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Governance of market-oriented fresh food value chains: export chains from New Zealand

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RESEARCH ARTICLE

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Abstract

The competition in international food markets is increasingly moving towards products with higher levels of added value and higher degrees of differentiation, requiring companies to become more market-oriented. Market orientation is 'the extent to which an actor in the marketplace uses knowledge about the market, especially about customers, as a basis for decision-making on what to produce, how to produce it, and how to market it'. Market orientation comprises three constructs: market intelligence generation, dissemination and responsiveness. Value chain governance can facilitate market orientation requirements. Value chain governance includes network governance, contracting and informal relationships. Knowledge about how governance can facilitate a value chain's market orientation is limited. Therefore, the aim of this study is to explore how the governance of a global food value chain can facilitate the value chain's market orientation. The study applies a multiple case study design. Four in-depth case studies were conducted on global food value chains from New Zealand to Western Europe dealing with the products apples, kiwis, venison and lamb. Interviews were conducted with actors from these four value chains in the Netherlands as well as in New Zealand. In each value chain actors with similar functions were interviewed in order to make the results comparable. Analysis of the case studies shows that network governance (i.e. leadership, shared governance and facilitation), contractual agreements (i.e. type and content: price, volume, quality) and informal relationships (i.e. trust and commitment) can contribute to the market orientation of a value chain. Leaderships and shared governance, in combination with good informal relationships in the chain, as well as contractual incentives, are main contributors to market orientation in global fresh food value chains. The paper adds to the still very scarce literature on governance of value chains and market orientation of value chains.

Keywords: market orientation, value chain governance, fresh global food chains
JEL code: Q13

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1. Introduction

The competition in international food markets is increasingly moving toward products with higher levels of added value and higher degrees of differentiation, requiring companies to become more market-oriented (Grunert *et al.*, 1996). A market-oriented company aims to continuously deliver superior value to its customers (Han *et al.,* 1998) 'by identifying and satisfying customer needs more effectively than its competitors' (Kirca *et al.,* 2005). In this way, the company tries to create competitive advantage (Grunert *et al.*, 2005).

Market requirements, i.e. requirements for the final customer, should be coordinated in the chain by a suitable governance structure (Elg, 2008; Grunert *et al.*, 2005; Trienekens and Wognum, 2013). Governance mechanisms may include formal arrangements (contracts: Wever, 2012) and informal arrangements such as trust and reputation (Lu, 2012; Trienekens *et al*., 2012). The study of these mechanisms has so far focused primarily on the dyad. In studying value chains as entities we need to extend this view to mechanisms that cover the chain end-to-end.

The objective of the paper is to explore the relationships between market orientation and governance of international fresh food chains, based on an in-depth analysis of four fresh food export chains from New Zealand to Europe. The paper adds to the still very scarce literature on market orientation of value chains and (related) value chain governance.

2. Market orientation and governance

2.1 Market orientation

Two main definitions of market orientation can be distinguished: namely, one from a behavioural perspective and one from a cultural perspective (Homburg and Pflesser, 2000; Kirca *et al.*, 2005; Vieira, 2010). Kohli and Jaworski (1990) defined market orientation in terms of organisational behaviour and stated that market orientation comprises three types of activities, namely market intelligence generation, dissemination and responsiveness. Narver and Slater (1990) defined market orientation in terms of organisational culture and stated that market orientation comprises customer orientation, competitor orientation and inter-functional coordination. These are organisational norms and values which encourage behaviour that is in line with market orientation (Kirca *et al.*, 2005).

Recently, there has been an increasing interest in market orientation from a value chain perspective (Elg, 2008; Grunert *et al.*, 2005, 2010). This interest is relevant, since the degree of market orientation of one company in the value chain can be influenced by the degree of market orientation of other actors in the value chain (Grunert *et al.*, 2005). Additionally, in the global business environment, competition is transiting from company level to value chain level (Green Jr *et al.*, 2006; Jain and Benyoucef, 2008). Therefore, in order to offer superior value to the market, companies need to collaborate with other value chain actors and develop an inter-firm strategy for market-orientation (Elg, 2008).

Grunert *et al.* (2005) used the definition of Kohli and Jaworski (1990) to define market orientation from a value chain perspective as 'chain members' generation of intelligence pertaining to current and future end-user needs, dissemination of this intelligence across chain members, and chain wide responsiveness to it'. In this definition, intelligence generation refers to all activities conducted by value chain members aimed at gathering information on end-users, typically consumers, customers and competitors (Grunert *et al.*, 2005). This gathered information is also called market information. Dissemination or communication of intelligence refers to all exchanges of information on consumers, customers and competitors between value chain members (Grunert *et al.*, 2005). Responsiveness includes the actions of value chain members in response to the gathered market information to create superior value for consumers and customers (Grunert *et al.*, 2005). Effective communication or dissemination is a prerequisite for responsiveness in the chain,

since responsiveness is only possible if market information is effectively shared in the value chain (Kähkönen and Tenkanen, 2010).

2.2 Value chain governance

Value chain governance may facilitate market orientation (Elg, 2008; Grunert *et al.*, 2005). However, knowledge about this subject is limited (Elg, 2008; Karami *et al.*, 2015). So far most of the literature on the governance of inter-business relationships has focused on bilateral buyer-supplier relationships (Menard, 2004; Wever, 2012; Williamson, 1991).

One stream in the value chain literature that goes beyond the dyad is the global value chain approach, focusing on the governance of end-to-end value chains (Dolan and Humphrey, 2004; Gereffi *et al.*, 2005; Gibbon *et al.,* 2008; Kaplinsky, 2000). Gereffi *et al.* (2005) defined the complexity of information and knowledge transfer required to sustain a particular transaction as explanatory factors for governance choices in global value chains, thereby underlining the important role of lead parties and power asymmetry in these chains. If we consider the current practice, power normally lies with large organisations downstream of the value chain, such as retail or marketing and distribution organisations, or with large manufacturing firms. Suppliers, such as farmers, rarely have a powerful position in value chains (Ponte and Sturgeon, 2014). Lead firms are the main decision takers as regards requirements on quality, quantity and timing of delivery and pricing. Power can result from different sources, distinguishing between sources of coercive and non-coercive power (Hunt and Nevin, 1974; Leonidou *et al.,* 2008). The main difference between the two is that for sources of non-coercive power, individuals willingly yield power to another individual (non-aggressive), while for coercive power there are potential punishments which makes individuals yield power to another individual (aggressive) (Hunt and Nevin, 1974; Leonidou *et al.*, 2008). However, the literature on the governance of end-to-end value chains is scarce. Therefore, and as we consider value chains as netchains (Lazzarini, 2001), including horizontal and vertical relationships covering the chain end-to-end, we include network governance in our theoretical approach.

