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INVESTIGATING SUPPLY CHAIN COOPERATION IN FINNISH GROCERY RETAIL

Abstract

This paper explores how a cooperative approach to supply chain management enhances supply chain performance under fluctuating demand and uncertainty in the grocery retail sector. The exploratory and qualitative empirical study comprises a two-echelon case study of a Finnish grocery retail supply chain focussing on a grocery wholesaler and its tier 1, small retail customers. Interviews were conducted with key respondents at both echelon levels and it was found that cooperation can be a useful and successful technique to reduce costs and improve supply chain performance in a volatile and uncertain demand context. A list of enablers and barriers for supply chain cooperation were developed to guide practitioners and there is a brief discussion of this study's implications for Poland.

Keywords: supply chain management, supply chain cooperation, supply chain integration, retail, grocery sector

Introduction

Several research streams regarding the practical implementation of supply chain cooperation (SCC) and the benefits from such cooperation in the retail grocery sector have developed over the last two decades¹. Early advances in the field of SCC were primarily concerned with information exchange (Skjoett-Larsen et al., 2003), including for example continuous replenishment (CR) and vendor-managed inventory (VMI). Later work has holistically addressed additional supply chain

¹ We note the term collaboration is widely used in the North American and UK contexts as opposed to cooperation and we suggest anyone wanting to read more around this topic should search using both terms.

(SC) needs by widening the scope to joint planning, forecasting and replenishment in the forms of efficient consumer response (ECR) and cooperative planning, forecasting and replenishment (CPFR).

However, issues of fluctuating demand and demand uncertainty identified at the turn of the Millennium (Barratt, Oliveira, 2001) still affect supply chain performance using advanced cooperative processes (Ehrental et al., 2014), and it has been suggested that deeper cooperation is the key to decreasing the impact of demand fluctuations (Simatupang, Sridharan, 2005; Alftan et al., 2015). Thus, “after years of attention to [SCC] with mixed reviews it seems [SCC] is both active and understudied. Firms are choosing different levels of [SCC] with partners [and] (...) now is the time for deep and detailed studies of firm” [SCC], strategies behind it, and “what can reasonably be expected from” [SCC] (Ralston et al., 2017, p. 525).

The grocery retail sector and its associated supply chains differ from the manufacturing and non-grocery sectors due to the perishable nature of most products and greater demand fluctuations caused by more frequent purchases and promotional campaigns (Taylor, Fearne, 2009). Some research has investigated the state of SCC and different SCC initiatives in the retail grocery sector (see for example Kaipia et al., 2013; Ehrental et al., 2014; Elkady et al., 2014; Alftan et al., 2015), however research on the links between information technology (IT) sharing, SCC, and SC performance remains sparse (Elkady et al., 2014). In addition, demand uncertainty and seasonality are areas often poorly considered by smaller retail chains in particular (Ehrental et al., 2014). This paper addresses these shortcomings by exploring the gap between IT, SCC, and SC performance to extend knowledge from previous research and combine it with fresh empirical data.

1. Literature Review

Ralston et al. (2017) consider SCC relationships as “long-term relationships where participants generally cooperate, share information, and work together to plan and even modify their business practices to improve joint performance” (2017, p. 508). Nowadays, SCC is considered vital to achieve increased competitive advantage for a particular SC (Kumar, Banerjee, 2012). Advances in IT and the Internet as an IT platform have made technology easily available and less costly for firms, with the result that the status of IT as a competitive advantage enabler has been reduced, turning IT instead into a competitive necessity or hygiene factor (Fawcett et al., 2011). However, previous failures to obtain expected benefits from IT implementation, especially in the cooperative efforts of small supply chains, have demonstrated flaws in thinking that SCC always increases supply chain (Elkady et al., 2014).

Furthermore, some discussions about SCC initiatives are still at a theoretical level and have not progressed to widespread practical application in industry (Büyükoçkan, Vardaloğlu, 2012; Panahifar et al., 2014). The literature also suggests that cooperation is not a question of ‘either or’ and that supply chains should cooperate instead on different levels with different firms and that the intensity

of cooperation with different partners should generally increase gradually with time, resulting in a contingent approach to cooperation among companies (Skjoett-Larsen et al., 2003; Danese, 2011).

