identified from a producer list of Potatoes South Africa (PSA) were included in the study. The questionnaire was compiled from a literature review and submitted to three key role-players within the potato industry for review. Corrections and suggestions were incorporated until the role-players agreed that all the important aspects were captured in the questionnaire. A pilot study was conducted and two PSA managers and two commercial farmers were interviewed.

Farmer controlled businesses

Successful alliances within the potato industry were identified by PSA. An alliance was deemed successful when producers made a contribution in terms of production, marketing and hectares planted within their area. Five alliances were identified within five different provinces in South Africa (Free State, Limpopo, Mpumalanga, Natal and Western Cape). Members in each alliance farmed in the same area. Each manager of an alliance was interviewed. Qualitative information was collected, regarding the success factors and benefits of the alliance. The study focused on one industry as single industry studies offer greater control over extraneous variations such as industry characteristics and problems that are specific to the industry (Mohr and Spekman, 1994; McDougall and Robinson, 1990).

The questionnaire was pre-tested on industry representatives and minor adjustments were made to the questionnaire before use. Face-to-face interviews ensured that the respondents completely understood the questions and were able to elaborate on their answers. The questionnaire consisted of open-ended questions,

which ensured that the respondents could supply in-depth information about the reasons why they established the alliance, the advantages it holds and also the key elements that ensure the successful relationship with their buyer. The five alliances comprised the following:

Alliance A (Free state)

Alliance A produced and marketed their potato tubers, and also re-invested in the group by building laboratory and storage facilities. They successfully regulated the production in the area. As a result there has been a drastic decline in viruses spreading in the area. The alliance had 14 members and they expanded to include growers who sell tubers to the alliance on a contract basis. The alliance identified their key success factors as follows: their management team, a feasible mission and vision, loyal members, and specialist employees who were able to give expert advice to the members.

Alliance B (Limpopo)

In order to decrease their input costs, this alliance established their own fertilizer plant. A group of eleven producers were invited to join the alliance as equal shareholders. The members lived in close proximity and therefore, perceived regular communication between members and transparency as their key success factors.

Alliance C (Mpumalanga)

Alliance C was originally a cooperative, which was converted to a private company. The alliance had five members who pooled their production and packaging in one pack-house and transported their commodity to a buyer. They also had an on-farm laboratory. The members identified their standard of technology, their exclusivity (only 5 members) and their integration into the supply chain as their key success factors. They did not have any long-term contracts and negotiated prices on a seasonal basis. Negotiations were based on price offered and trustworthiness of the buyer.

Alliance D (Natal)

Producers established Alliance D as a marketing channel for fresh potatoes. The members paid a membership fee, which made them loyal to the group. This alliance gave potato producers economies of scale as they marketed their produce in a pool. From a buyer's perspective, they preferred working with the alliance as they did not have to negotiate with 50 producers but rather with one processing their potatoes.

Alliance E (Western Cape)

Alliance E produced a specific cultivar to meet the requirements of the consumer (baking, boiling, and frying). Producers in the alliance marketed under the brand name of the alliance. Thus, producers gained access to new markets, specifically, the retailers selling to high income consumers. The consumers were willing to pay extra for a differentiated branded and high-quality product, which is what the alliance could provide.

Procedures

The approach of Williamson (2000) adopted and refined by

Milagrosa (2007) and Jordaan and Grové (2010) was first used to establish the magnitude of transaction costs for both the table potato industry (spot market) and the processing potato industry (contract market). The actual amount of transaction cost could be calculated, but the level of transaction cost for each governance structure could be determined, given the attributes of the respective transactions (Jordaan and Grové, 2010).

Asset specific was represented by different proxy variables. Assets specifically used for production within a governance structure were regarded as physical asset specific. The producers were asked whether they invested in their own transport vehicles, made use of additional equipment and had invested in additional packaging materials relevant to the other governance structure. The relative strength of the respective proxies for physical asset specificity was elicited by expressing the number of respondents who indicated to have invested in the specific physical asset as a percentage of the total number of respondents who used the specific governance structure. The higher strength was indicated by ++ and lower strength indicated by +.

In terms of human specific questions, the respondents were asked to indicate their number of years of formal education, farming experience and age. The higher the number of years, the higher is the level of human specificity.

Uncertainty was linked to proxies such as: delayed payments, buyers who withheld important information, buyers who manipulated prices, freight rejections, overall risk relevant to the alternative governance structure (Spot vs. Contract), and price uncertainty at planting time. All the proxies could increase transaction cost levels and producers were asked whether any were present in their specific governance structure. The magnitude of each proxy was measured by expressing the number of respondents as a percentage of the total number of respondents using the specific governance structure under consideration or calculating an average value for each proxy.