Network governance can be defined as 'the set of mechanisms that supports and sustains cooperation among participating organisations to enhance the likelihood of achieving network-level goals' (Alvarez *et al.,* 2010). Networks focus on improving collaboration between organisations in the network, which can lead to better alignment of, among other things, supply and demand in the value chain (Barratt, 2004). Therefore, it is likely that network governance can facilitate market orientation of a value chain. Provan and Kenis (2008) explored different forms of network governance and propose that these can be categorised along two dimensions. First, network governance may or may not be brokered. At one extreme, in case of highly brokered network governance, there are few direct organisation-to-organisation interactions. In this case a single organisation is responsible for the governance of the network and thereby takes a leadership position (Provan and Kenis, 2008). At the other extreme, within lowly brokered network governance, the network can be governed by all the organisations within the network. In this case, every organisation interacts with all other organisations in order to govern the network (Provan and Kenis, 2008). The second dimension along which network governance forms can be categorised is whether the network is externally governed or participant governed. In the case of externally governed networks, an organisation that is not involved in the network activities is responsible for the governance of the network. Within the dimension of participant-governed networks, the network might be governed by a single (lead) organisation or by all organisations that comprise the network (shared governance) (Provan and Kenis, 2008).

The global value chain literature underlines the importance of lead parties, information exchange and supplier capabilities in the explanation of value chain governance structures. In the network literature; lead parties, shared governance (and information exchange) and network facilitation are key elements to explain network governance. For our current research we select three network governance constructs, namely leadership, shared governance and facilitation. Leadership reflects one actor in the value chain, being the leader or 'channel captain'. There is a power asymmetry as the actor taking the leadership role has more power than

the other chain actors. The leader is responsible for coordinating major network-level activities and key decisions (Gereffi *et al.*, 2005; Provan and Kenis, 2008). Shared governance reflects actors being responsible for governing (part of) the network together (Provan and Kenis, 2008) and communication and information exchange between these actors (Gereffi *et al.*, 2005). In this paper, facilitation reflects the provision of actors in the value chain with all kinds of support, such as access to particular information, assistance or provision of infrastructure (Leonidou *et al.*, 2008). The need for facilitation also reflects the capabilities of the chain actors (Gereffi *et al.*, 2005).

■ *Contracting*

Different types of contracts can be distinguished, such as spot-market contracts, verbal agreements, formal contracts, equity-based contracts and vertical integration (Raynaud *et al.*, 2005; Wever *et al.*, 2010). Transaction Cost Economics (Williamson, 1991) has often been applied to study bilateral (i.e. buyer-supplier) governance mechanisms (Grunert *et al.*, 2011; Ménard, 2004; Raynaud *et al.*, 2009). In spot markets, coordination takes place via price and competition (Martinez and Zering, 2004; Williamson, 1991). At the other end of the continuum, hierarchies reflect vertical integration of two companies, in which there is coordination via administrative control with associated monitoring rights (Raynaud *et al.*, 2005; Wever *et al.*, 2010; Williamson, 1991). Hybrids, such as partnerships and alliances, are in between these two extremes (Ménard, 2004). The degree of coordination or control increases from spot markets to hierarchies (Trienekens and Wognum, 2013). Market orientation requires intelligence generation, intelligence dissemination and responsiveness of the actors in the value chain (Grunert *et al.*, 2005). Therefore, certain contract attributes may be more suitable for facilitating market orientation than others, for example contracts that enable firms to flexibly respond to market requirement, i.e. contracts that can be responsive in price, quality and/or delivery requirements. Specific investments, for example, in company shares, can also be explanatory major reason for the choice of governance structures (Williamson, 1991; Wever *et al.*, 2012); in many cases these often lead to more integrated structures. In addition, behavioural and demand/supply uncertainty are transaction attributes impacting on the governance choice (Williamson, 1991; Wever *et al.*, 2012). Behavioural uncertainty (e.g. opportunistic behaviour of actors) can be decreased through stricter coordination of transactions, i.e. through more hybrid-type or hierarchical types of bilateral agreements (i.e. formal written contracts, equity-based contracts, vertical integration) (Wever, 2012). In contrast, demand or supply uncertainty would require more flexibility and less strict contracts.

■ *Informal coordination mechanisms*

Besides formal relationships (e.g. through contracts) there are also informal relationships between actors in a value chain (Alvarez *et al.*, 2010; Lu, 2012; Trienekens *et al.*, 2012). Trust and commitment can be identified as relevant aspects influencing the degree of market orientation. Informal relationships, including trust and commitment, can be beneficial for the exchange of information and thereby facilitate a value chain's market orientation (Grunert *et al.*, 2010; Jeong and Hong, 2007).

Trust can be defined as 'the degree to which a firm believes that its trading partner is honest and/or benevolent' (Bigne and Blesa, 2003). Grunert *et al.* (2010) studied the market orientation of decision makers in two cross-border value chains, namely Norwegian salmon exported to Japan and Danish pork exported to Japan. The research showed that trust creates openness and thereby enhances information exchange between actors in the value chain, contributing to intelligence communication (Grunert *et al.*, 2010). Micheels and Gow (2011) studied the relationship between market orientation and performance by conducting surveys of beef producers in the United States. It was found that trust between actors in the value chain directly contributed to market orientation and indirectly contributed to the performance of a company. More specifically, trust contributed to the exchange of market information (Micheels and Gow, 2011).

