The impact of supply chain governance structures on the inter-firm relationship performance in agribusiness

Dopad řídících struktur nabídkového řetězce na projevy vztahů mezi firmami v agrobyznysu

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Abstract: In this paper, we investigate the relationship between the types of supply chain governance structure and the perceived relationship performance of Ghanaian fresh fruit and vegetable exporters concerning their business with European importers. Using the principal component and regression analyses based on data obtained from 101 interviews with exporters in Ghana, we show that relationship performance is a multi dimensional construct with economic and behavioral relationships as the two main dimensions. The study reveals that whereas the economic relationship performance is influenced by the type of governance structure used, the behavioral relationship performance is not. Thus, the economic dimension of the relationship improves as the firms adopt a more coordinated type of governance structure. We conclude that both the exporters and the importers can improve their economic performance and enhance efficiency in the supply chain if they adopt a more coordinated supply chain governance structure type if there are appropriate mechanisms for equitable distribution of benefits.

Key words: relationship performance, governance structures, fresh fruit and vegetable, Ghana, Europe

Abstrakt: Práce se zabývá zkoumáním vztahů mezi různými typy řídících struktur v nabídkovém řetězci a vnímáním projevů těchto vztahů, pokud jde o ghanské exportéry ovoce a zeleniny ve vztahu k evropským importérům. S využitím analýza základních komponentů a regresní analýzy založené na datech získaných prostřednictvím 101 interview s exportéry v Ghaně jsme ukázali, že projev těchto vztahů je multidimenzionální konstrukce, jejímiž dvěma hlavními dimenzemi jsou vztahy ekonomické a behaviorální. Studie odhalila, že zatímco projev ekonomických vztahů je ovlivněn typem uplatněné řídící struktury, projev behaviorálních vztahů ne. Ekonomická dimenze vztahů se tudíž zlepšuje, jestliže firma přijme lépe koordinovaný typ řídící struktury. Dospěli jsme k závěru, že jak vývozci, tak dovozci mohou zlepšit svou ekonomickou výkonnost a zvýšit efektivnost nabídkového řetězce, jestliže přijmou koordinovanější řídící strukturu tohoto řetězce a jestliže zde jsou vhodné mechanismy zajišťující rovnou distribuci užitku.

Klíčová slova: projevy vztahu, řídící struktura, čerstvé ovoce a zelenina, Ghana, Evropa

INTRODUCTION

Background

Like many other exchanges involving food and agricultural products, different forms of governance structures are used in the fresh fruit and vegetable (FFV) trade between Ghana and Europe. These forms of governance structures include Sport Markets, Long-Term Relationships, Contracts and Vertical Integration. The co-existence of the various forms of governance structures in the food supply chains is fuelled by two main factors: First, the various governance structure types have been shown to vary in relevance according to the type of commodity (Hill, Ingerscent 1982) and second, because the level of transaction cost (TC) differs with the type of governance structure used (Behner, Bitsch 1995; Weleschuk, Kerr 1995; Hobbs 1996; Poole et al. 1998; Boger 2001).

The previous studies on supply chain governance structures have mainly been concerned with establishing the link between transaction cost (TC) and chan-

nel choice (e.g. Frank, Henderson 1992; Weleschuk, Kerr 1995; Mudambi, Mudambi 1995; Hobbs 1996). The transaction cost approach has been developed through institutional economics, organizational theory and contract law by Williamson (1985). This approach which became very popular in the agri-food chains in the 1990s places the basic unit of economic analysis on transactions. According to the TC theory, the firms' decision to select a supply chain governance structure is made on the basis of comparative institutional efficiency, and ascertains which of the alternatives constitute the TC minimizing condition (Kim 1998).