Supply chain cooperation has been described and defined in several different ways however the general idea is that supply chains work together to achieve a competitive advantage (Soosay, Hyland, 2015). The practical implementation of supply chain management (SCM) can be seen as a balance between two processes as cooperation is about both the relationship among companies as well as the integration of business processes of two or more companies deciding to cooperate. The type of supply chain cooperation can be assessed on two different scales: systems cooperation (Kim, Lee, 2010) and cooperation depth (Matopoulos et al., 2007). Systems cooperation can be viewed as the extent to which supply chain partners align and integrate their IT systems with each other, while the depth of a cooperative relationship can be either strategic, tactical or operational (Kim, Lee, 2010).

Regarding depth, at a strategic level firms seek to develop a culture of cooperation and relationships that will influence all business processes and decisions. At a tactical level firms seek some form of integration with each other while on an operational level firms focus on information exchange (Matopoulos et al., 2007). Strategic and systems cooperation have a tendency to strengthen each other: increased depth of cooperation make increased systems integration and real-time information exchange necessary, while the sharing of increasingly sensitive data and systems integration call for a more strategic partnership between firms (Kim, Lee, 2010).

A cooperative relationship begins from two factors: trust and technology (Barratt, Oliveira, 2001). Trust is seen as an important enabler of cooperation and conversely a lack of trust is seen as a barrier (Barratt, Oliveira, 2001; Skjoett-Larsen et al., 2003; Attaran, Attaran, 2007). A lack of trust might also lead to more transactional as opposed to relational behaviour on behalf of cooperating firms (Grant, 2005). Simatupang and Sridharan (2005) suggest five critical factors for supply chain cooperation: a cooperative performance system (CPS), information sharing, decision synchronization, incentive alignment, and integrated supply chain processes.

The concept of power is an integral part of supply chain relationship management as levels of trust and dependency can either enable or inhibit the development of cooperative relationships (Matopoulos et al., 2007), while a fair sharing of risks and rewards are necessary for a successful SC relationship (Simatupang, Sridharan, 2005). The alignment of supply chain partners is critical as synchronization of both systems and decision-making is in a key role in SCC (Matopoulos et al., 2007).

Information sharing also plays a key role in the coordination of supply chain activities, and especially in reducing the bullwhip effect or demand amplification (Elkady et al., 2014). The extent of cooperation is also important as SCC requires resources and thus firms have to choose how and on what level they should cooperate. Skjoett-Larsen et al. (2003) suggested that there are three levels of CPFR cooperation based on the scope (number of business processes in cooperation) and depth (level of integration of these processes), while Matopoulos et al. (2007) suggested similar levels of cooperative relationships. The basic idea behind this is that firms can tailor suitable cooperative solutions for their specific needs (Danese, 2011).

Thus, SCC consists of managing supply chain activities and managing supply chain relationships. These include the process of selecting cooperative partners, what practical implementations and processes the cooperation should involve, and the management of levels of trust and power among partners. The implementation of SCC also requires firms to emphasize and exploit enablers while mitigating and removing barriers to cooperation. As the literature suggests, the need for cooperation generally comes from external, macro-industrial factors in the form of increased competition.

The grocery retail setting is particularly competitive due to homogeneous products that make price a key competing factor between retail chains. Key drivers behind the integration of supply chain partners here are the need to achieve increased effectiveness for the whole supply chain as well as higher quality service to customers. Also, an internal supply chain requirement to mitigating the bullwhip effect is an important driver for increased transparency and integration in the SC. As the primary focus of this paper is on information flows, IT capabilities thus become a primary driver for supply chain processes.

The objective of this paper and its related empirical study were to investigate how cooperative supply chain capabilities can cope with uncertain demand, i.e. extend previous research on cooperative supply chains to a field which is not extensively researched yet (Elkady et al., 2014). One of the growing aspects of contemporary SCM research is how technological advances enable supply chain cooperation (Soosay, Hyland, 2015) as well as how human resources, particularly at store level, interact with various systems and replenishment methods (Trautrimis et al., 2012). In this context, we consider depth to be vertical integration only. There has been some work on horizontal collaboration but the retail grocery sector has been slow to adopt this concept (Hingley et al., 2011) and thus it is outside the scope of what we want to explore. Thus, we developed an empirical study to explore how aspects of this phenomenon work in practice (Yin, 2009). The research questions for this study are as follows:

RQ1: How are the various partners or actors collaborating in this supply chain?