Commitment can be defined as 'an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it; that is, the committed party believes the

relationship endures indefinitely' (Morgan and Hunt, 1994). In addition to trust, commitment can be an important antecedent of the degree of market orientation of a value chain, since commitment can stimulate effective market information exchange in a value chain (Grunert *et al.*, 2005; Micheels and Gow, 2011). The reason for this is that commitment creates openness in the value chain (Grunert *et al.*, 2010). Kähkönen and Tenkanen (2010) studied the impact of power on information sharing in the Finnish food industry. It was concluded that a lack of commitment or one-sided commitment decreases the willingness to share information in the value chain (Kähkönen and Tenkanen, 2010). Kwon and Suh (2005) studied the relationships between trust, commitment and various aspects of value chain management. It was observed that commitment is needed between value chain actors in order to achieve common goals (Kwon and Suh, 2005); in this case, a particular degree of market orientation. Trust and commitment are interrelated, since trust contributes to commitment (Karami *et al.*, 2015; Kwon and Suh, 2005; Micheels and Gow, 2011; Ryu *et al.,* 2009).

3. Theoretical framework

In our research we measured market orientation through three constructs based on (Grunert *et al.*, 2005; Kohli and Jaworski, 1990): market intelligence, market responsiveness and market communication.

Three basic elements of value chain governance are distinguished: (bilateral) contracts throughout the chain, informal coordination mechanisms and network governance. Based on Wever (2012) we define three components of contracts: price, volume and quality. Furthermore, we include trust and commitment as informal coordination mechanisms (Bigne and Blesa, 2003; Karami *et al.*, 2015; Kwon and Su, 2005; Micheels and Gow, 2011). Network governance includes leadership, shared governance and facilitation. This brought us to the following conceptual model of our research.

Figure 1 shows the main concepts and the main relationships to be expected based on theoretical considerations. We expect that network governance may impact on the collection of market information (market intelligence), market communication (upstream of the value chain) and market responsiveness (throughout the chain). We expect that network governance (all three components) may have a (positive) effect on trust between the value chain actors and commitment of these actors. Trust and commitment, for their part, will have a positive effect on the communication of market information throughout the chain. Facilitation (one of the elements of network governance) may impact on the type of arrangements and support arrangements on price, quality and volume (e.g. storage of products). Contractual arrangements will affect the responsiveness to the market of actors throughout the chain.

4. Methodology

The research is exploratory, as very little research has been done so far on the relationship between market orientation and value chain governance. We analyse four export chains from New Zealand to Western Europe on market orientation, value chain governance and the relationship between these concepts. Three selection criteria were established for the choice of case studies. First, the value chain needs to be global, i.e. the production takes place in a different country from where the produced products are being sold. In this way the research addresses the increasing globalization of food value chains (Ren *et al.*, 2014). Second, the selected value chains should probably be governed in different ways, in order to create a meaningful comparison between the different value chains and to more easily observe contrasting patterns in the data (Eisenhardt and Graebner, 2007). Third, for the same reason as above, the selected value chains should probably have different degrees of international market penetration. We investigated two fruit chains and two meat chains, which all have primary production stages in New Zealand and marketing and distribution stages in North Western Europe. For confidentiality reasons the chains are named A, B (two fruit chains) and C, D (two meat chains).

Chain A produces and exports kiwi. It consists of around 2,500 producers, 50 post-harvest operators (pack houses and cool store facilities), the global marketing and distribution organisation, and distribution companies

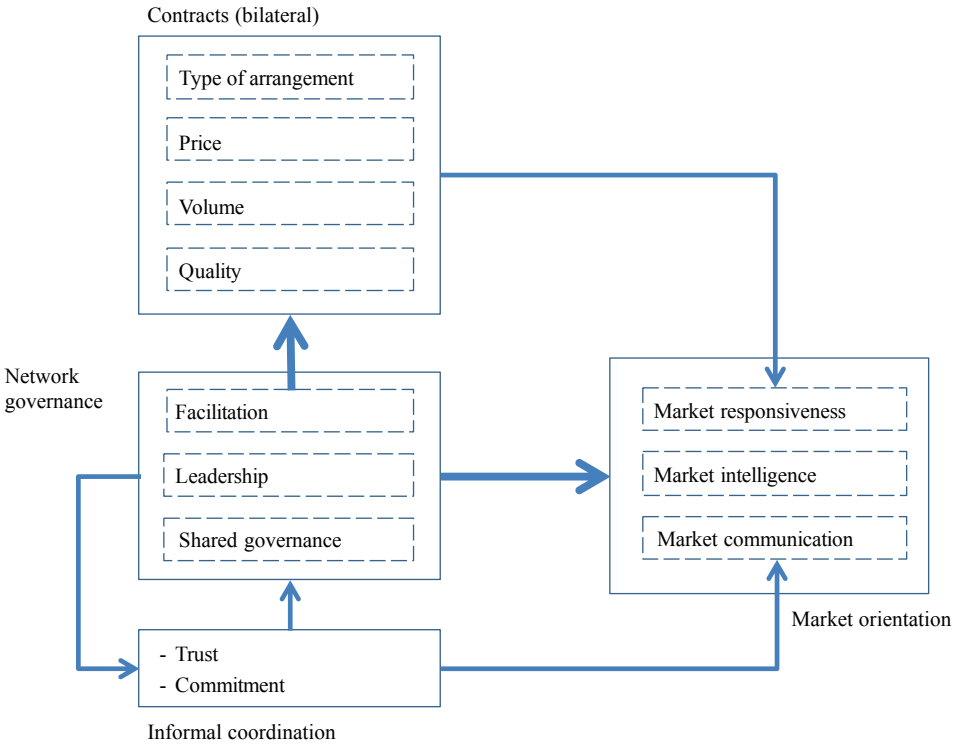

Figure 1. Conceptual model.

around the world. The marketing and distribution company is owned by producers and facilitated by legislation, as kiwi producers in New Zealand may only export through this company (with the exception of Australia).

The apple chain B consists of independent or contract growers as well as orchards owned by a large packing and distribution company that sells and distributes apples around the world. Growers supply apples to 37 post-harvest operators (pack houses and cool storage facilities). Some of these pack houses are also owned by the marketing and distribution organisation. The marketing and distribution organisation is an independent company and a clear leader in this chain. The organisation also owns the plant variety rights of two internationally well-known apple varieties. These varieties can only be exported through the marketing and distribution organisation. Other varieties can also be exported through other companies.

The venison chain C that we studied consists of 21 deer farmers (both breeders and finishers) which form a venison producer group aiming to produce high-quality and sustainable venison for international markets. The farmers supply their deer to one independent slaughterhouse. A facilitating company organises processing, logistics and marketing (including export). The farmers and this company each own 50% of the value chain company that again hires the facilitating company. Distribution and sales in Western Europe is done by a high-quality food wholesaler.

