ANALYSIS OF THE GOVERNANCE STRUCTURE USED BY EKSTEENSKUIL RAISIN PRODUCERS: IS THERE A NEED FOR MORE VERTICAL COORDINATION?

By Jordaan, H. and Grové, B.

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Abstract
Eksteenskuil raisin producers are a group of emerging raisin producers who are successfully participating in a sophisticated value chain. They collectively export their raisins through the fairtrade initiative. Emerging farmers typically face high levels of transaction cost. The high levels of transaction cost in combination with the changing nature of the marketing environment, suggest that the different modes with which transactions can be coordinated need to be assessed in order to identify that mode that would minimise the transaction cost. The aim of this paper is to investigate the governance structures that are employed by Eksteenskuil raisin producers in order to determine whether an alternative may not contribute to reducing transaction costs faced by Eksteenskuil producers. The mode of governance employed by Eksteenskuil producers first is compared to the alternative that is widely used by other raisin producers in the region to determine whether the existing alternative may be more efficient. Thereafter the need for more vertical coordination is assessed to determine whether or not a higher level of vertical coordination is needed to reduce transaction cost. Based on the results from this study the specifications-contracting mode of governance that is currently used by Eksteenskuil raisin producers is more efficient than the spot market that is mainly used by other raisin producers in the region. Although complete vertical integration does not prove to be viable at this stage, there still is a need for some more vertical coordination towards the level of strategic alliances.

INTRODUCTION

Since the demise of the Apartheid system in the mid 1990’s, the challenge to link emerging farmers to markets receives high priority within South Africa. The reason for focussing on linking emerging farmers to markets centralise around its potential to contribute to the reduction of rural poverty in South Africa (Letsoalo and van Averbeke, 2005). The sustainable linking of emerging farmers to commercial agricultural value chains remains to be a challenge in South Africa where few success stories exists. Unfortunately for emerging farmers in South Africa, the timing of the efforts to link them to markets corresponds to major changes that are occurring in the agri-food systems. Agri-food systems are changing in response to the global forces of globalisation and liberalisation which have led to “new kinds” of consumers and producers. Shifts in technology and government policies affect both producers and consumers which ultimately cause a shift in agriculture from a commodity industry to a differentiated product industry (Louw, Kirsten and Madevu, 2005). The change in the agro-food systems mean that “all members of the food supply chain must therefore make more strategic choices to realign their businesses and better serve consumer needs” (Boehlje, 1999, as cited by Louw et al., 2005; Boehlje, 2003, as cited by Louw et al., 2005; Louw et al. 2004, as cited by Louw et al., 2005). Thus, not only need emerging farmers in South Africa to adjust the way they have been doing things over the years, they also have to act strategically in order to compete with other commercial farmers in the same value chain.
Despite the above mentioned challenges, a number of success stories where emerging farmers do participate in agri-food chains, are documented. Amongst others, such studies include studies by Weatherspoon and Reardon (2003); Bienabe et al. (2004); Louw et al. (2005); Louw et al. (2006); Louw et al. (2008); and Hendriks and Lyne, 2009). The role of horizontal coordination by means of collective action is very much evident from a number of the documented success stories. Typically, emerging farmers are resource poor with small land sizes. Collective action contributes to overcoming the problems associated with the small scale of production and the reduction in other transaction costs faced by emerging farmers (Weatherspoon and Reardon, 2003). Emerging farmers, however, still face substantial amounts of transaction cost. Transaction cost economic theory suggests that more vertical coordination will also reduce transaction cost. To the authors’ knowledge, no researchers have attempted to investigate the transaction cost associated with transactions within which emerging farmers from South Africa participate in order to identify to efficient governance structure for the specific transaction. The aim of this paper is to investigate the governance structure employed by emerging raisin producers at Eksteenskuil to determine whether or not it is the most efficient alternative that is available for them. First of all the governance structure that is currently used by Eksteenskuil producers is compared to an alternative that is used by most of the other raisin producers in the area to determine whether or not the alternative is more efficient. Thereafter, the need for more vertical coordination by Eksteenskuil raisin producers is investigated to identify the optimal vertical coordination strategy given the attributes of the transactions.

The next section covers a review of literature on Transaction cost economic (TCE) theory, followed by a discussion of the data and procedures used within this paper. The results are presented and discussed thereafter, followed by the conclusions and recommendations based on the results.

**LITERATURE REVIEW**

**Transaction cost economic (TCE) theory**

The fundamental argument in TCE theory is that economic governance is a prerequisite for using resources in an economic optimal manner. Institutions are hypothesised to be transaction cost minimising arrangements that may evolve with changes in the nature and source of transaction cost. A firm is expected to choose that governance structure that will minimise the transaction cost associated with the specific transaction under consideration. Note that transaction cost is distinguished from transformation cost which relates to the transformation of the physical product into the end product. Transaction costs are associated with the transfer of ownership of the physical product. It is associated with, amongst others, assembly, distribution, negotiation, payment, distribution of risk, financing, and enforcement (Kherallah and Kirsten, 2002).