Transaction frequency was measured by determining the number of times producers had contact with their buyers (negotiating, extension services and price information). The higher the contact between the buyer and the producer the higher is the transaction frequency.

Other proxies representing transaction cost included search and information, negotiation and pricing. When the producer made an effort to search for information the transaction costs for the specific governance structure increased. Longer price negotiations resulted in higher transaction costs, delayed payment, and consequently higher transaction cost for the specific governance structure. The producers were asked whether they made extra effort to collect price information, length of price negotiation, and payment period measured using a Likert scale of 1 to 5 and relative strengths were indicated as: + low, ++ high +++ very high.

The results of the relatively small sample size were tested for significant differences between the governance structures for each proxy using SPSS and Microsoft Excel, the Fisher exact and ANOVA test. The relative weights of transaction cost represented by each proxy were then added and compared for both of the governance structures to indicate the governance structure with the highest transaction cost.

RESULTS AND DISCUSSION

Transaction costs

The potato industry for human consumption consists of two main sectors, the table potato sector and the processing potato sector. The table potato sector mainly makes use of the governance structure called the spot

market. In this governance structure, the producers receive the price determined by the market, namely the fresh produce market.

The processing industry uses a hybrid governance structure, more specifically contracts. In this governance structure, the buyer (processor) of the produce determines the price. In this section, both of the governance structures will be compared in terms of transaction cost. Sixty-three of the 70 interviews were eligible for analysis; seven responses to the questionnaires were insufficient, possibly because respondents did not want to share sensitive information. Twenty producers (32%) used the contract market and 43 (68%) used the spot market. The attributes of the transactions investigated were the physical asset specific, human asset specific, uncertainty, frequency and other proxy variables. Table 1 provides a summary of the transaction cost associated with potato producers in the Eastern Free State region.

Asset specificity

A significant number of respondents selling on the spot market made use of all three attributes within asset specificity (Table 1).

This indicated that the producer needed additional equipment, such as washing and drying facilities, which was only used within the production system of the spot market. The respondents had to make use of additional packaging material in order to produce for the spot market, thus, increasing the transaction cost. The producers in the spot market also made use of their own vehicles and additional production processes, which increased the transaction cost. Overall, the transaction cost of the spot market in terms of asset specific was much higher than the transaction cost of the contract market.

Human asset specific

None of the attributes within human asset specific were statistically significant, mainly because the difference between the two governance structures sample size was too small for comparison.

Uncertainty

There were no significant differences between the two governance structures in terms of delayed payments and buyers who withheld important information. The rest of the attributes had, however, a significance level of 1% and included buyers who manipulated prices, rejection of freights by the buyers, certainty of final prices at planting time and the level of overall risk relevant to other governance structures. Manipulation of prices by buyers could not occur in the fresh market system according to

Table 1. Transaction attributes by type of governance structure used by potato producers in the Eastern Free State region.

Transaction attribute	Total farmers ¹	Percentage of respondents ² (%)	Relative strength ³	Level of significance in difference (%)
Physical assets				
Invest in equipment				1
Contract market	3	15	+	
Spot market	40	93	++	
Invest in packaging				1
Contract market	2	10	+	
Spot market	39	91	++	
Additional processes				1
Contract market	1	5	+	
Spot market	40	9	++	
Invest in transport				5
Contract market	5	25	+	
Spot market	23	53	++	
Human	Average years			
Age				
Contract market	44.40		NA ⁴	
Spot market	43.65		NA	
Experience				
Contract market	21.77		NA	
Spot market	22.5		NA	
Education				
Contract market	14.84		NA	
Spot market	13.9		NA	
Uncertainty	Number of farmers			
Delayed payments				
Contract market	3	15	NA	
Spot market	7	16	NA	
Buyer withhold info				
Contract market	10	50	NA	
Spot market	18	42	NA	
Manipulation of prices				1
Contract market	11	55	++	
Spot market	0	0	-	
Rejection of freight				1
Contract market	19	95	++	
Spot market	0	0	-	
Price certainty at plant time				1
Contract market	19	95	+	

Table 1. Contd.