The lamb chain D consists of around 25 sheep farmers, including breeders and finishers, who together form an association. The farmers collaborate with a veterinarian, who is one of the initiators of the project. The farmers aim for sustainable production in terms of animal welfare, social responsibility and environmental responsibility. The practices must lead to a consistent and high-quality meat brand for the national as well as the international market. The farmers supply their lambs to a large New Zealand meat company, which is responsible for processing and the export to the Netherlands. Distribution in the Netherlands is performed by a Dutch importer and distribution company. This company tries to distribute the products to high-end butcher shops and wholesalers, supplying high-end restaurants, at premium prices.

Table 1. List of interviewees.

Apple value chain	
1.	Manager of orchard owned by distribution organisation
2.	CEO of orchards, pack house and cool store facilities recently acquired by distribution organisation
3.	Value chain manager distribution organisation New Zealand
4.	Marketing manager distribution organisation Benelux
Kiwi value chain	
1.	Kiwi grower
2.	Director of pack house and cool store
3.	Value chain manager distribution organisation New Zealand
4.	Marketing manager distribution organisation New Zealand
Venison value chain	
1.	Deer farmer
2.	CEO venison exporter and chain coordinator
3.	Marketing manager Deer Industry New Zealand
4.	Manager of game meat at wholesaler in the Netherlands
Lamb value chain	
1.	Sheep farmer
2.	Marketing manager lamb processor and exporter
3.	Importer and distributor in the Netherlands

Table 2. Operationalisation of market orientation concepts.

Market orientation concepts	**Indicators**	**Literature**
Intelligence generation	Market research on customer and consumer wishes and needs Measurement of customer and consumer satisfaction Meetings with customers and consumers Meetings with industry partners Research on competitors' actions Frequency of performing these activities	(Bigne and Blesa, 2003; Deshpandé and Farley, 1998; Deshpandé *et al.*, 1993; Grunert *et al.*, 2005; Jaworski and Kohli, 1993; Matsuno *et al*., 2005; Narver and Slater, 1990; Tomášková, 2009)
Intelligence communication	Wishes of customers and consumers Customer and consumer satisfaction Trends in consumer wishes Competitors' actions Complaints Sales volumes Frequency of sharing and receiving information	(Bigne and Blesa, 2003; Grunert *et al.*, 2005; Jaworski and Kohli, 1993; Matsuno *et al.*, 2005)
Responsiveness	New product development driven by market information Periodic review of whether products are in line with consumers' wishes Adapting products to consumers' or customers' wishes and complaints Adapting products or prices in response to competitors' actions Timing of response	(Bigne and Blesa, 2003; Deshpandé *et al.*, 1993; Grunert *et al.*, 2005; Jaworski and Kohli, 1993; Matsuno *et al.*, 2005; Tomášková, 2009)

The concepts in Figure 1 have been applied in a questionnaire that has been used for in-depth interviews along all four value chains, in New Zealand as well as in Western Europe. Next to the analysis of ample secondary material on the four sectors, 20 interviews were performed along these four chains. Interviews were in-depth and lasted between 1.5 and 3.5 hours. The aim was to get precise information about governance mechanisms and market orientation from different perspectives (different functions) along the chains.

In Table 1, an overview is provided of the interviewees. The interviewees were selected based on their role in the value chain and their ability to oversee (different stages of) the value chain. The interviews were performed in the last quarter of 2015 (September-November). For the lamb value chain only three interviews were conducted, since for this value chain extensive information was already available from Van Vlerken (2015).

Table 3. Operationalisation of value chain governance concepts.

Value chain governance concepts	Indicators	Literature
Network governance		
Leadership	Decision taking Initiate decision taking Organisation of meetings	(Provan and Kenis, 2008)
Shared governance	Meetings between several members Main agenda of meetings Frequency of meetings	(Provan and Kenis, 2008)
Facilitator	Facilitation with knowledge, resources, financial rewards	(Leonidou *et al.*, 2008)
Contracts		
Type of agreement	Spot-market contract Verbal agreement Formal written contract Equity-based contract Vertical integration	(Raynaud *et al.*, 2005; Wever, 2012)
Price agreements	Specifications of agreement Which actor sets price? Duration of price agreements Criteria used for price setting Circumstances under which agreement can be changed	(Wever, 2012)
Volume agreements	Specifications of agreement Duration of volume agreements Circumstances under which agreement can be changed	(Wever, 2012)
Quality agreements	Requests from customers to change quality Response to requests to change quality	(Wever, 2012)
Informal relationships		
Trust	Role of trust Confidence about accuracy and correctness of information Compliance with agreements Other actors take your interests into account when taking decisions	(Kwon and Suh, 2005; Micheels and Gow, 2011)
Commitment	Role of commitment Dedication of time, effort and resources to support others Willingness to make long-term investments when other actors wish to	(Kwon and Suh, 2005; Micheels and Gow, 2011)

Interviewees were contacted via e-mail or by telephone to invite them to participate and to give them an explanation of the research. If the interviewee was willing to cooperate, an appointment for the interview was planned. Before the actual interview was conducted the questionnaire was sent to the interviewee for the purposes of preparation.

Interviews were semi-structured, which means that in addition to questions prepared beforehand, there was room for additional questions based on answers from the interviewee. At the start of each interview, permission was requested for recording. Additionally, a concise description of the research was provided and an indication was given about topics to be discussed during the interview. The topics to be discussed in the interviews were derived from the theoretical framework described in section 3 of this paper.

Tables 2 and 3 show operationalisation of the concepts from the theoretical model. Indicators and related questions were based on the literature as much as possible.

5. Results

5.1 Market orientation

- *Intelligence generation*

In the kiwi chain (A) the marketing and distribution company applies intensive intelligence generation: different types of research, namely consumer usage and consumer attitudes research, annual tracking of markets (consumption trends for kiwis, consumer brand awareness, loyalty and engagement), pre-campaign testing (consumer perception and purchase intention), post-campaign analysis (consumer recap of campaign and buying behaviour), conduction of category information (sales volumes), in-store sampling (consumer liking, purchase intention and comparison to competitors), sensory testing with consumers (at the launch of a new cultivar), monitoring quality and price of kiwis of competitors (firmness and dry matter), research into specific areas (convenience, taste and brand), feedback from customers about markets, performance of kiwis, complaints, and interactions with consumers via social media.