Transaction cost is caused, amongst others, by the attributes of the transaction, namely the level of asset specificity, transaction uncertainty and transaction frequency (Williamson, 1998). Asset specificity relates to the ability of the asset to be transferred to alternative uses (Williamson, 1998), or thus the opportunity cost the asset has for alternative uses (Hai, 2003). The lower the opportunity cost of the asset, the less value it has for alternative use and hence the higher the level of asset specificity. Asset specificity itself can take a variety of forms; physical asset specificity, human asset specificity, dedicated assets, brand name capital, and temporal asset
specificity. The higher the level of asset specificity in turn gives rise to a condition of bilateral dependence between two transacting partners (Williamson, 1998). As the second cause of transaction cost, Milagrosa (2007) distinguishes between exogenous and endogenous transaction uncertainty. Exogenous uncertainty relates to uncertainty in either the institutional environment (i.e. changes in market policy, practices and regulation), or the market environment (i.e. variation in demand, or changes in the price of complementary or substitute products). Endogenous uncertainty, on the other hand, refers to behavioural uncertainty relating to behaviour of participants in the transaction. As the final cause of transaction cost, transaction frequency refers to the number of transactions that takes place. The more frequently transactions occur the more justifiable it becomes to employ an expensive governance structure (Hai, 2003) to reduce risk, avoid opportunistic behaviour and prevent hold-up (Milagrosa, 2007).

**Alternative modes of governance**
Governance structures can best be described along a spectrum (Shelanski and Klein, 1995). Depending on the attributes of the transaction there are generally distinguished between three types of governance structures (Williamson, 1985). On the one end of the spectrum lies a pure anonymous spot market, while the other end of the spectrum consists of hierarchy or vertical integration. Between those two modes of governance lies a variety of hybrid modes such as contracts and partial ownership (Williamson, 1985; Shelanski and Klein, 1995; Peterson, Wysocki and Harsh, 2001). Figure 1 presents the spectrum of governance structures.

![Strategic Options for Vertical Coordination](image)

*Figure 1: The vertical coordination continuum*
*Source: Peterson et al. (2001)*
Within the spot market as a mode of governance the market price provides incentives for the exploitation of profit opportunities. Individuals can quickly and autonomously respond to market signals. The market typically will be the efficient mode of governance when the underlying transaction is concerned with low levels of asset specificity (Williamson, 1985; Shelanski and Klein, 1995).

Shelanski and Klein (1995) argue that bilateral coordination or even joined ownership may be more desirable whenever more specialised assets are at stake in the transaction, or in the presence of thin product and input markets. Hierarchy, or otherwise referred to as vertical integration, refers to the situation where trading parties are under unified ownership or control. The level of asset specificity plays a major role in the decision whether or not to vertically integrate. The higher the level of asset specificity, the higher is the need for vertical integration. Importantly, however, Rindfleisch and Heide (1997) argue that vertical integration is less favoured when operating in an unfamiliar or rapidly changing environment with high uncertainty. A high level of asset specificity alone, thus, is not sufficient reason to move from spot market governance to vertical integration.

Between the two ends of the continuum, the hybrid forms of organisation deal with bilateral dependency without going so far as vertical integration. Ownership autonomy is preserved, although there are some safeguards to protect parties from opportunistic behaviour by other parties. Peterson et al. (2001) provides a thorough discussion of the different hybrid modes of coordination along the continuum. Specification contracts are legally enforceable establishments of specific and detailed conditions of exchange. Within relation-based alliances the firms involved in the relationship share risks and benefits that emanate from mutually identified objectives. Peterson et al. (2001) cite Martin et al. (1993) who argue that a strategic alliance is relation-based if parties mutually identify objectives; mutually control the decision-making process; and mutually share the risks and benefits. The next level of vertical coordination is referred to as equity-based alliances. Equity-based alliances differ from relation-based alliances through the presence of a formal organisation that has an identity distinct from the exchange actors, and that is designed to be their joint agent in the conduct of the transaction. The different types of hybrid governance structures mainly differ in terms of the intensity of control which increases the further you move to the right in Figure 1.

The number of different modes by which the transaction can be organised emphasises the need to thoroughly assess the different modes of governance in order to identify the efficient governance structure for the specific transaction under consideration.

**Approaches for transaction cost analyses**

Although there is consensus in the literature on the causes of transaction cost, there still is no standardised method to quantify the transaction cost associated with a transaction. A number of recent studies that applied TCE include, amongst others, Hobbs (1997), Mantungul, Lyne, and Ortmann (2001), de Bruyn et al. (2001), Milagrosa (2007), and Jordaan and Kirsten (2008). Except for Milagrosa (2007) and Jordaan and Kirsten (2008), all of the studies use proxy variables to represent transaction cost in regression analyses to explain marketing behaviour. Milagrosa (2007), on the other hand, assesses the levels of transaction costs associated with alternative governance structures. She assesses the attributes of the transaction associated with
the respective governance structures for vegetable marketing in the Benguet Province in the Philippines. Although she too uses proxy variables to represent transaction cost causing attributes, she compares respective governance structures based on the levels of the transaction cost associated with it. Jordaan and Kirsten (2008) use a decision making framework of Peterson et al. (2001) to qualitatively investigate the need for more vertical coordination in the mohair supply chain of South Africa. The framework focuses on the analysis that decision makers would make to arrive at a specific coordination strategy to govern a specific exchange relationship. They found that the spot market is predominantly used in the mohair supply chain, and consequently questioned whether or not more vertical coordination may be more efficient. The approach of Milagrosa (2007) thus allows one to compare the relative weight of transaction cost associated with respective governance structures, while the approach of Jordaan and Kirsten (2008) and Peterson et al. (2001) allows for investigating the need to adjust the current governance structure through more/less vertical integration.