Spot market	27	63	++	
Risk relative to other governance	Scale 1-5			1
Contract market	2.25		+	
Spot market	3.79		++	
Frequency				
Contact with buyer	Scale 1-5			1
Contract market	2.07		+	
Spot market	3.1		++	

¹Number of producers responding; ²Percentage of producers who responded relative to the total for each governance structure; ³“+” Low transaction cost; “++” High transaction cost; ⁴Difference is not statistically significant, thus one cannot assign a weight on the relative strength of transaction cost caused by the specific attribute under consideration; NA = Not applicable.

the producers and as such, none of the producers in the spot market governance structure indicated that this was a problem. In the contract governance structure, 55% of the producers indicated that price manipulation was a problem and subsequently, had higher transaction costs. Similarly, the spot market freights were not rejected and the producers only received a lower price for sub-standard produce. In the contract market, 95% of the producers indicated that freight rejection increased their transaction cost. However, data from the questionnaire indicated that not one of the producers had a larger rejection than 10% of the total produce. The producers were asked to indicate the certainty of prices at planting time for delivery after harvesting. Most (95%) of the producers in the contract market, but only 63% of the producers in the spot market were certain of their prices. In terms of the overall risk relative to other governance structures on a scale from low to high, the contract market had a lower average than the spot market (2.25 and 3.479 respectively). This indicated that the perceived risk was higher in the spot market, which meant that the higher the risk, the higher the transaction cost.

In summary, the first two attributes indicated that the contract market had a higher transaction cost level and the last two attributes indicated that the spot market had higher transaction cost. Thus, one can conclude that both of these governance structures had high transaction costs in terms of uncertainty. Regarding the level of frequency, producers were asked how much contact they had with buyers. On a scale of low to high, the spot market producers had more contact with buyers than contract producers (average of 3.1 and 2.07 respectively). Thus, the spot market had a higher transaction cost.

Other proxies representing transaction costs

Other proxies representing transaction costs for each

governance structure is presented in Table 2. The topics such as search and information, and negotiation were chosen to give an indication of transaction costs. Producers were asked if they experienced trouble in finding information. In the spot market, 60% of the producers indicated that they searched for price information thereby, increasing the transaction cost because of increased management time and cost. Whereas in the contract market, only 25% of the producers indicated that they searched for price information.

Negotiation of prices and payment period were examined. The negotiation period and payment was deemed very important because these factors could be time consuming. The subsequent transaction costs would increase in terms of time management and cash flow.

The contract market had the highest average for both factors, which meant that the contract market had higher transaction cost in terms of negotiation (Table 2).

A summary of the relative strengths of transaction cost for the two governance structures is given in Table 3. The spot market was the governance structure associated with the highest transaction cost. This indicated that the contract market was the best cost minimising governance structure and confirmed the results of previous authors such as Milagrosa (2007) and Jordaan and Grové (2010). However, with uncertainty and negotiation, the contract market generated higher transaction costs than the spot market. Marketing strategies and management practices can improve these transaction cost levels and can facilitate the process of long-term contract development. Farmer controlled businesses

Alliance A

This alliance obtained the exclusive rights to a Dutch potato cultivar. In order to access the market and decrease the costs of obtaining the rights to the cultivar, the producers in the area formed an alliance in order to

Table 2. Other proxies representing transaction costs for each governance structure.

Transaction attribute	Total farmers	Percentage of respondents (%)	Relative strength*	Level of significance in difference (%)
Search and information				
Search for price information				5
Contract market	5	25	+	
Spot market	26	60	++	
Negotiation	Average**			
Negotiation of prices				10
Contract market	3.15		++	
Spot market	2.58		+	
Pricing				
Period before paid				1
Contract market	3.90		++	
Spot market	3.07		+	

*Relative strength: +, Low; ++, High; +++, very high; **average response measured using a Likert scale of 1 - 5.

Table 3. Summary of transaction cost results for potato producers.

Transaction attribute	Governance structure	
	Spot market	Contract market
Physical assets	High	Low
Human	NA	NA
Uncertainty	High	High
Frequency	High	Low
Search and information	High	Low
Negotiation	Low	High
Total transaction costs	High	Low

market the cultivar as an organisation.

This allowed the producers to increase their marketing power in the potato industry. The alliance controlled production in the area by specifying planting dates for each member. This decreased the risk of disease spreading in the region and therefore, maximized output. As a result of controlling the production, the alliance was able to provide constant volumes to their buyer, at a standardised quality.