In the apple chain (B) the marketing and distribution organisation conducts market research approximately once every five years, when a new variety is developed (sensory research, product name, etc.). Furthermore, there are regular meetings between customers and a regional manager in Europe, to discuss market developments and customer satisfaction. At events and fairs consumers can taste apples.

Venison chain C conducted market research with restaurant chefs in Europe before the launch of their products. They have also appointed ambassador chefs who provide market information (quality of venison, positioning, consumer satisfaction) and encourage consumers to give feedback. Venison workshops for chefs and promotions in restaurants are also organised. The industry body, which supports chain C, gathers full sales data from the distribution company in the Netherlands. Moreover, research is conducted (by the industry body) on customer preferences and restaurant chefs' and consumer usage and attitudes towards venison. In addition, consumer comments are tracked in the press and social media. Feedback from customers about satisfaction, complaints, trends in the market and competitor prices are also researched. Interactions with consumers via social media have so far had less success.

The lamb chain (D) has not performed market research on opportunities in the Netherlands and customer required product specifications before the launch of the meat product. Feedback from customers on product quality comes from the importer. There is, however, no feedback from customers' customers (i.e. restaurants). Prices of other New Zealand lamb products are monitored. Limited research is conducted on customer satisfaction with chilled lamb. In addition, market research is done by a marketing consultant on customer and consumer opinions about the lamb production. So far interactions with consumers via social media have not been successful.

■ *Intelligence communication*

The marketing and distribution company of the kiwi chain (A) receives information from customers and their European subsidiary: outcomes of market research, complaints, feedback on performance, prices and quality of competitors. It communicates this information to the breeding company, growers and post-harvest operators via industry consultation groups (growers, post-harvest operators, marketing organisation), company website, online seminars, magazines, and during annual tours ('road shows') and meetings.

The European subsidiary of the apple chain (B) updates the head office in New Zealand about the market situation on a weekly basis, via e-mail, on prices and stock levels. Twice a year both parties meet in New Zealand. Growers are kept up-to-date on situations in the market via e-mail and via the company's supply representatives, who regularly visit the growers to advise them and receive crop estimates. Occasionally customers visit growers and pack houses, where market information is discussed.

The chain facilitator of the venison chain (C) receives sales data and restaurant feedback from the industry body and market information from the European distribution organisation (such as sales of particular cuts). Market information is shared during meetings, visits by stakeholders (farmers, facilitator and customers) and via daily e-mail contact with customers. The facilitator shares information with the slaughterhouse when there is a problem or change in product specifications. Market information with farmers is communicated through an industry magazine.

In the lamb chain (D) the importer shares feedback from customers (e.g. on product specifications, such as cuts, size, labelling), prices of competitors, market development and possible aspects for improvement with the processing company via e-mail (and in some cases, also with farmers). The processing company shares relevant market information with farmers via e-mail or telephone and occasionally in face-to-face meetings. Within the group of farmers, information is also shared via an online forum. Farmers and the processing company would like to receive more market information.

■ *Responsiveness*

In the kiwi chain (A) a lot of attention is paid to breeding of new kiwi varieties, in line with consumer wishes. Setting standards (e.g. size, dry matter, firmness) and incentive systems for growers and post-harvest operators is also based on consumer wishes and competitor actions. The establishment of plans for optimal ripening takes place for storage in New Zealand, transportation and in the market, in response to customer feedback on the firmness of kiwis. The company responds to wishes for year-round supply by having growers in the Northern and Southern hemisphere.

In the apple chain (B) price changes or new competition are always discussed with the head office before action is undertaken (e.g. lower prices). Responsiveness to consumer requirements takes place through the development of new apple varieties (which take at least three years). Moreover, the company tries to have orchards/contracts in the Northern as well as the Southern hemisphere in order to guarantee year-round supply.

The industry body for the venison chain (C) supported the idea of telling the product story in a trial in 2016 based on restaurant feedback. In addition, the industry body is developing a national QA programme in response to customer feedback. Changes in packaging and storytelling took place after a consumer survey in England. Change in product specifications and volumes are based on customer feedback. There is a response to complaints, and development of cuts takes place in collaboration with customers. Supply and demand are matched in terms of volumes. Prices might be adapted in response to competitor actions.

In the lamb chain (D) the aim is to base changes in product specifications on customer feedback and complaints. There was a change from frozen to chilled lamb when New Zealand restaurants were satisfied with the quality. However, some Dutch customers were not satisfied with this switch. Although there are

customer requests for a larger variety of cuts, the number of cuts has been reduced since it was too costly. Supply does not always meet demand. Farmers are not able to respond to customer demand for year-round supply. Lamb prices can be adapted in response to competitor prices or customer feedback.

Table 4 gives an overview of the strength of market orientation in the four cases. The kiwi marketing and distribution organisation is a well-established global company that is able to generate extensive market intelligence and communicate the market intelligence throughout the chain, where this chain includes the farmer and packhouse stage in the interaction. In particular, the kiwi chain has developed many activities to increase market responsiveness. The apple chain does most market research in relation to the launch of new varieties and also pays less attention to chain wide communication and responsiveness compared to the kiwi chain. The venison chain has a close collaboration with restaurant chefs in the Western European market (including the appointment of 'ambassador chefs') to obtain information on the most valued cuts. The lamb chain more or less 'ends' with the importer in the European market, where the importer hasn't yet built close contacts with parties further downstream of the chain.

Table 4. Market orientation in 4 value chains.[1]

	Market intelligence	**Intelligence communication**	**Responsiveness**
Case A: kiwi	+ +	+ +	++
Case B: apple	++	+	+
Case C: venison	++	++	+
Case D: lamb	+/-	+/-	-

[1] ++: strong attention; +: moderate attention; +/-: limited attention; -: lack of attention.

5.2 Value chain governance

■ *Contracts*

Kiwi value chain (A) has formal written contracts throughout the chain. There is also vertical integration in this chain as growers are shareholders of post-harvest operators and of the marketing and distribution organisation. Volumes of growers are specified in supply agreements. Allocation plans are made to match demand and supply in terms of volume, size and pack type. Based on these allocation plans, the company allocates pack types and delivery schedules to grower entities and post-harvest operators. Prices are based on the pool of market returns for growers. Payments are also based on size and taste/dry matter. There are incentives for growers for early harvest and long cold storage. Post-harvest operators have incentives in the packing process.