DATA AND PROCEDURES

Data
Eksteenskuil raisin producers are a group of emerging farmers who produce raisins for the fairtrade market. Although they collectively export their raisins to the fairtrade market, all farmers have complete autonomy with regard to raisin production. Individual farmers produce their raisins and are responsible to deliver it to the depot of South African Dried Fruits (SAD) who is the only fairtrade accredited processor of raisins in South Africa. The fairtrade initiative requires individual farmers to form an organisation before they can export their produce via the fairtrade initiative. Eksteenskuil raisin producers are currently organised as a registered agricultural cooperative, the Eksteenskuil Agricultural Cooperative (EAC). The processed raisins are exported collectively by EAC. Eksteenskuil raisin producers who participate in the fairtrade initiative are contracted with the processor and the fairtrade buyer. The contract suggests a level of vertical coordination is taking place along the value chain within which Eksteenskuil raisin producers participate. The specific type of vertical coordination relates to the specifications contract on the vertical coordination continuum as described by Peterson et al. (2001). The question beckons whether or not specifications-contracting is the efficient mode of governance, or is there a need for more vertical coordination to reduce transaction cost faced by Eksteenskuil raisin producers.

Data was obtained by means of personal interviews with key role-players within the raisin industry, and a questionnaire survey. The questionnaire was compiled from a literature review and numerous discussions with key role-players within the raisins industry. The key role-players include some input suppliers, the board of Eksteenskuil Agricultural Cooperative (EAC), representatives from South African Dried Fruit (SAD), a previous governmental extension officer who was very much involved with Eksteenskuil raisin producers, and also some Eksteenskuil and commercial raisin producers. The questionnaire was comprehensively discussed with the key role players to ensure that all the important aspects are covered. Corrections and suggestions from those discussions were handled where after the questionnaire again was discussed with the role players. Once they agreed that the questionnaire captures all important aspects, a pilot survey was conducted where four Eksteenskuil farmers and four commercial farmers were interviewed. They were asked to be hyper critical with respect to
understanding the questions to ensure that questions within the questionnaire are interpreted the way it was intended. After their suggestions were handled, the survey was conducted in June 2009.

All of the members of EAC were invited to participate in the study. A total of 43 Eksteenskuil farmers were interviewed of which only 26 questionnaires were deemed to be acceptable to be included in the study\(^1\). In order to be able to compare Eksteenskuil farmers to other farmers in the region, commercial raisin producers from the three irrigation boards surrounding Eksteenskuil (Keimoes, Neilersdrift, and Kanoneiland) were also invited to participate in the study. Thirty one commercial farmers agreed and were interviewed to complete the questionnaire. All questionnaires were completed by personally interviewing respondents to ensure that all questions were answered and interpreted the way it was intended. The complete sample thus consists out of 57 respondents of which 31 (54\%) indicated that they use the spot market as a governance structure, while 26 (46\%) indicated that they use contracts. The contracts meet the requirements of the Specifications Contract type of hybrid governance structure. Although there is a higher level of coordination control compared to the spot market governed transaction, the level of control still is relatively low.

**Procedures**

For the purpose of this paper the approach of Milagrosa (2007) is first used to compare the levels of transaction cost associated with the hybrid mode of governance (specifications contract) used by Eksteenskuil raisin producers to that of the spot market governed transactions used by other raisin producers along the Orange River. Thereafter the approach by Peterson *et al.* (2001) is used to assess the question whether or not there is a need for more vertical integration by Eksteenskuil raisin producers.

**Comparing transaction costs of the governance structure used by Eksteenskuil raisin producers to that used by other producers in the raisin industry**

Note that one cannot calculate the actual amount of transaction cost associated with a given governance structure. One can only determine whether the level of transaction cost for one type of governance structure is more than that of another based on the attributes of the respective transactions.

- **Asset specificity**

The specific type of asset specificity is represented using proxy variables. Owning an asset that is specifically used for raisin production and/or marketing suggest that the transaction exhibits a higher level of physical asset specificity. Raisin producers were asked whether or not they own a vehicle, have invested in package facilities, storage facilities, and processing infrastructure (i.e. drying trays and mats) which is exclusively used for raisin production and/or marketing. If they have invested in such facilities it is an indication of higher levels of asset specificity. Following the approach by Milagrosa (2007), the relative strength of the respective proxies for physical asset specificity is 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 use

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\(^1\) The research for the purpose of this paper forms part of a bigger project that requires complete information for the purpose of regression analyses; hence all incomplete questionnaires were excluded from the database.
the specific governance structure under consideration\textsuperscript{2}. The relative weights of transaction cost for alternative governance structures then are compared to identify that governance structure associated with the lowest transaction cost. The higher strength is denoted with “++”, compared to “+” of the lower strength.