RQ2: What are perceived barriers and enablers to supply chain cooperation in the supply chain?

RQ3: What are practical implications of increased supply chain cooperation and information sharing in the supply chain?

The first research question seeks to explore the function of the supply chain cooperation within the context of wholesaler-retailer. However, the second and third research questions are more focused on descriptive research, to generate an understanding of actor expectations and perceptions of SCC.

2. Methodology

The empirical study is conducted from a 'reality-oriented' perspective, placing focus on the validity, reliability and objectivity of the data in light of previous literature and taking into account the fact that total objectivity is not possible.

The research process is thus inductive, i.e. progressing from observations toward enhancing extant theory (Patton, 2002). We use a case study as it is an appropriate method when doing exploratory research to address what, why and how questions (Ellram, 1996; Yin, 2009). Case studies are studies that “focus on holistic situations in real life settings, and tend to have set boundaries of interest, such as an organization, a particular industry, or a particular type of operation” (Ellram, 1996, p. 99).

Previous literature already provides some answers for the why, i.e. to answer to fiercer competition (Matopoulos et al., 2007) and to reduce waste and increase shelf availability and effectiveness, ultimately providing increased service levels to customers (Kaipia et al., 2006; Kaipia et al., 2013; Alftan et al., 2015). Thus, this study specifically focuses on the how and what regarding links between performance increases and cooperation with a focus on the challenges of demand volatility and uncertainty.

The empirical study investigated two echelons, a wholesaler (focal company) and two of its retail customers, and specifically focuses on a real-life setting within a specified bound of interest (i.e. specific organization, industry and operational setting). The focal company, which is called WS in this paper, is a wholesaler in the Finnish grocery industry. The retail customers of WS that are part of this research are called RS and RW in this paper.

RS is a retail chain consisting of several hundred small grocery stores operating nationwide in Finland. RW is a retailer-wholesaler, whose customers consist of primarily smaller grocery and retail chains and corporate customers in the HoReCa (Hotel, Restaurant, and Catering) sector. RW also operates cash-and-carry grocery stores that serve both private and corporate customers (primarily small restaurants) directly around Finland. WS obviously has other customers, but RS and RW are the two most important when considering revenue and volumes, and thus are the only ones included in the case study. RS and RW also have a symbiotic relationship with WS through a shared ownership structure.

Empirical data were gathered through semi-structured interviews with key personnel from the three companies; see Table 1 for demographic details. The sampling was developed with the planning manager of WS and is a purposeful sample based on the perceived quality of information that the respondent could give (Patton, 2002). We used an interview guide to aid in the data gathering process and give structure and coverage to the interviews however interviews were still conversational with open-ended questions to allow increased depth (Ellram, 1996; Patton, 2002).

Interview transcripts were analysed using content and thematic analysis techniques to determine similarities and differences (Patton, 2002). The small number of interviews for this exploratory study does not justify the use of qualitative data analysis software such as NVivo (Dey, 1993). During the analysis process some additional questions arose and were answered through e-mail correspondence with PlanMng from WS.

Table 1. Interview Respondents

Organization	Title	Abbreviation
RS	Logistics Manager	LogMng
RW	Logistics Development Manager	LogDev
WS	Planning Manager	PlanMng
WS	Logistics Manager	LogMng
WS	Logistics Development Manager	LogDev
WS	Planning Manager	PlanMng

Source: (own elaboration)

Research quality in a qualitative context was determined by the notion of trustworthiness and its four criteria of quality, as opposed to usual quantitative quality measures of external and internal validity, reliability and objectivity (Halldórsson, Aastrup, 2003). The four quality criteria for trustworthiness are credibility (degree of match between respondents' view of reality and a researcher's representation of these views); transferability (extent to which the study is able to make general claims); dependability (concerned with the stability of data over time); and confirmability (findings represent the results of the inquiry and not the researcher's biases). Despite the small number of interviewees we believe our use of the trustworthiness elements and criteria has enabled us to collect some of the rich data we anticipated.