In the apple value chain (B), there are formal written contracts throughout the chain. Agreements on volumes of growers are based on production forecasts. Prices are based on a pool of returns for growers. Sometimes premiums are payed to growers that aim at markets with tougher requirements (taste, size). With customers there are no price agreements; market developments and demand decide the price. To grow the apple varieties owned by the marketing and distribution organisation, growers have to pay royalties. The company uses several incentives such as a penalty system for lower quality products and a premium for long-term storage at growers (to meet demand fluctuations). Post-harvest operators have incentives in the final packaging process (timing of packaging).

Venison value chain (C) is organised through verbal agreements and equity-based contracts between farmers and the facilitating company. There are formal written contracts between the slaughterhouse and the facilitator (on behalf of farmers). Verbal agreements govern the relationship between the facilitator and the high-end distributer in Europe. Volumes of farmers are specified in a supply agreement. During the season,

the facilitator checks with customers about sales of venison and with farmers about the supply of deer. In the event of supply shortages other farmers make up the shortfall, as they are committed to helping each other. The farmer base price is based on the returns in the market. Fluctuations in farmer base prices can take place during the year to influence the supply of deer by farmers.

Lamb value chain (D) is characterised by verbal agreements. Volumes of farmers are specified in a supply agreement. There is a fixed volume agreement between the processing company and the importer/distributor in Belgium (1000 lambs per week). Farmers have difficulties living up to these volume agreements. The processor tries to push the farmers for a consistent supply. However, there are no penalties when farmers don't comply. Farmers get the market price and a premium per kilogram of live weight of lamb from the processor. The processor aims to have a fixed price for the importer, who aims to set monthly prices with its customers. Shareholding of farmers is required in order to be part of this lamb chain.

Table 5 depicts the contract elements of the four cases. The most vertically integrated chain is the kiwi value chain (A), followed by the venison chain (C) and the apple chain (B). Case D is the least integrated value chain.

Table 5. Type of contract in the four cases.

	Type of agreement	**Price**	**Volume**	**Quality**
Case A: kiwi	Written contracts + equity based	Based on pool of returns	Based on supply agreement	Based on size, taste/dry matter
Case B: apple	Written contracts	Based on pool of returns	Based on production forecasts	Related to market, taste/ size
Case C: venison	Verbal and written contracts + equity based	Price/kg based on returns in market	Based on supply agreement	According to quality standard
Case D: lamb	Verbal and written contracts	Market price	Based on supply agreement	According to quality standard

■ *Network governance*

In the kiwi chain the market and distribution organisation is the lead company, which is responsible for intelligence generation activities, communication of market intelligence, facilitating, setting and checking of production standards and incentive systems and management of the product flow. Its basic source of power is that it is the single point of entry for New Zealand producers to international markets (with the exception of Australia).

Shared governance is strongly supported by intensive communication and consultation between chain actors. There are monthly meetings of industry consultation groups where outcomes of market research are discussed and fortnightly conferences on quality between market representatives and post-harvest representatives. In addition, there is an annual tours programme during which retailers, wholesalers and authorities visit New Zealand. Moreover, growers and post-harvest operators visit markets (organised by the lead company as well as by post-harvest operators). Grower roadshows are attended by growers, post-harvest operators and the lead company three times a year.

The lead company facilitates chain collaboration by giving assistance to growers for the implementation of Global GAP, knowledge transfer on growing techniques via grower education systems, workshops and online seminars, and intensive production support.

In the apple chain also, the market and distribution company is the lead party. The company is responsible for intelligence generation activities and optimises the product flow (harvest, packaging, storage, transport) through planning and a system of incentives. It sets standards for growing and packing the own apple varieties. Its source of power is vertical integration, through ownership of several orchards and packing houses, and plant variety rights for two major varieties.

It supports shared governance through weekly meetings between managers of owned orchards (about technical issues, packing of apples and developments in the market) and monthly meetings between contract growers, managers of owned orchards, post-harvest operators and the leading company (about sales, complaints and prices). Visits of representatives of the company to post-harvest operators takes place on a weekly or two-weekly basis (about new packaging and label requirements, changes in market demand, timing of supply). Meetings between managers of the company's subsidiaries in Europe and the head office in New Zealand take place twice a year. Grower meetings take place four to six times a year. Annually there are grower visits to markets and customer visits to New Zealand. Decisions are taken by the lead company. The lead company facilitates chain collaboration through knowledge transfer on growing techniques to growers on field days and visits by third party technical people. In addition, the company sends newsletters to growers with technical and market requirements.

In the venison chain the facilitator takes the leadership role. It is responsible for some intelligence generation activities, connects actors, optimises the product flow and influences the behaviour of other actors (incentive systems). These activities are supported by Deer New Zealand which undertakes market research for the sector and provides marketing funds to the venison companies. The source of power of the facilitator is the trust of farmers in its competences to connect both ends of the value chain, and to develop and maintain all relationships in the value chain.

Shared governance is an important issue in this value chain. In the farmer group there is intense communication and farmers try to help each other to improve. If a farmer wants to become part of the producer group, other farmers can use their veto if they believe that the farmer has a different philosophy or is not able to supply according to specifications. Meetings of the producer group and the facilitator take place four times a year (discussions about the market, farm management practices, industry-related topics). The Annual General Meeting is attended by farmers, the facilitator and one or two customers. Moreover, there is a board meeting of farmers and facilitator four times a year (discussions about sales volumes). There are customer visits to New Zealand and grower visits to the market (discussions about demand, supply, wishes of consumers, complaints, trends in the market, prices, sales volumes, and aspects for improvement). The lead company facilitates some market research.

In the lamb chain leadership is less present. The processor tries to optimise the product flow and has developed some incentive systems. The main leader in this chain is a farmer who was one of the initiators of the chain. However, connections with the market are organised by the slaughterhouse.

Shared governance is supported by communication and consultation between the board of the farmers group and the processor several times a year. The Annual General Meeting is attended by farmers and the processor. Until now the importer has not taken part in these meetings. Two farmers visited the importer. The processor visits the importer annually (but not only for this value chain). There is communication via e-mail, but actors would like to have more face-to-face meetings. A 'Farm Quality Group' provides advice to farmers on farm management practices.