Alliance B

A group of farmers identified fertilizer as the main contributor to high input costs and started their own fertilizer plant to increase their profit margins. The alliance was able to provide their members with the opportunity to obtain rebates from buying their inputs from the alliance. The members of the alliance were able to decrease the fertilizer cost in the area and also expand their plant to service more producers who were not part of the alliance. By allowing non-members to buy from the

plant, the alliance increased their capacity and economies of scale, as they bought and produced in larger volumes.

Alliance C

This group of producers formed a cooperative. As a cooperative, they were able to invest in storehouses located at a central location. This enabled the producers to combine their products, pack in a central location and transport from there. Their logistics improved while cost decreased. In the long term, they were able to streamline the procedure by packaging and transporting their products themselves. This enabled the producers to integrate forward into the supply chain. In addition, the alliance built a testing laboratory and was able to trace each potato back to the land on which it was produced. The alliance could ask a premium from their buyer because they did their own packing, transport, testing and could guarantee the traceability of their commodity. Thus, their transaction costs were increased.

Alliance D

Producers established the alliance in order to create a marketing channel for their fresh potatoes. The alliance had 26 shareholders who were loyal to the group and therefore, did not sell their produce through another marketing channel. Their loyalty was ensured because they were able to generate higher prices in the alliance using economies of scale and they were guaranteed payment within a specified time.

Alliance E

This alliance wanted to enter a high-income market and supply to a specialised retailer. The alliance obtained the rights to a cultivar that complied with the requirements of their buyer and their target market. The consumers would pay a premium for the differentiated and exclusive brand. The alliance were also able to pool their skills and resources in order to create their own packaging that served to inform the buyer on the best suitable uses for the specific cultivar (baking, boiling or frying).

Important elements within an alliance

It is important to identify the critical elements that have to be in place in order to establish a relationship with the buyer. The following elements were identified as very important:

1. Administration: Sound administrative policies must be in place to ensure the transparency of the alliance. Administration policies also assist in negotiation processes when the manager of the alliance can prove why they are negotiating for a higher price. From the interviews with the alliances, it was clear that higher producer prices should not be the primary objective of forming the alliance. Higher prices are only generated as the relationship between buyer and producer matures and becomes mutually-dependant.
2. Trust: The alliances indicated that trust amongst the members of the alliance is the most important as there will always be other alliances who see them as competitors or even suppliers who feel threatened by a successful alliance. Trust between a buyer and producer takes time to establish, but a contract is always needed, notwithstanding.
3. Access to updated information: Many of the interviewed alliances do market research in terms of producer, input and consumer prices as well as, supply and demand or employ a person responsible for communicating all major market trends to the members of the alliance. This is important for long- and short-term strategic planning and both producer and buyer can learn from each other.
4. Traceability of the commodity: Traceability of the

commodity is becoming more important to the consumers and buyers. The interviewees indicated that in order for them to earn a premium, they marketed their cultivar under a brand name. They also developed new packaging, which informed consumers about the attributes of the cultivar. This assisted the consumer to buy potatoes most suited for their needs (baking, cooking boiling).

5. Marketing: Marketing as a group was more affordable and more effective. When the members pooled their produce, the alliance was provided with more marketing power and the opportunity to negotiate better prices was obtained. Many of the alliances indicated that they did not market in collaboration with their buyer. They marketed their produce as a group to their buyer, who then sold to the rest of the chain.

Conclusion

The South African table potato market is associated with the spot market governance whereas the processing potatoes mainly make use of the more hybrid format of contracting. The magnitude of these governance structures was tested in the study. The spot market had the highest transaction costs in the following attributes:

Physical assets, frequency and search for information. In terms of uncertainty, both the spot and the contract market had high transaction costs. The contract market had higher transaction costs in the negotiation attribute because the spot market producers had to accept the market price and there was no real opportunity for bargaining. In the contract market, constant negotiation was present and could become time-consuming. The spot market had the highest transaction costs, which makes the contract market the transaction cost minimising governance structure. However, the contract market still had some attributes which had high transaction costs. In order to establish long-term contracts, these transaction costs must be reduced.

In order to overcome barriers to and participate in specific governance structures, producers formed alliances. Members of the five alliances were interviewed and critical elements that had to be in place in order to establish a relationship with the buyer were identified as administration, trust, access to updated information, traceability of the commodity, and marketing.

This study indicated that producers in Farmer Controlled Businesses lowered their transaction costs and formed long-term relationships with buyers when critical elements were in place. There is still a need to quantify the decrease in costs and the effect of the relationship on the sustainability of the producer, especially, in times where market concentration, mechanisation and changes in the economy are some of the key factors affecting producers in South Africa.

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