3. Analysis and Discussion

RQ1: How are the various partners or actors collaborating in this supply chain?

The three organizations cooperate in all phases of the physical flow of goods through the supply chain on a range of activities including procurement, quality control and importation of goods. Forecasting and replenishment is centralized to WS, and strategic business plans are made in cooperation through regular meetings on multiple executive levels. This can be seen as cooperation with regards to exception management and promotional campaigns, but also in the day-to-day distribution and logistics as these are largely handled by WS. The distribution of goods is outsourced to third-party logistics (3PL) firms and while WS coordinates and handles the process of sending the right cargo with the right truck to its customers it does not own any trucks itself.

The interviewees listed multiple reasons for this kind of cooperative approach. The case supply chain is characterized by a drive to enable better service to the end customer and increase efficiency or reduce redundancies in the supply chain. The motive for increased cooperation is to increase the efficiency of the supply chain and one of the interviewees commented on the cooperation in the following way: "of course we work more like a single company (...), create a win-win-win situation through success" (LogMng, RS). The role of WS in the supply chain was described in the following way: "we are this kind of strategic supply chain partner, so we have sought integration both with customers and towards suppliers (...) and build more added value through this, compared to buying and selling which is more like

traditional wholesaling" (LogMng, WS). As Simatupang and Sridharan (2005) suggest supply chain cooperation needs a fair balance of power and this supply chain has resolved the issue through the ownership structure of the wholesaler. Thus, a lot of the executive power can be transferred to the wholesaler without the retail echelon of the supply chain losing control. Costs of this arrangement are generally also distributed according to the resources allocated to each of the retailers.

Some interviewees also mentioned other important reasons for cooperation such as the idea to use shared and common information and to work more like a single company across the supply chain, instead of everyone doing their own thing. The supply chain collaborates on multiple levels, and as Danese (2011) and Skjoett-Larsen et al. (2003) suggest cooperation can be seen as a gradual process or a contingency from 'basic cooperation' to 'advanced cooperation'. This is also something that can be applied to the cooperative practices of WS, as it collaborates on different levels with some of its customers than with others, based on mutual needs and understandings. As suggested by Matopoulos et al. (2007) firms should choose with whom, and on what level, they want to cooperate (i.e. operational, tactical, or strategic). WS has a high level of cooperation with especially RS, and this has also brought efficient synergies to both companies.

The cooperation in the supply chain is quite extensive, as a centralized forecasting and replenishment function is managed by WS and the goal is to use this data as far as possible both downstream and upstream in the supply chain. The management of relationships in the SC is handled through agreements on cost sharing and trust building (Grant, 2005), and also through KPI and data showing that the integration actually works. This leads to the topic of the second research question.

RQ2: What are perceived as barriers and enablers to supply chain cooperation in the supply chain?

Three key topics emerged in the interviews that cover most of the enablers mentioned: culture (trust, willingness to cooperate, top management support), communication and (technological) capabilities. These topics are also frequently found and cited in literature as key enablers to SCC (Barratt, Oliveira, 2001). The role of IT was mentioned several times however the underlying culture of openness, trust and communication was in a key role in enabling the technological aspects of cooperation. The barriers are more diverse and views on the matter differed more between respondents as well. Generally, the topic of barriers was considered more difficult as the cooperation in the supply chain seemed to be working very smoothly. IT capabilities in the supply chain are generally considered adequate, but the accuracy and reliability of the forecast was mentioned as a limit to the extent of IT-enabled cooperation. However, the main barriers were seen in cooperative culture and traditional thinking that causes companies to hold information secret from supply chain partners, and this is also in line with previous research (Skjoett-Larsen et al., 2003).

Enablers were considerably more prominent when the interviewees were asked about possible enablers and barriers. In particular, the technical aspects and cooperative culture were applauded by the respondents. However, previous research suggests that IT alone is not enough to enable cooperation on a profound level, and thus it would seem like the corporate culture has enabled the technical

side of the integration to work at its full potential. Forecasting accuracy was also at some points not good enough, and then flexibility and communication were considered necessary along with improved forecasting abilities to enable the cooperation to go further. Most of the respondents had also positive attitudes towards the idea of further integration and that there were further gains to be realized from increasing the depth and width of integration. Also, the shared ownership and company structure solved many of the issues related to power that Matopoulos et al. (2007) pointed out, i.e. the wholesaler does not gain all the power in the supply chain even though the forecasting and replenishment is concentrated to it.