The over reliance of the TC theoretical lens as a basis for the decision on the choice of supply chain governance structure implies that the production cost and, by extension, the overall relationship performance of the firms has been given less attention. Whipple et al. (1999) argued that a particular governance structure type may be very efficient in reducing transaction costs in an exchange but may not be effective to provide services that satisfy customers. This implies that if the TC approach is used as a basis to select governance structure, one may end up selecting a governance structure type which although it might minimize cost, may not be effective in the delivery and distribution of the commodities involved and consequently it may impact negatively on the overall performance of the firm. Moreover, Klein (1986) argued that the purpose of a firm's existence is not only to minimize transaction costs but also production cost for pursuing profit and enhancing the firms' performance outcomes. By extending Klein's argument, a firm's performance outcome which integrates various aspects of economic and non-economic parameters may be considered as an effective way of assessing the efficiency of the supply chain governance structure.

The purpose of this paper is to explore the move towards a greater vertical coordination by analyzing the impact of supply chain governance structure types used by Ghanaian exporters of FFV on their relationship performance with their importers in Europe.

The remaining parts of the paper are organized as follows: First, we provide a brief overview about the FFV trade between Ghana and Europe and discuss the previous studies on the concepts of the inter-firm relationship performance and supply chain governance structures. Following, we compare the relationship performance of the firms across the various supply chain governance structures and determine the effects of the governance structure types on performance. Finally, managerial implications for the study and the direction for future research are provided.

Fresh fruits and vegetables trade between Ghana and the EU member countries

Ghana is one of the major countries that supply fresh fruits and vegetables like pineapples, papaya, banana, mangoes, okra, chilli, eggplant, and yam into the European market (Gyau, Spiller 2007). The FFV export from Ghana to Europe has experienced a considerable boom over the past ten years (Danielou, Ravry 2005). This is due to the existence of relatively developed flight connections and cost advantage of Ghanaian producers compared to their main competitors such as Costa Rica and Ivory Coast. From the total value of 1,585 thousand US dollars in 1986, the value of fresh fruits exports from Ghana increased to 26,838 thousand US dollars in 1998 (Takane 2004). About 40% of Ghana's FFV exports are pineapples. There are about 147 firms that export fresh fruits and vegetables into various destinations in Europe (Gyau, Spiller 2007). These firms have different sizes and organizational structures including smallholder farmers, non-resident commercial farmers and large-scale producer-exporters (Obeng 1994; Takane 2004). The products are sold to retailers, wholesalers and the food service industry in Europe. Most of the export firms rely on own production as the main source of supply but sometimes supplement their output from out growers and other commercial producers as a way to ensure a steady and constant supply throughout the year. The European importers have various forms of relationships with the exporters including Long-Term Relationships, Marketing Contracts, Vertical Integration and Spot Market.

LITERATURE REVIEW

Governance structures in the food supply chains

Various names such as vertical coordination, channel types and distribution styles have been used in the extant literature to refer to supply governance structures. Whatever name is used, it refers to a set of rules that governs transactions between parties in an exchange. Whereas some rules in the transactions are defined by the law, others are defined by social conventions (Ferguson, 2004). Different governance structures are therefore characterized in extent, complexity and duration and may determine the level of vertical coordination defined by Mighell and Jones (1963, pp. 23) as "all the ways of harmonizing the successive vertical stages of production and marketing…."

A number of studies have been conducted on the supply chain governance structure types in the agribus-

iness literature, and these studies have distinguished between Spot Markets, Long-Term Relationships, Marketing Contract, Production Contracts, Contracts Farming and Vertical Integration in the supply chain continuum (e.g. Ferguson 2004; Kim 1998; Mighell, Jones1963; Barkema, Drabenstott1995; Hobbs 1996; Peterson, Wysocki 1997; Spiller et al. 2005). Where Spot Market (SM) is used, goods are exchanged between multiple buyers and sellers at the current time period with price as the main determinant of the final transaction (Hobbs 1996). The other end of the supply chain continuum is the Vertical Integration (VI) which refers to a situation where products move between various stages of production, processing and distribution as a result of within the firm managerial orders rather than at the direction of prices.