Table 6 shows clearly the differences in network governance structures. The chains with a clear leader and support for shared governance are the most integrated chains. It is interesting to note that the most integrated chains (A-kiwi and C-venison) use (partly) non-coercive power to organise the product flow, and also have more intense communication and shared governance.

Table 6. Network governance aspects for the four cases.

	Leaderships	Type of power	Shared governance	Facilitation
Case A: kiwi	Lead party is marketing organisation	Power based on sole entry point (coercive power) Non-coercive power (based on competence trust)	Intense communication and consultation throughout the chain	Marketing, knowledge transfer and training
Case B: apple	Lead party is marketing organisation	Power partly based on vertical integration and contracts (coercive power)	Decisions taken by lead party; meetings to optimize product flow	Marketing, knowledge transfer and training
Case C: venison	Lead party is facilitator	Power based on competence trust (non-coercive power)	Intense communication and consultation throughout the chain	Marketing and customer contacts (supported by sector organization New Zealand)
Case D: lamb	No clear lead party	Slaughterhouse provides market access	Limited communication between end-to-end chain partners	Some training organized by the farmer group

■ *Informal relationships*

In the kiwi value chain permanent and good relationships exist between growers, post-harvest operators and the lead company as well as between the lead company and customers in which there is openness, trust, two-way dialogue, integrity and respect. Transparency, incentive systems and belief in the single desk structure contribute to the relationships between the New Zealand actors. Relationships between growers and post-harvest operators are also generally good. The role of trust is considered huge as it underpins every stage in the value chain, namely the trust that every actor in the value chain does a good job and acts to the best of its abilities. The commitment of growers is supported by consistent and safe returns, as well as by the shareholding system. Commitment to the chain is positively related to trust between the actors.

In the apple value chain relationships between lead company and the growers are good according to most growers. However, some growers do not want to commit their volumes to the lead company and therefore the lead company has partly vertically integrated by establishing its own orchards. Relationships between the lead company and post-harvest operators can be awkward as the lead company can be very stringent in what is accepted in terms of quality specifications of the apples. There are good relationships between the lead company and customers. In general, the focus of the value chain is more on vertical integration than on relationships. Trust, supported by communication, does support transactions in the value chain. There is trust in the accuracy and correctness of information received. Open communication and transparency (as stimulated by trust) contribute to commitment.

The venison value chain is characterised by tight and good relationships between farmers, slaughterhouse and the facilitator due to open communication. Moreover, there are good relationships between farmers and customers in the market due to face-to-face meetings and the emotional attachment of farmers to customers. Relationships between the facilitator and the European distributor are crucial for market orientation. In this regard, face-to-face meetings are crucial for building relationships. The role of trust is considered huge as it influences the willingness to share information and communicate and it replaces the need to constantly control and check the behaviour of other actors. There is trust in compliance with agreements, and the competences of other actors. The actors are also highly committed to the value chain, supported by the system of shareholding. Commitment results in actors spending more time, effort and resources on the value chain.

In the lamb value chain there are good and collaborative relationships between farmers and the processor due to a commitment to grow and develop the product in the market. There are also good business relationships between the processor and the importer (which are not limited to this chain). The importer has relationships

with distributors however there is little connection to the final customer (restaurants and specialist butchers). Relationships between farmers and the importer are not optimal due to misunderstandings, possibly caused by a lack of face-to-face meetings (difficult due to geographical distance and lack of resources). The challenges related to volumes and prices put pressure on the trust present in the value chain. Many farmers are quite committed to the value chain due to their shareholding in the Farm Quality Group, shared passion and belief in the programme. However, not all farmers seem highly committed to delivering the volumes required in the market.

From Table 7 we see that trust and commitment are closely related to shared governance (Table 6) and (non-coercive) leadership. In the following section we will further analyse the relationships between market orientation and governance.

Table 7. Levels of trust and commitment in the four case chains.[1]

	Trust	**Commitment**
Case A: kiwi	++	++
Case B: apple	+	+
Case C: venison	++	++
Case D: lamb	+	+/-

[1] ++: strong presence; +: moderate presence; +/-: limited presence of trust/commitment.

6. Discussion and conclusions

Table 8 gives insights into the main relationships between the concepts that we applied in our research. In three of the four value chains, there is a clear actor who has taken the leadership role. The absence of a leader in the lamb value chain could explain why this value chain is less market-oriented than the other three. There are typical similarities in the activities that reflect the leadership role:

- All three leaders have a strong focus on markets and customers or, in other words, aim to create a market-oriented chain.
- All three leaders are responsible for conducting intelligence-generating activities. The kiwi and apple lead parties conduct a large variety of intelligence-generating activities in their value chain and the venison chain conducts some of these activities.
- All three leaders oversee the whole value chain from the farmers to the market. This enables the leader to facilitate intelligence communication from one end of the value chain to the other.
- All three leaders are involved in optimising the product flow as they all communicate demand and supply with the different actors in the value chain and try to match these.
- All three leaders influence the behaviour of other actors in the value chain and thereby support market responsiveness of the chain. For example, both fruit chains established detailed standards for growers and post-harvest operators. The lead party in the venison chain established an incentive system for farmers related to product specifications of the venison.

The points show that leadership in a value chain may contribute to market intelligence generation, communication and responsiveness, which is in line with the findings of Elg (2008) and Kahkonen and Tenkanen (2010).

The use of coercive power by the lead organisation can create tension in the relationship, because the lead organisation can force the other party to do things that this party would otherwise not have done (Leonidou *et al.*, 2008). In kiwi value chain A, the impact of the use of coercive power on relationships between marketing organisation and farmers is moderate, as the shareholding structure in this chain gives growers the power to

Table 8. Overview of relationships between governance elements and market orientation of four case value chains.[1]

	Case A:kiwi	Case B: apple	Case C: venison	Case D: lamb
Chain leader	++	++	++	+/-
Shared governance	++	+	++	+/-
Facilitation	++	++	+	+/-
Strictness contract	++	++	+/-	+/-
Equity based	++	+/-	++	+/-
Trust	++	+	++	+
Commitment	++	+	++	+/-
Market intelligence	++	++	++	+/-
Communication	++	+	++	+
Responsiveness	++	+	+	-

[1] ++: strong presence/attention; +: moderate presence/attention; +/-: limited presence/attention; -: lack of attention.

take a stand if they do not agree with decisions or actions taken by the lead company. Moreover, alignment of actors in this chain is supported by the good relationships between the growers, post-harvest operators and the lead company. In addition, this chain has a special shared governance structure with its industry consultation groups, in which growers, post-harvest operators and the lead company are represented. These industry consultation groups meet once a month to discuss major industry issues, such as taste reviews. The meetings of the consultation groups contribute to intelligence communication through the value chain, since market information can be shared. In addition, the meetings contribute to responsiveness of the value chain as decisions can be taken about how to respond to market information, such as outcomes of sensory research.