However, the respondents emphasized that barriers were quite minor compared to enablers and that the practical results and KPIs strongly supported cooperation. As the transparency of KPIs became better through increased understanding of the partners business decisions, it was also easier to 'sell' the new cooperative practices within the organizations as the numbers supported this development. The interviewees were also quite content with the results of the integration in the supply chain, and this could also be seen from the answers to the last research question.

RQ3: What are practical implications of increased supply chain cooperation and information sharing in this supply chain?

The interviewees reported a range of benefits from SCC and information sharing including more efficient SC operations and improved customer service. Generally, the cooperation was not regarded as something that would bring additional costs or other harmful effects as the integration of processes such as forecasting and replenishment freed time from other instances in the supply chain instead. If costs arose from some cooperative activities, they would usually be divided between the customers according to the volume impact of the process.

The main benefit of the cooperation to retailers RS and RW was a more efficient allocation of workforce. Store employees no longer had to spend as much time ordering and managing store inventory levels, instead the centralized forecasting and replenishment function freed more time for the 'core business' of selling and serving customers (Trautrimis et al., 2012). The main benefit at WS was more efficient capacity utilization and more possibilities for optimization. The integrated forecasting and replenishment function at WS also provided better visibility and less redundant work throughout the supply chains, and this was also one of the stated purposes of this arrangement.

This was commented on in the following way by one of the interviewees: "well, the starting point for all these kinds of implementations was to start by freeing time at the store end to concentrate on the relevant tasks, that is customer service. Ordering was not their actual core activity, rather it is selling products and serving customers. (...) And of course through all the possibilities to forecast we have more information at our disposal here at [WS] so we have the possibility to plan our activities better" (PlanMng, WS).

4. Implications for Poland

Here we provide observations from extant literature on the foregoing issues as they may relate to Poland. Only English language academic papers were reviewed for this section. The state of Polish retail, past, and expected changes for the future are briefly presented, looking at development of the retail structure, cooperation among actors, as well as barriers and enablers required for cooperation.

4.1. Changes in retail structure

Waters (1999) documented the change in Poland's industrial policy, which concentrated on heavy industry and mining but put no emphasis on the retail sector prior to 1989. Subsequently, Poland went through a period of major economic change and the existing distribution system could not cope with increasing consumer demands. The government withdrew from the retail sector and encouraged private ownership and welcomed foreign companies to open branches. As a result, retail hypermarket operators from Western Europe moved into the market strongly during the mid-1990s (Dawson, Henley, 2000). Key changes taking place in the distribution of Fast Moving Consumer Goods (FMCG) in Poland included a sharp rise in the number of retail outlets, grocery stores, supermarkets, shopping malls and completely new food distribution channels. Hypermarkets and discount stores controlled by foreign chains changed the image of FMCG distribution in Poland (Reysowski, 2008).

However, it is important to note that in Poland small private retailers already existed, even during the communist period along with state-owned chains, or were established during transition. These retailers, typically family-owned stores, formed the core of a new private sector which proved to be flexible and agile in adapting to changing circumstances and grew rapidly during periods of economic uncertainty when other sectors faced less stable futures (Waters, 1999; Lorentz et al., 2007). Poland was among the first of the Central and Eastern European countries to remove trade barriers and allowed Foreign Direct Investment (FDI) in both the retail and agri-food sectors. This in turn attracted inflow of capital and knowledge. Poland was within the first wave of retail modernisation among post-communist countries (Dries et.al., 2004), so the maturity and convergence towards modernity, which was not much different from 'western' retail, was dynamic. AT Kearney (2016) noted that the Polish retail market has already passed the maturity stage and reinforces observations of Karasiewicz and Nowak (2010) that indicated a period of market consolidation and increased competition in the early 2000s. Poland was the second most internationalised market in Europe behind France (Coe, 2004), and fierce competition between retail chains also enhanced cooperation among SC members and adoption of Western management practices.