The level of human asset specificity is represented by the number of years of formal education and experience in the specific activity. The higher the number of years of formal education and experience, the higher is the level of human asset specificity. The different governance structures are compared based on the average numbers of years of education and experience respectively.

- **Transaction frequency**
  Transaction frequency refers to the number of transactions. Producers were asked the number of transactions within which they participated with their buyers. Similar to human asset specificity, governance structures are compared based on the average number of transactions associated with each of them.

- **Transaction uncertainty**
  Respondents were asked whether or not they have received delayed payments from their trading partners, and whether or not they believe that their buyers withhold important information from them. The presence of delayed payments and/or withholding information represents higher levels of endogenous uncertainty and therefore also higher levels of transaction costs. Again the relative strength of each of the proxies for uncertainty is measured by expressing the number of respondents as a percentage of the total number of respondents using the specific governance structure under consideration.

- **Other proxies for transaction cost**
  Other proxies that are used to represent transaction cost include search and information cost, negotiation cost, and the ability to influence the price of the product. Farmers were asked in the questionnaire to indicate the number of processing companies they’ve contacted before deciding to whom to sell their crop. Negotiation costs are represented by the time lapse (hours) in the negotiation process. Farmers were asked to indicate the number of hours it took for them to decide to which processing company to sell the crop. Lastly, farmers were asked to rank on a scale from 1 – 5 the level to which they are able to influence the price they receive for their raisins. The relative strengths of transaction costs are based on the average scores of respondents.

The relative weights of transaction cost represented by all of the above proxies are added for the respective governance structures. The governance structures then are compared based on the relative weights to determine whether the governance structure used by Eksteenskuil farmers is efficient (transaction cost minimising). After identifying which of the two governance structures

\textsuperscript{2} For example, if 18 of the 30 farmers who use the spot market as governance structure invested in storage facilities that are specifically used for raisins, 58% of them have invested in the specific physical asset. If three of the 25 producers under contract have invested in storage facilities, only 12% of them have invested in the specific physical asset. Given that a larger proportion of farmers who use the spot market as governance structure have invested in the specific physical asset compared to those under contract, the relative strength of physical asset specificity for the spot market governed transaction is higher than that for the transaction governed by contract.
is efficient, the decision making framework of Peterson et al. (2001) is used to determine whether or not there is a need for more vertical integration by Eksteenskuil raisin producers.

**Is there a need for more vertically integrated governance structure by Eksteenskuil raisin producers?**

In the framework of Peterson et al. (2001), a decision maker will arrive at a specific vertical coordination strategy by answering five interrelated questions. The framework will only result in a changed coordination strategy if all of the respective questions results in a “yes” answer (Jordaan and Kirsten, 2008). A diagrammatic representation of the decision-making framework for changing vertical coordination strategies is shown in Figure 2.

![Decision-Making Framework Diagram](image)

**Figure 2: A decision-making framework for changing vertical coordination strategies**

*Source: Peterson et al. (2001) as cited by Jordaan and Kirsten (2008)*

**Question 1 – Is the current marketing system too costly?**

According to Peterson et al. (2001) there are mainly two reasons why a current marketing strategy may be too costly. Firstly, it allows costly coordination errors by exposing the firm to opportunistic behaviour of trading partners or it results in chronic over or under production compared to demand. The second reason relates to the method of coordination control that creates more operating cost than the cost reduction in coordination errors that it is designed to
control. If the current strategy is too costly, the process of changing the strategy is initiated and one may continue to ask the second question.

**Question 2 – Would an alternative strategy reduce the “costliness” of the marketing system?**

The second question relates to whether or not another strategy would better match the intensity (and cost) of coordination control with the costliness of coordination errors. The match is judged better or worse under the principle that the more costly the errors the more intense the control needed. Conversely, the less costly the coordination errors the less intense control is needed (Peterson *et al.* 2001). The costliness of the coordination error depends very much on the level of asset specificity, and complementarity (Williamson, 1973, 1975, as cited by Peterson *et al.*, 2001; Mahoney, 1992, as cited by Peterson *et al.*, 2001; and Milgrom and Roberts, 1992, as cited by Peterson *et al.*, 2001). As the level of asset specificity increases the costliness of coordination errors increase since the underlying asset value would be affected adversely by such errors. The presence of complementarity (also referred to as non-separability) implies that the output that is obtained from joining the two parties is larger than the sum of the outputs that would have been produced by the individual activities. Again, the costliness of coordination errors increases with an increase in complementarity. Peterson *et al.* (2001) argue that managers need to assess both of these variables relative to the specific transaction under consideration and then select that coordination strategy that matches the intensity of control with the costliness of coordination error.

**Question 3 – Is an alternative programmable?**

According to Peterson *et al.* (2001), the fact that a potentially better strategy for controlling coordination errors does exist, is not a sufficient reason for adopting the alternative. Since the alternative strategy needs to be workable, the manager must determine whether effective, specific management routines do exist. Decision makers need to go beyond their own experience to search for effective coordination strategies used by others in similar settings. The presence of a programmable alternative allows for moving to the fourth question in the decision-making framework which relate to the implementability of the proposed alternative(s).