In between the two polar forms, there are the intermediate types of governance structures like the Long-Term Relationships (L-TR), Marketing Contracts (MC), Production Contracts (PC) and Contract Farming (CF) (Spiller et al. 2005). In the L-TR, the exchange partners are independent of each other and are bonded by the long-term non-contractual relationships.

The MC represents an agreement by a buyer to provide a market for the seller's output. In this arrangement, the seller transfers some risks and decision over when and how the product is to be sold to the buyer. The PC exists where the buyer supplies and manages all the inputs on the farm and the farmer usually becomes just a supplier of the land and labour (Singh, 2000). Next to the Production Contract in the supply chain continuum, there is the CF which refers to the system of production and supply of products by farmers to the buyers under forward contracts. The essence of such arrangements is the commitment to provide a commodity of a type, at a specify time, price and in specified quantity to a known buyer (Singh 2000). In this case, the CF can be looked at as a half way between the independent farm production and the corporate farming.

Relationship performance

Relationship performance refers to the success of inter-firm relationships, and is defined as the extent by which a relationship is perceived to be productive and rewarding (LaBahn, Harich 1997; Kumar et al. 1992). There seems to be no consensus about what constitutes a firm's relationship performance amongst researchers and as a result, existing studies used different approaches to operationalize the construct (O'Toole, Donaldson 2002). Jap and Ganesan (2000) for instance, operationalized relationship performance as a two dimensional construct and distinguished between the direct and indirect relationship performance. O'Toole and Donaldson (2000, 2002) operationalized relationship performance into the financial performance and non- financial performance.

The financial performance consists of short-term results in the inter-firm relationships and addresses the issues and goals which the firms explicitly aim at in their relationships (Beugelsdijk et al. 2006). These results are relatively concrete and may include profit, sales and cost. The non-financial relationship performance has been conceptualized to include the behavioural dimensions of relationships like satisfaction, commitment, communication and flexibility in the relationships (O'Toole, Donaldson 2000; 2002).

Satisfaction is most frequently defined as a positive affective state resulting from the appraisal of all aspects of a firm's working relationship with another firm (Frazier et al. 1989). With insights from the disconfirmation theory, satisfaction can be measured by the comparison of a supplier's performance with the buyer's expectation levels. Anderson and Narus (1990) indicated that satisfaction encourages long-term relationships. Ganesan (1994) also mentioned that a high level of satisfaction increases the relationship quality through the the increased motivation among the channel members, high cooperation, fewer terminations and the reduced litigation. Commitment is often defined as the enduring desire to maintain a valued relationship (Moorman et al. 1992). Two different components of commitment are often discussed in the literature. These are affective commitment and calculative commitment. Affective commitment refers to the psychological attachment of one exchange partner to the other and it is based on the feelings of identification, loyalty and affiliation (Gunlach et al. 1995). Calculative commitment results from a rationalistic decision process in which a partner compares the costs and benefits of maintaining or discontinuing a relationship (Geyskens et al. 1999). According to Hoekstra et al. (2000), whereas affective commitment refers to a positive motivation for behavioural loyalty, calculative commitment can be regarded as a negative motivation.

Communication is defined as the formal and informal sharing of the meaningful and timely information between firms (Anderson, Narus 1987). Communication enables the exchange of information which may reduce certain types of risk perceived by either party to a transaction (McQuiston 1989).

Relationship flexibility is described as the willingness to move beyond the terms and conditions specified in the contractual agreement as the circumstances

require (Heide, John 1992). Relationship flexibility enhances the performance in bilateral relationships (Dahlstrom et al. 1996).