4.2. Cooperation and management practices

Economic power, which had previously been concentrated in manufacturers and the bureaucracy of obligatory intermediation, clearly moved to the retailers, similar to the changes that occurred in UK grocery retail supply chains in the 1970s (Fernie, Grant, 2008). Growth of foreign retail was associated with a transfer of not only capital, but also knowledge, business culture, practices and connections of Polish producers into the global supply chains.

Replication of Western structures and practices was typical in the early stage of retail internationalisation (Michalak, 2001). Later, as the market matured foreign retail companies adjusted their practices to local settings while at the same time Polish players adapted Western tools, techniques and structures (Páll, Hanf, 2013). Mehta et al. (2001) investigated the transferability of management practices across cultures in marketing channels and examined leadership styles, cooperation, and channel member performance across three divergent national cultures, the USA, Finland and Poland. They found that adaptation of leadership style to reflect cultural differences is necessary to manage or gain cooperation in international marketing channels; that existing marketing channel structures and changes occurring, in particular Poland, may affect channel member responses to leadership styles; and building cooperation in international marketing channels may take time in some countries as old attitudes and behaviours need to disappear before new ones that promote rather than inhibit cooperation can emerge.

Management practices in Poland involved lean techniques which aim at cost and inventory reduction across the SC as well as agile SCs that are concerned with customer responsiveness, people and information, cooperation within and between firms in order to better meet customer needs and gain competitive advantage (Van Hoek et al., 2001; Kisperska-Moron, Swierczek, 2009). Kisperska-Moron and Swierczek (2009) note that integration in an agile supply chain means cooperation between buyers and suppliers, joint product development, common systems and shared information. They further argue that such cooperation among business partners is a vital factor for agility of firms in Polish supply chains in Poland; i.e. a firm's positive attitude towards cooperation with suppliers and customers also enhances efforts to build agility in the entire supply chain.

Together with foreign retailers, a focus on quality improvement appeared, starting from the introduction of private quality standards (Michalak, 2011). Such rising quality requirements are key factors for food supply chain redesign and Hanf and Pieniadz (2007) argue that food supply chains proceed through hierarchical strategic networks coordinated by powerful focal firms, which require strong leadership. These firms choose a quality strategy and employ chain quality management concepts by exerting managerial discretion to achieve super-ordinate network aims. Hanf and Pieniadz (2007) tested these concepts in the Polish dairy market and found firms' activities are generally aligned with current market opportunities for optimal enterprise performance. They also determined that manufacturers of well-branded products create an advanced network structure that has a focal company exercising quality management.

Further changes were related to redesign of logistics systems, foreign retailers closely cooperate with third-party logistics (3PLs) service providers, however small and medium-sized enterprises (SMEs) still lag behind in the use of modern logistics (Jałowiecki et.al., 2014).

4.3. Barriers and enablers in cooperation

Fischer et al. (2008) examined inter-enterprise relationship situations in five different European Union (EU) countries, Germany, UK, Ireland, Finland, and Poland, for two different commodities (meat and cereals) and two different chain stages (upstream: farmers-processors and downstream: processors-retailers). A corollary study investigated consumer trust in food, which has become an important factor for the stability of the food sector, and found that a prerequisite for the ability to communicate the trustworthiness of food to consumers is the creation, maintenance, and communication of trust between companies across the entire food value chain (Fritz, Fischer, 2007). Lack of trust, however, together with low level of available capital and slow modernisation were listed as barriers for consolidation among small retailers. Even in face of the competition, small shop owners were still reluctant to cooperate (Michalak, 2011). Trust was the major issue, as in Poland there was improvement in IT accessibility and usage (Piotrowicz, 2015), thus there are tools for cooperation available. Despite the problems competition slowly pushed small retailers towards consolidation and cooperation, which was often supported by wholesalers. Wholesalers, as powerful market players, acted as initiators and moderators of such cooperation (Domański, 2011).

Fischer et al. (2008) found that a high correlation exists between good communication, equal power distribution between business partners, and the development of personal bonds, indicating these factors can be collectively regarded as part of the relationship building process and should be developed together to enhance inter-enterprise relations. The most important contributor to the sustainability of a business relationship is good communication, which involves adequate communication frequency and high information quality, and was found particularly relevant in Finland and Poland. Such formal relationships appear preferred by long term-oriented businesses or those which operate in quality-oriented markets.