**Question 4 – Is an alternative implementable?**

The fact that an alternative is available (programmable) does not necessarily imply that it can be implemented effectively (Peterson *et al.*, 2001). Peterson *et al.* (2001) continue stating that the implementability of a strategy is mainly influenced by the availability of capital, existence of compatible partners, competence of control, and institutional acceptability. In order to be able to implement a new strategy the decision-makers need sufficient capital to finance the change. There needs to be a transacting partner who meets the requirements of the new strategy, and the decision-maker himself also needs to exhibit the necessary competence that is required by the type of control of the underlying transaction. Finally, the change needs to be institutionally acceptable (legal). It needs to comply with formal laws, rules and regulations, and also social, cultural, industrial or group norms. Peterson *et al.* (2001) argues that the decision-maker’s overall assessment of the above four criteria will determine whether or not the strategy change is implementable.
Before one may finally conclude that more vertical coordination will be more efficient one has to consider whether or not the risk/return trade-off for changing from contracting is acceptable.

**Question 5 – Is the risk/return trade-off acceptable?**

In addition to affecting the return, changing the coordination strategy will impact the risk to which transaction partners are exposed. The decision-maker needs to balance the potential returns with the risk that will be incurred with changing the strategy. Only when the decision maker has answered “yes” to all five questions the current coordination strategy will be changed.

The discussion of the decision making framework concludes the section on data and procedures. The results of the transaction cost comparison of the respective governance structures, as well as the application of the decision-making framework for the case of Eksteenskuil raisin producers, are discussed next.

**RESULTS AND DISCUSSION**

**Comparing transaction cost associated with respective governance structures**

Note that the transaction costs associated with the different governance structures can only be assessed comparatively. The attributes of the transactions that are considered for the purpose of this paper relate to the level of asset specificity, uncertainty, and the frequency with which transactions take place. Table 1 provides a summary of the respondents’ replies with regard to the attributes of the transactions that are governed by the spot market (used by non-Eksteenskuil raisin producers) and contracting as a hybrid mode of governance (used by Eksteenskuil producers) respectively. The attributes of the transactions are shown on the left most column; the second column shows the results for farmers categorised by type of governance structure; the third column expresses the result as a percentage of the number of respondents using the specific governance structure; the fourth column shows the relative strength of the specific attribute where + and ++ indicate low and high transaction cost strength respectively; and the last column shows the level of significance between the respective governance structures.

<table>
<thead>
<tr>
<th>Transaction attribute</th>
<th>Total farmers(^1)</th>
<th>As percentage of total respondents(^2)</th>
<th>Relative ranking / Strength(^3)</th>
<th>Level of significance in difference(^4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHYSICAL ASSET</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owns vehicle for raisin transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spot market</td>
<td>16</td>
<td>52%</td>
<td>NA(^5)</td>
<td></td>
</tr>
<tr>
<td>Contract</td>
<td>13</td>
<td>50%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Invest in package material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spot market</td>
<td>2</td>
<td>6%</td>
<td>NA(^5)</td>
<td></td>
</tr>
<tr>
<td>Contract</td>
<td>0</td>
<td>0%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Invest in storage (space rent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spot market</td>
<td>18</td>
<td>58%</td>
<td>++</td>
<td>***</td>
</tr>
</tbody>
</table>

\(^1\) Number of farmers
\(^2\) Percentage of total respondents
\(^3\) Relative ranking / Strength
\(^4\) Level of significance in difference
\(^5\) Not applicable
<table>
<thead>
<tr>
<th>Contract</th>
<th>3</th>
<th>12%</th>
<th>+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invest in drying infrastructure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spot market</td>
<td>25</td>
<td>81%</td>
<td>++</td>
</tr>
<tr>
<td>Contract</td>
<td>6</td>
<td>23%</td>
<td>+</td>
</tr>
</tbody>
</table>

**HUMAN**

Average years formal education

| Spot market | 11.81 | ++  | **  |
| Contract    | 8.88  |     |     |

Average years farming experience

| Spot market | 23.77 | ++  | *   |
| Contract    | 17.35 |     |     |

**UNCERTAINTY**

Received delayed payment

| Spot market | 3  | 10% | NA  |
| Contract    | 5  | 19% | NA  |

Buyer withhold important info

| Spot market | 13 | 42% | NA  |
| Contract    | 8  | 31% | NA  |

**FREQUENCY**

Number of transactions with buyers

| Spot market | 9.65 | ++  | *** |
| Contract    | 4.46 |     |     |

Notes:

1 Number of respondents who indicated that they have invested in the specific physical asset.
2 Number of respondents who have indicated that they have invested in the specific physical asset expressed as a percentage of the total number of farmers who are using the specific governance structure.
3 The relative strength gives a higher weight to that governance structure in which a larger proportion of the respondents who use the specific governance structure has invested in the specific physical asset.
4 ***, **, and * indicate significance levels of 1%, 5% and 10% respectively.
5 Difference is not statistically significant hence one cannot put a weight on the relative strength of transaction cost caused by the specific attribute under consideration.