Hypotheses

Various forms of governance structures are characterized by different forms of organizations and transaction cost of exchange (Weleschuk, Kerr 1995; Hobbs 1996). Since transaction cost and forms of activities in exchange relationships such as communication, and cooperation affect the relationship in different ways, we expect the various forms of governance structures to differe in the terms of performance in relationships. We therefore hypothesize that:

– **Hypothesis 1**: Different governance types are associated with significantly different relationship performance levels**.**

It is argued that a more coordinated supply chain governance structure types may be more effective in enhancing the efficiency and effectiveness in the supply chain. Whipple et al. (1999) for instance points out that a better coordination in the supply chain can lead to a reduction in the system cost such as cost associated with the inventory hold ups which reduces efficiency and the firm's performance. Based on this, it can be expected that the use of the Spot Market type of exchange may be less effective compared to the other more coordinated types of governance structures. We therefore hypothesize that:

– **Hypothesis 2**: Change from the use of Spot Market to other types of governance structure on the supply chain continuum improves relationship performance**.**

MATERIAL AND METHODS

Survey design

In order to test the hypotheses stated above, data were collected from the FFV export firms in Ghana. The data base of the firms was obtained from the Ghana Fresh Produce Industry Directory 2006 compiled by the Ghana Export Promotion Council. About 147 FFV export firms were identified.

A questionnaire was designed based on an extensive review of the literature on relationship performance and supply chain governance structures. The questionnaire was pre-tested with four supply chain and alliance academics. In the second stage, the questionnaire was pre-tested with five managers of the export firms in Ghana. The participants were asked to comment on the format of the questionnaire including the aspects like wording, length, and the order of the questions. After each stage, the feedback obtained was incorporated to improve the questionnaire. Two experienced enumerators were recruited and trained to collect data. Personal interviews in which the managers were visited were deemed appropriate as a means to increase the response rate. In average, each interview lasted about 50 minutes. The relationship studied was one between the exporters and their main European buyers. European buyers in this context were considered as the firms that the exporters consider as the most important in the terms of the quantity of goods purchased as well as the reliability of the buyer . The exporters were asked to indicate among the alternatives, the one that describes best their relationships with their European buyers. Of 147 export firms identified in the Ghana Fresh Produce Industry Directory 2006, 101 successful interviews representing about 69% response rate was obtained.

Measurements

The dependent variable is the relationship performance and the independent variables are the supply chain governance structure types.

We operationalized relationship performance as a higher order construct made up of a combination of several factors. The items used to operationalize the performance dimensions were composite measures rather than any particular facet of performance. Following the existing literature, the relationship performance was operationalised with items including cost, perceived profits, satisfaction, commitment, flexibility and information flow. The items were adapted from the marketing and network literature including Anderson and Narus (1990), Moorman et al. (1992), Morgan and Hunt (1994), Ganesan (1994), O'Toole and Donaldson (2000, 2002) and Beugelsdijk et al. (2006). In all, seven composite statements were included for the study. All the relationship performance items were measured on a five-point likert scale system (1 = *strongly disagree* and 5 = *strongly agree*) except two items which were measured on a 0–100 line scale.

The independent variables were adapted from the supply chain governance structure continuum from Spiller et al. (2005) with a little modification to reflect the FFV industry characteristics. The modification led to a combination of the Production Contracts and the Contract Farming as a single category because the two were not seen as distinct forms of governance

structures in FFV trade. Five governance structure types namely Spot Market, Long-Term Relationships, Marketing Contracts, Production Contracts/Contract Farming and Vertical Integration were used for the study.