In essence the Polish experience, while temporally lagging western European countries such as Finland, appears to be following suit as regards the importance of cooperation in the retail grocery sector. However, differences still exist. Managerial practices and tools for cooperation, such as IT, are widely available, the tangible retail (stores, malls), IT (internet access, bank payment systems) and logistics (roads, railways and warehouses) infrastructures are modernised, reaching or even exceeding Western standards, while the societal changes are much slower. This includes low trust, hesitation or even aversion to close cooperation, which likely are grounded in the pre- and early transition periods, when institutions, norms and enforcements mechanisms in business were very weak.

Conclusions

This study of cooperation in Finnish grocery retailing finds that increased information sharing and IT integration, together with SCC, provides increased supply chain effectiveness for all firms involved. The most important enablers for cooperation are trust and cooperative culture in conjunction with technology. On the other hand, the most important barrier identified is the unwillingness to share information or ultimately to cooperate. This finding highlights the importance of cooperation acceptance among firm personnel and managers, as well as the importance of extensive information sharing. These findings support previous literature regarding enablers and barriers, especially trust issues prominent in this case (Barratt, Oliveira, 2001; Simatupang, Sridharan, 2005).

The process of implementing cooperative approaches for a range of activities and building supportive IT capabilities appears to be a gradual process with a limited beginning and expansion later into areas where and when the firms experienced a need for it, and this finding corroborates the literature as well (Skjoett-Larsen et al., 2003; Danese, 2011). Furthermore, the findings also suggest that the centralization of forecasting and replenishment to the wholesaler, together with the sharing of forecast data both upstream and downstream in the supply chain, i.e. almost a vertically integrated approach (Hingley et al., 2011) can be a very powerful method of increasing supply chain efficiency. Finally, this study gives insights into the complex processes and the nature of the cooperation in this supply chain.

The results of this paper will also be of interest to practitioners looking for ideas and cases of practical implementation for deep and strategic supply chain cooperation. The main practical implications highlight the importance of information sharing and strategic alignment on successful cooperation. A societal impact of this study can also be identified, as one of the results of increased forecasting accuracy means less spoilage, therefore resulting in less waste and pollution.

As with all research there are several limitations to this study. The one supply chain case and the small sample means the findings are not applicable to other supply chains or industries. Nevertheless, this study provides interesting points of departure for further research. Future studies should seek to quantitatively verify the effects of centralized forecasting and replenishment for several actors in the supply chain both upstream and downstream. Also, the delimitation to not include suppliers of WS warrants additional studies from an upstream multi-echelon viewpoint. The section focused on Polish retail is based on secondary sources in English language, thus further empirical research in the Polish context could validate future developments for Poland.

References

- Alftan, A., Kaipia, R., Loikkanen, L. and Spens, K. (2015), Centralised grocery supply chain planning: improved exception management, *International Journal of Physical Distribution and Logistics Management*, 45(3), pp. 237–259.
- AT Kearney (2016), *The Global 2016 Retail Development Index, Global Retail Expansion at a Crossroads*.