In the apple value chain (B), the leader uses much more coercive power to align activities with its own objectives. Shared governance in this chain is at a lower level than the kiwi chain, as are trust and commitment. Another example of shared governance, in which part of the chain was governed by several actors, was found within the lamb and venison value chains, in which the farmers formed a farmers' group. Within these farmer groups, there is communication on how farm management practices can be improved. The venison producer group in particular is characterised by strong collaboration between the farmers and also with other actors in the chain, as well as by social pressure between the farmers to apply good farming practices and on the other actors to perform in line with the common objectives. The existence of the venison producer group, and its strong collaboration with the facilitator, slaughterhouse and distributor in Europe, contributes to the responsiveness of the value chain. In venison value chain C the lead party applies non-coercive power based on competence trust. There is a high level of shared governance in this chain, as well as high levels of trust and commitment between the different actors. In lamb chain D no clear lead party is present, and, although there is close collaboration within the farmer group, shared governance and trust throughout the chain are moderate while commitment is lower than in the other chains.

Leadership can be supported by facilitation of market research, market intelligence communication throughout the chain and farmer support. Additionally, findings indicate that the facilitating role can be taken by a value chain actor as well as by an external organisation, that is not, or only to a very limited extent, involved in the product flow of the value chain. This is the case for the venison value chain.

Regarding contractual arrangements, in three of the four studied value chains, not just one but multiple types of bilateral agreements are being used. In the kiwi value chain there are written as well as equity-based agreements, while in the venison value chain we see (long-term) verbal agreements next to equity-based agreements. In the apple chain the focus is on written agreements and in the lamb chain on (long-term) verbal agreements. A clear finding in this research is that spot-market agreements are not used in any of the four value chains. Peterson *et al.* (2001) described spot-market contracts as being focused on the short

term and associated with limited information exchange. Therefore, a certain level of integration might be conditional to being market-oriented.

6.1 Conclusions

Leadership was found to be an important characteristic of value chain governance as it could contribute to all three constructs of market orientation. The actor taking a leadership role has the ability to oversee the whole value chain and connect actors in the value chain, which contributes to intelligence communication. Additionally, the lead organisation is able to optimise the product flow and influence the behaviour of other value chain actors, both of which contribute to value chain responsiveness. The leader also performs activities aimed at gathering market information, which contributes to intelligence generation. Moreover, the leader can create and stimulate one common vision in the value chain, namely the focus on customers and consumers. By doing so, the leader can stimulate market orientation to be the common goal of the value chain.

Leadership was found to be closely related to facilitation, since the actor taking a leadership role can also act as a facilitator. The facilitator can provide other actors with knowledge and/or assistance, and thereby contribute to their responsiveness. Furthermore, facilitation can contribute to intelligence generation by conducting intelligence-generating activities.

Leadership can be the result of coercive and non-coercive sources of power. Non-coercive sources of power were found to have a positive effect on the informal relationships in the value chain. In contrast, the coercive sources of power had a negative impact on these informal relationships, as the lead organisation may force other actors to do things that these actors would otherwise not have done (Grunert *et al.*, 2005; Kähkönen and Tenkanen, 2010; Leonidou *et al.*, 2008). This can create tensions in the informal relationships. However, trust and commitment, as constructs of informal relationships, can contribute to all three constructs of market orientation, namely to intelligence communication (by increasing the willingness of actors to share information), responsiveness (by increasing the willingness of actors to dedicate time, effort and resources to the value chain) and intelligence generation (via their contribution to relationship quality and related information exchange). It was found that by involving different actors in the decision-making via shared governance, the negative impact of leadership on informal relationships could be decreased. Shared governance, characterised by the presence of many face-to-face meetings, also contributes to intelligence communication and responsiveness, as market information can be exchanged and decisions regarding responsiveness can be taken during these meetings. In addition to shared governance, shareholding of actors can also lower the negative impact of leadership on informal relationships. When actors have a shareholding in the value chain, they have the power to stand up if they do not agree with decisions or actions taken by the leader.

6.2 Management implications, limitations and further research

Based on the insights obtained in this research, recommendations can be made to actors of global food value chains, which aim to be market-oriented. The insights from this research can be used by value chain actors to analyse their value chain and find points for improvement in order to increase their market orientation. In addition, all of these aspects of governance are interrelated and can therefore positively or negatively influence each other. For example, leadership in particular was found to contribute to market orientation in several ways. However, when using coercive power, leadership can also have a negative impact on the informal relationships in the value chain, while these informal relationships are important contributors to market orientation. Therefore, special attention must be paid to these informal relationships.

■ *Further research*

This exploratory research into market orientation and value chain governance has delivered new insights for further research. First, only a little research has been performed on market orientation of value chains (e.g. Grunert *et al*., 2005). Even less research has been performed on the governance of value chains. This study

contributes strongly to the literature in the field of market orientation as well as value chain governance. For the latter in particular, we have designed an innovative theoretical framework, combining insights from contract theory (e.g. Williamson, 1991), social network theory (e.g. Lu *et al.*, 2012) and network governance (e.g. Provan and Kenis, 2008).

The framework and approach can be used by other scholars and add to our insights in market orientation and value chain governance.

This research has several limitations. The research assessed the contribution of governance to market orientation. The effect of the level of market orientation on the performance of the value chain (for example, profitability) was not investigated. Moreover, governance costs of the value chain were also not included in the study. Further research may include these elements.

Four chains were addressed in this exploratory research to arrive at new insights into the relationships between market orientation and value chain governance. As the number of chains and the qualitative research performed in each of these chains must be considered rather limited, further research should focus on more and more differentiated chains from different sectors, with more quantitative based in-depth research.

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