The *SPSS* statistical program version 15.0 was used for all statistical computations. The exploratory factor analysis using the principal component analysis with a varimax rotation was applied to the relationship performance scales in order to determine which factors underly the relationship performance of the FFV exporters. In this analysis, all factors with Eigen values above one were extracted and only the factors with loadings above 0.5 were retained. To test for the appropriateness of the factor analysis for the scale, the Kaiser-Meyer-Olkin Measure of

Table 1. Factor analysis for relationship performance

Factors and Items **Relationship Performance KMO = 0.697**	Factor loading
Behavioural relationship performance **Explained variance = 32.01%, Cronbach's Alpha = 0.758**	
The business relationship with the European buyers are so good that I do not think of a change	0.806
The buyers deal with me as expected	0.802
Considering all my experiences, I am generally very satisfied with the European buyers	0.798
The European buyers deal favorably with me*	
Economic relationship performance **Explained variance = 22.74%, Cronbach's Alpha = 0.641**	
My relationships with European buyers have been a financial success	0.826
The European buyers have enabled me to produce at lower costs	0.821
The buyers are often ready to do things outside our contractual arrangements*	

*Item suppressed in exploratory factor analysis for less than 0.5 factor loading

Table 2. Analysis of variance for relationship performance across the governance structure types in the fresh fruits and vegetable supply chain

Relationship performance	Type of governance structure					*F*-values
	SM	LTR	MC	PC	VI	
	μ (σ)					
	N = 39	*N* = 36	*N* = 17	*N* = 7	*N* = 2	
Economic relationship Performance	–0.34 (0.93)	0.13 (1.07)	0.00 (0.73)	0.67 (0.45)	2.08 (0.87)	4.93***
Reduction in cost	37.44 (20.29)	45.83 (29.39)	47.65 (21.00)	62.14 (18.23)	62.50 (31.82)	2.15*
Overall financial success	46.79 (20.95)	59.86 (21.66)	53.53 (9.48)	64.29 (6.08)	100.00 (0.00)	5.64***
Behavioural relationship Performance	–0.16 (1.10)	0.12 (0.86)	0.06 (1.18)	0.21 (0.79)	–0.24 (0.73)	0.75
Overall satisfaction	3.00 (1.03)	3.28 (0.82)	3.06 (1.20)	3.29 (1.50)	3.00 (2.83)	0.39
Expectation	2.64 (0.96)	2.94 (0.79)	2.94 (1.09)	3.43 (0.98)	2.50 (0.71)	1.39
Commitment	2.51 (1.10)	2.72 (0.97)	2.65 (0.93)	2.57 (0.98)	2.00 (0.00)	0.39

μ = the group mean, (σ) = standard deviation of the group, *P* = the significance level of the measurement,
***$P < 0.01$, *$P < 0.10$

Sampling Adequacy (KMO-MSA) was conducted for the relationship performance measurements and all fell within the accepted region of greater than 0.5 (Nunnally 1978). In addition, Cronbach's Alpha was used to measure the internal consistencies of the relationship performance measurement scale. The results of the Cronbach's Alpha and the factor analysis are shown in Table 1.

The one-way Analysis of Variance (ANOVA) was used to compare the relationship performance of the FFV across the various supply chain governance structures.

The ANOVA was used to analyze the impact of the various dimensions of relationship performance factors independently. This approach has been used in the marketing and network literature (e.g. Frazier 1983; Noordewier et al. 1990) as cited in Kumar et al. (1992). The results of the ANOVA are reported in the Table 2.

To test the second hypothesis which establishes the effects of using a more coordinated governance structure type on relationship performance instead of Spot Market, we dummy coded the supply chain governance structure types using Spot Market as the reference category. This was done as a result of the fact that the categorical predictor nature of the supply chain governance structures cannot be entered directly into the regression model and be meaningfully interpreted. This implies that some other method of dealing with the governance structure types as a predictor variable had to be developed and the dummy coding has been considered as one of the elegant ways to deal with the categorical predictor variables in regression analysis. In general, a categorical variable with K categories will be transformed into k-1 variables when dummy coding is used (Stockburger 2001), and the regression coefficient is interpreted with the reference to the category designated as reference category. The regression coefficients represent deviations from the mean of the comparison group (Pedhazur 1997). Thus, how much the predicted variable increases (when the regression co-efficient is positive) or decreases (when the regression co-efficient is negative) with reference to the reference category which is Spot Market in our case. We have