- **Physical asset specificity**

Significantly more of the respondents who use the spot market as governance structure indicated that they have invested in drying facilities (i.e. drying trays / mats) \( p < 0.0001, \) Fisher’s Exact Test) and storage facilities \( p < 0.0001, \) Fisher’s Exact Test) compared to the farmers under contract. On the other hand, no significant differences were found between the two types of transactions with respect to owning vehicles exclusively for raisins production \( p < 1.000, \) Fisher’s Exact Test), nor with respect to the investment in packing facilities \( p < 0.4951, \) Fisher’s Exact Test). Based on the results, the proxies used to represent physical asset specificity thus indicate that the spot market governed transaction is be associated with higher levels of physical asset specificity and hence transaction cost compared to the transaction governed by contract.
- Human asset specificity
The transaction governed by the spot market is also associated with a higher level of human asset specificity compared to the transaction under contract. Both the average number of years of formal education ($p < 0.0104$, ANOVA test), and the average number of years of experience ($p < 0.0593$, ANOVA test) of respondents who sell their raisins via the spot market is significantly higher than that of farmers who sell under contract.

- Transaction uncertainty
The levels of uncertainty associated with the respective governance structures provide interesting reading. There is no significant difference between the respective governance structures with regard to receiving delayed payments ($p < 0.4481$, Fisher’s Exact Test), nor with regard to the perception that the buyer withhold important information ($p < 0.4221$, Fisher’s Exact Test). One would expect a bilateral relationship between producers and buyers to reduce uncertainty. In the case of Eksteenskuiil some work still needs to be done to reduce the uncertainty.

- Transaction frequency
The transaction frequency in the spot market is also significantly higher than that under contract ($p < 0.0009$, ANOVA Test). The higher transaction frequency associated with the spot market transactions imply that the spot market face relatively higher transaction cost compared to transactions governed by contracts.

- Other proxies representing transaction cost
Table 2 shows the results of questions assessing search and information costs, negotiation costs and the ability of the actor in the transaction to influence the price for his product as causes of transaction costs. As expected, farmers who use the spot market as governance structure on average contacted more buyers (2.61) than those farmers under contract (1.54) ($p < 0.0135$, ANOVA Test). Interestingly, the average number of times of the farmers under contract is more than one. Farmers under contract thus too shop around before selling their raisins instead of simply accepting the price offered by their contracted buyer. Similarly, farmers using the spot market spend significantly more time negotiating with buyers compared to farmers under contract ($p < 0.0162$, ANOVA Test). Finally, farmers who use the spot market indicate that they have more influence on the price of their produce than farmers under contract ($p < 0.0068$). Again this is an interesting finding since one would expect that the formal relationship between Eksteenskuiil producers and their buyer would provide a platform for price negotiations. Except for the ability to influence the price of the product, all of the additional proxies for transaction cost suggest that the transaction governed by the spot market is associated with higher levels of transaction cost compared to the contract-governed transaction.

| Table 2: Transaction costs by type of governance structure |
|---------------------------------|----------------|----------------|----------------|
| Transaction attribute           | Average score for farmers | Relative ranking / Strength | Level of significance in difference |
| SEARCH AND INFORMATION          |                             |                             |                               |
Average attempts to search for trading partner

<table>
<thead>
<tr>
<th>Transaction type</th>
<th>Spot market</th>
<th>Contract</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>

** NEGOTIATION **

Average time lapse in negotiation hours

<table>
<thead>
<tr>
<th>Transaction type</th>
<th>Spot market</th>
<th>Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

** PRICE SETTING **

Able to influence price

<table>
<thead>
<tr>
<th>Transaction type</th>
<th>Spot market</th>
<th>Contract</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tbody>
</table>

Notes:

1 ***, **, and * indicate significance levels of 1%, 5% and 10% respectively.

2 Ability to influence the price to be received for the raisins ranked on a scale from 1-5 where 1 indicates no influence and 5 complete power to influence price.

A summary of the relative strength of transaction cost for the two transaction types based on all of the attributes of the transactions under consideration is shown in Table 3. The governance structure associated with the lowest transaction cost is considered to be the efficient governance structure.

**Table 3: Transaction attributes and transaction costs of governance structures in South African raisin value chain**

<table>
<thead>
<tr>
<th>Transaction attribute</th>
<th>Spot market</th>
<th>Contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search and information cost</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Price setting</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Total asset specificity</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Frequency</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>NA&lt;sup&gt;1&lt;/sup&gt;</td>
<td>NA&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Total transaction costs</td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>

Notes:

1 No significant differences were identified with regard to the level of uncertainty associated with spot market and contracting transactions, hence one cannot elicit which of the two governance structures is associated with a higher level of uncertainty than the other.

The results summarised in Table x show that transactions that are governed by contracts (hybrid mode of governance) are associated with a lower level of transaction costs compared to those transactions that are governed by the spot market. Contracting thus proves to be more efficient as a governance structure than the spot market in the marketing of raisins along the Orange River. There is, however, some concern that the level of uncertainty faced by Eksteenskuil producers is not less than that associated with the spot market transactions. Eksteenskuil farmers and their contracted buyer need to meet to find a way to resolve the problem of uncertainty within their
transacting relationships. Although the results from the above analysis prove that contracting is a more efficient mode of governance than the spot market in the case of Eksteenskuil, it does not say anything about the potential need for further vertical integration by Eksteenskuil raisin producers. This question is covered next.

Is there a need for more vertical integration by Eksteenskuil raisin producers?
According to the decision making framework developed by Peterson et al. (2001) a change in coordination strategy will only be implemented if all five questions have been answered with a “Yes”.