Table 3. Supply chain governance structure types and economic relationship performance

Governance structure type	Co-efficient(Beta)	Standard error	*T* statistic
Constant	–0.35	0.15	–2.32**
Long-term relationships	0.47	0.22	2.20**
Marketing contracts	0.35	0.27	1.28
Production contracts	1.02	0.38	2.67***
Vertical integration	2.43	0.68	3.60***

***$P < 0.01$, **$P < 0.05$

Reference category: Spot Market

Independent variables: Supply chain governance structure type

Dependent variable: Economic relationship performance

Table 4. Supply chain governance structure types and behavioural relationship performance

Governance structure type	Co-efficient (Beta)	Standard error	*T* statistic
Constant	–0.16	0.16	–1.00
Long-term relationships	0.28	0.23	1.19
Marketing contracts	0.22	0.29	0.76
Production contracts	0.37	0.42	0.89
Vertical integration	–0.08	0.73	–0.10

Reference category: Spot Market

Independent variables: Supply chain governance structure type

Dependent variable: Behavioural relationship performance

four classes of dummy variables which were coded with the Spot Market as the reference category. Stockburger (2001) mentions that the co-efficient of variation in dummy coding is the redundant information and hence cannot be interpreted in the same way as the usual R-squared in the linear regression. The results of the regression models are indicated in Table 3 and Table 4.

RESULTS AND DISCUSSIONS

Description of the sample

The statistical analysis in Table 2 shows that of the 101 exporters interviewed, 39 had Spot Market arrangements with their main buyers, 36 had Long-Term Relationships, 17 had Marketing Contracts, 7 defined their relationships as Production Contract (including Contract Farming) and 2 exporters indicated that they are vertically integrated with another firm in Europe. The firms vary in size ranging from small to large scale. The average number of employees is 88. Using the number of employees as a basis for classification, about 37% were considered as small scale firms (employ 1–50 people), 58% were considered as medium scale (51–250 employees) and the remaining 5% were considered as large scale (more than 250 employees).

Results of factor and regression analyses

Two factors which together explained about 55% of the variance were extracted as shown in Table 1. Three items were loaded on the first factor. The first factor was referred to as *behavioural relationship performance* because the items that were loaded contain statements which consist of behavioural aspects of relationships including satisfaction and commitment. This factor has an Alpha value of 0.758 with an Explained Variance of 32%. The second factor, with an explained variance of about 23%, contains two items and has an alpha value of 0.641. This item was labelled as *economic relationship performance*. The remaining two statements did not make an adequate contribution to any of the two factors because their factor loadings were less than 0.5.

There are differences in the overall economic relationship performance of the FFV exporters. Further, the two items which measured the economic performance, namely the "cost reduction" item and the "overall financial success" items, are also found to differ significantly with the type of governance structure.

Further, we observe from Table 3 that the economic performance of all the other governance structure types (except Marketing Contracts) improves as one uses a more coordinated governance structure type from the Spot Market arrangement.

The result implies that the exporters' economic performance which may be attributed to their relationships significantly varies according to the type of the governance structure used. For instance the firms that defined their relationships as Vertical Integration have the highest average economic performance score, followed by Production Contract, Long-Term Relationship, Marketing Contract and Spot Market respectively.

The higher level of economic performance exhibited by the more coordinated governance structure types may partly be attributed to the reduction in transaction costs of the exchange such as costs involved in drafting contracts, information costs, monitoring and contract enforcement costs which are likely to be the highest in the less coordinated channel types (Williamson 1985; Hobbs 1996). This is expected because generally buyers who have Spot Market arrangements with their suppliers are likely to act opportunistically in order to realize a short-term profit from the transaction. Against this background, the parties may generally incur some costs as a means to safeguard themselves against the possible opportunistic attitudes and hence transaction costs may increase and the overall economic performance may be reduced.