Question 1 – Is the current marketing system too costly?
Although contracting is considered to be more efficient than the spot market, there are still a large number of respondents using contracting (31%) who indicated that they think that the buyers withhold important information from them. Raisin production moreover is associated with a relatively high level of asset specificity. Raisin processors too require assets that are exclusively used for the processing of raisins hence they too are exposed to a high level of physical asset specificity. Similarly the production and processing of raisins are associated with a high level of human asset specificity. Again the human asset specificity is more important at the processing node of the channel. The human agents at the processing plant need sufficient experience to ensure that the end product meets the requirements of (mainly international) consumers. The producer too needs sufficient experience to produce a sufficient volume of good quality raisins (choice grade) that can be processed and marketed through the lucrative export market. In terms of temporal specificity, raisin producers are exposed due to the biological nature of raisins and the climatic conditions at the major raisin producing areas in South Africa. Eksteenskuil is situated in a summer rainfall area hence the maturity of the grapes corresponds to the raining season. Rain at the maturity stage negatively affects the quality of the raisin that is produced. Moreover, rain while the raisins are drying in the sun also has a negative impact on the quality of the raisin that is produced. The timing of the harvesting and drying of grapes thus is instrumental to the quality of raisins to be produced. Overall, raisin production and processing can be considered to be associated with a high level of asset specificity. The high level of asset specificity implies the presence of costly coordination errors that exist in the transaction between producers and processors of raisins. In turn the costly coordination errors indicate the need for more intense control in the transaction between raisin producers and processors.

With regard to the contractual relationship between Eksteenskuil raisin producers, SAD and Traidcraft, there is a high level of complementarity. Neither Eksteenskuil raisin producers, nor SAD can benefit from marketing raisins through the fairtrade initiative without the contribution of the other party. Eksteenskuil does not have the processing and exporting capacity that is required by the fairtrade initiative, while SAD does not meet the fairtrade requirements to be a fairtrade producer of raisins. The combined benefit from Eksteenskuil and SAD thus outweighs the sum of the individual benefits. This high level of complementarity contributes to the costliness of coordination errors along the raisin value chain and serves as an incentive for more intense control.

3 Note that it is the perception of the farmers; no test was carried out to determine whether the buyers really do withhold important information from the producers.
In the case of Eksteenskuil producers using contracting as governance structure, one has to conclude that the current marketing system is too costly. Since the current system is considered too costly, the process of changing the coordination strategy may be initiated for the case of Eksteenskuil.

**Question 2 – Would an alternative strategy reduce the “costliness” of the marketing system?**
A higher level of vertical coordination may reduce the costliness of the coordination errors associated with the current hybrid mode of governance. A higher level of vertical coordination will ensure that the flow of information along the value chain improves, which in turn will reduce the potential for opportunistic behaviour within the chain. Moreover, more intense control may contribute to ensure that raisins of a sufficient quality are supplied to the processing facility. Ensuring supply of high quality produce will reduce the risk within the channel. Thus, changing from contracting to vertical integration as a coordination strategy may reduce the costliness of coordination errors in the case of raisin production and marketing of Eksteenskuil raisin producers.

**Question 3 – Is an alternative programmable?**
Although vertical coordination is likely to reduce the costliness of coordination errors, the programmability of more vertical coordination needs to be assessed before promoting vertical integration as the better strategy. Raisin production is relatively fragmented with a large number of raisin producers compared to only six raisin processing companies within South Africa. Such an imbalance between producers and processors may cause a number of problems. From the producers’ side it negatively affects their bargaining power with processors. Processors in turn face high levels of transaction cost when dealing with the large number of individual producers. The EAC as collective entity acts as an intermediary who negotiates on behalf of individual farmers with the processor and the fairtrade buyer which contributes to the programmability of a higher level of vertical coordination as a coordination strategy.

Raisin producers typically do not exhibit the human capital that is required for the successful functioning of a processing plant. Nor do processing companies exhibit the skills required to produce a sufficient volume of raisins that meet quality requirements of consumers. Both parties thus will need to acquire the necessary skills before they will be able to successfully integrate vertically along the value chain. Vertical integration, in the case Eksteenskuil raisin producers, may be programmable as long as effective, specific management routines could be put into place.

**Question 4 – Is an alternative implementable?**
At this stage there is enough evidence that vertical integration is a programmable alternative and will reduce the costliness of coordination errors associated with contracting within the current situation. With regard to the implementability, however, vertical integration struggle to meet the requirements. From the producers’ perspective, for them to integrate vertically to perform the processing activity of their raisins themselves, they need a substantial amount of capital. Eksteenskuil raisin producers are considered to be resource poor farmers who collectively produce less than 600 tonnes of raisins. Eksteenskuil farmers do not have the required capital to erect a processing plant at this stage.
There are parties within the processing node with which Eksteenskuil producers can collaborate to form a more vertically coordinated relationship. The higher the level of vertical coordination, the bigger is the challenge to find a compatible partner. The actual compatibility of such partners depends on the strategic direction of their businesses. Thorough analyses are necessary to determine the compatibility of Eksteenskuil raisin producers and other parties along the raisin value chain.