Part of the cost reduction attributed to higher coordination and the consequent improvement in economic performance may also be attributed to the effects of joint and coordinated management that may lead to the reduction in the costs of the inventory hold ups and the avoidance of duplication of the activities between the importers and exporters.

Moreover, the use of a more coordinated governance structure type such as vertical integration may enable the exchange parties to embark on joint research and development projects and to enjoy economies of scale that might not be possible if the exchange was guided by Spot Market arrangements. In addition, reduction in production costs can be realized through economies of scale which are facilitated by the potential for internal specialization and division of labour (Klein et al. 1990). Scherer (1980) suggested that in general, a large firm achieves economies of scale in finding, holding and utilizing management skills that can lead to efficiency.

Marketing Contracts do not significantly differ from Spot Market in terms of the economic relationship performance. The most likely explanation is that

since the importers do not usually invest directly in the marketing contract arrangements, they are less likely to get committed to the relationship and hence the need to take some contingency measures which may increase transaction costs and lower performance.

Table 1 shows that there are no significant differences in the overall behavioural relationship performance of the firms or any of its components. Further, it can be observed from Table 4 that the other forms of channel arrangements do not significantly differ from the Spot Market in the behavioural relationship performance. This may therefore mean that, probably, it is not the type of governance structure that really matters for people to build strong behavioural ties such as trust and satisfaction which influence relationships. This confirms the observation by O'Toole and Donaldson (2000) that in certain cases, Spot Market may even have considerable relational elements and that this relationship may even be long-term since the arrangement may suit the parties involved in the exchange.

CONCLUSION AND MANAGERIAL IMPLICATIONS

In this study, we compared relationship performance of the Ghanaian FFV export firms across the type of supply chain governance structure used in their business relationships with European importers. We revealed that the FFV exporters' relationship performance is a two dimensional construct made up of the behavioural relationship performance and the economic relationship performance. Whereas differences were observed across the various governance structure types in the terms of the economic performance, the behavioural performance showed no significant differences. Moreover, the study revealed that in all cases, economic relationship performance improves as one moves from the transaction based marketing (Spot Market) to the more coordinated type except Marketing Contracts.

The implication is that if Ghanaian exporters and European importers are able to build more coordinated business relationships with one another, they may be able to enhance efficiency in the supply chain through some of the benefits associated with a closer coordination such as a more efficient replenishment, an assortment and a quality improvement that may result from the joint investment in research and development, and the improvement in communication which enhances a more consumer driven product development.

In addition, more coordination may result in reduction in the costs of the inventory hold ups and improve efficiency of the firms. Whipple et al. (1999) for instance estimate that the global grocery retailers can reduce the inventory holding by 41% to provide savings of 30 billion dollars while the dry grocery lead times can be reduced from 104 days of supply to 61 days through efficient coordination in the supply chain.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Whilst this study provides an important insight into the study of supply chain governance structures in the FFV supply chains, there are some limitations that have to be taken into consideration when interpreting the results. One of them is the limited number of items used in operationalizing the relationship performance construct. Since few composite variables were used, our findings need to be interpreted with caution. The future research should therefore consider operationalizing both the economic and behavioural relationship performance in more detail by including the items on profitability, sales, dependence (O'Toole, Donaldson 2000), relationship equality (Jarrat, O'Neil 2002) and contribution towards innovations, new customers and contacts (Beugelsdijk et al. 2006). It is expected that this would enhance a broader understanding of the variables that influence the firms' performance outcomes and could be used as a basis for developing a more comprehensive and goal oriented performance scorecard which may serve as a guide for the selection of an appropriate governance structure type.

Appendix

Reduction in cost: The European buyers have enabled me to produce at lower costs

Overall financial success: My relationship with the European buyers has been a financial success

Overall satisfaction: Considering all my experiences, I am generally very satisfied with the European buyers

Expectation: The buyers deal with me as expected

Commitment: The business relationships with the European buyers are so good that I do not think of a change

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