With regard to the third condition for the implementability of a coordination strategy, the EAC contributes to the competence of control by Eksteenskuil raisin producers within the current situation. Again the higher the level of vertical coordination, the higher is the requirement of competence of control. Although the EAC may have the competence of control even to form an equity-based alliance, it is questionable whether or not the competence of control exhibited by the EAC is sufficient to exercise the coordination control that is required for vertical integration.

Finally, a change in coordination strategy will only occur when such a change is institutionally acceptable. Further vertical coordination by Eksteenskuil raisin producers does comply with the formal laws providing the regulatory framework for the marketing of agricultural products. The norms of the industry allow for new processing companies to enter the market, as is evident from the increase in the number of processing companies over the past number of years. It also allow for strategic alliances between producers and processors. In principle, the social and cultural rules within the Eksteenskuil community also allow for changing the current coordination strategy to a more vertically coordinated strategy.

Based on the above discussion there is not sufficient evidence that vertical integration is an implementable coordination strategy in the case of Eksteenskuil at this stage. Eksteenskuil farmers will need to raise a substantial amount of capital, and to obtain the competence of control before they can consider vertically integrating any further along the raisin value chain. Assuming for a moment that Eksteenskuil farmers are able to generate sufficient capital and to obtain the required competence of control, one has to assess the risk/return trade-off before concluding that Eksteenskuil farmers should consider more vertical coordination along the raisin value chain.

**Question 5 – Is the risk/return trade-off acceptable?**

The major risk that would be faced by Eksteenskuil raisin producers when they have vertically integrated in order to do the processing of their own raisins is to supply a sufficient volume of high quality raisins to meet the requirements of the fairtrade buyer. Currently members of the EAC produce less than 600 tonnes of raisins of which only about 85% typically qualifies for choice grade. SAD, as their current processor, is actively assisting Eksteenskuil producers to increase the volumes and quality of their raisins. The vertical integration by Eksteenskuil raisin producers will mean that the incentive for SAD to support Eksteenskuil farmers is removed. The vertical integration by Eksteenskuil farmers thus will cause the major source of information and training to withdraw, which will substantially increase the risk faced by Eksteenskuil raisin producers.

The processing of raisins furthermore is associated with high levels of fixed cost. The processing plant needs to operate as much as possible to reduce the average fixed cost in order to obtain
economies of scale. The volume of raisins that is currently produced at Eksteenskuil is insufficient, while the rules of the Fairtrade initiative do not allow Eksteenskuil producers to buy substantial volumes of raisins from non-members of EAC to increase volumes. A processing plant operated by Eksteenskuil farmers thus is unlikely to operate at a sufficient capacity to justify the erection of a processing plant at this stage.

To conclude, the increase in return by vertical integration will not compensate for the increase in risk faced by Eksteenskuil producers at this stage. One may thus conclude that, at this stage, there is no need for Eksteenskuil raisin producers to vertically integrate. Increasing the level of control by moving towards relationship-based alliances with their buyer may reduce some of the uncertainty Eksteenskuil farmers currently face. Assessing the strategic direction of their buyer’s business is necessary to determine the compatibility of the buyer, and hence implementability of changing to relationship-based alliance with the buyer.

CONCLUSIONS AND RECOMMENDATIONS

The aim of this paper was to assess the governance structure that is currently employed by Eksteenskuil raisin producers by comparing it to the alternative governance structure that is employed by other raisin producers in their vicinity, and to determine whether or not there is a need for more vertical coordination in order to obtain a sustainable competitive advantage.

Based on the transaction cost comparison of the respective governance structures, the hybrid mode of governance that is currently employed by Eksteenskuil raisin producers proves to be more efficient than the spot market that is used by other raisin producers in their vicinity. It does reduce some of the major transaction costs associated with raisin production and marketing. There are, however, some concerns that need attention. The results provide no evidence that the bilateral relationship between Eksteenskuil farmers and their buyer reduce the level of uncertainty. If SAD does not withhold important information they need to meet with Eksteenskuil farmers to convince them with the necessary proof. SAD also should guard against delaying payment to Eksteenskuil producers since it creates an impression of opportunistic behaviour on their side. Moreover, SAD may need to reconsider their willingness to negotiate with Eksteenskuil producers for a better price for their produce. Even the perception that SAD behaves opportunistically may negatively impact the stability of the relationship.

The application of the decision-making framework to assess the need for more vertical coordination did not provide sufficient evidence that vertical integration is a viable option at this stage. Although there are some criteria in which vertical integration may benefit Eksteenskuil raisin producers, erecting a packing facility at this stage does not seem implementable, nor will the increase in return be sufficient to compensate for the increase in risk associated with vertical integration. The results from this study suggest that, although there is no need for vertical integration, more vertical coordination through the formation of relationship-based alliances with the buyer may reduce the costliness of coordination errors faced by Eksteenskuil producers. More vertical coordination thus may contribute to them obtaining a sustainable competitive advantage.
Note that the assessment only considered vertically integrating to the very next node within the value chain. Eksteenkuil farmers can also vertically integrate to the secondary processing node of the value chain. Further research is necessary to investigate the potential of vertically integrating to the level of the secondary processor while outsourcing the primary processing activity which does not prove to be viable at this stage.

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Letsoalo and van Averbeke (2005)