- Attaran, M. and Attaran, S. (2007), Collaborative supply chain management: The most promising practice for building efficient and sustainable supply chains, *Business Process Management Journal*, 13(3), pp. 390–404.
- Barratt, M. and Oliveira, A. (2001), Exploring the experiences of cooperative planning initiatives, *International Journal of Physical Distribution and Logistics Management*, 31(4), pp. 266–289.
- Büyükožkan, G. and Vardaloğlu, Z. (2012), Analyzing of CPFR success factors using fuzzy cognitive maps in retail industry, *Expert Systems with Applications*, 39(12), pp. 10438–10455.
- Coe, N.M. (2004), The internationalisation/globalisation of retailing: towards an economic – geographical research agenda, *Environment and Planning A*, 36, pp. 1571–1594.
- Danese, P. (2011), Towards a contingency theory of cooperative planning initiatives in supply networks, *International Journal of Production Research*, 49(4), pp. 1081–1103.
- Dawson, J. and Henley, J. (2000), Internationalisation of hypermarket retailing in Poland, *Journal of East-West Business*, 5(4), pp. 37–52.
- Dey, I. (1993), *Qualitative data analysis: A user friendly guide for social scientists*, Routledge, London.
- Domański, T. (2011), Retail in Poland – New Challenges and New Strategies, *European Retail Research*, Springer, pp. 141–180.
- Dries, L., Reardon, T. and Swinnen, J.F. (2004), The rapid rise of supermarkets in Central and Eastern Europe: Implications for the agrifood sector and rural development, *Development Policy Review*, 22, pp. 525–556.
- Ehrenthal, J.C.F., Honhon, D. and van Woensel, T. (2014), Demand seasonality in retail inventory management, *European Journal of Operational Research*, 238(2), pp. 527–539.
- Elkady, G., Moizer, J. and Liu, S. (2014), A Decision Support Framework to Assess Grocery Retail Supply Chain Cooperation: A System Dynamics Modelling Approach, *International Journal of Innovation and Technology Management*, 5(4), pp. 232–238.
- Ellram, L.M. (1996), The use of the case study method in logistics research, *Journal of Business Logistics*, 17(2), pp. 93–138.
- Fawcett, S.E., Wallin, C., Allred, C., Fawcett, A.M. and Magnan, G.M. (2011), Information technology as an enabler of supply chain cooperation: A dynamic-capabilities perspective, *Journal of Supply Chain Management*, 47(1), pp. 38–59.
- Fernie, J. and Grant, D.B. (2008), On-shelf availability: The case of a UK grocery retailer, *International Journal of Logistics Management*, 19(3), pp. 293–308.
- Fischer, C., Hartmann, M., Reynolds, N., Leat, P., Revoredo-Giha, C., Henchion, M. and Gracia, A. (2008), *Agri-food chain relationships in Europe – empirical evidence and implications for sector competitiveness*, Proceedings of the 12th Congress of the European Association of Agricultural Economists (EAAE), Innsbruck, August 26–29, pp. 1–12.
- Fritz, M. and Fischer, C. (2007), The role of trust in European Food Chains: Theory and Empirical Findings, *International Food and Agribusiness Management Review*, 10(2), pp. 141–164.
- Grant, D.B. (2005), The transaction – relationship dichotomy in logistics and supply chain management, *Supply Chain Forum: An International Journal*, 6(2), pp. 38–48.
- Halldórsson, Á. and Aastrup, J. (2003), Quality criteria for qualitative inquiries in logistics, *European Journal of Operational Research*, 14, pp. 321–332.
- Hanf, J.H. and Pieniadz, A. (2007), Quality management in supply chain networks – the case of Poland, *International Food and Agribusiness Management Review*, 10(4), pp. 102–128.
- Hingley, M., Lindgreen, A., Grant, D.B. and Kane, C. (2011), Using fourth party logistics management to improve horizontal collaboration among grocery retailers, *Supply Chain Management: An International Journal*, 16(5), pp. 316–327.
- Jałowicki, P., Woźniakowski, T. and Ząbkowski, T. (2014), Some remarks on logistics investments among Polish food processing and agribusiness companies, *Information Systems in Management*, 3, pp. 122–133.

- Kaipia, R., Dukovska-Popovska, I. and Loikkanen, L. (2013), Creating sustainable fresh food supply chains through waste reduction, *International Journal of Physical Distribution and Logistics Management*, 43(3), pp. 262–276.
- Kaipia, R., Korhonen, H. and Hartiala, H. (2006), Planning nervousness in a demand supply network: An empirical study, *International Journal of Logistics Management*, 17(1), pp. 95–113.
- Karasiewicz, G and Nowak, J. (2010), Looking back at the 20 years of retailing change in Poland, *The International Review of Retail, Distribution and Consumer Research*, 20, pp. 103–117.
- Kim, D. and Lee, R.P. (2010), Systems Cooperation and Strategic Cooperation: Their Impacts on Supply Chain Responsiveness and Market Performance, *Decision Sciences*, 41(4), pp. 955–981.
- Kisperska-Moron, D. and Swierczek, A. (2009), The agile capabilities of Polish companies in the supply chain: An empirical study, *International Journal of Production Economics*, 118, pp. 217–224.
- Kumar, G. and Banerjee, R.N. (2012), Cooperation in supply chain: An assessment of hierarchical model using partial least squares (PLS), *International Journal of Productivity and Performance Management*, 61(8), pp. 897–918.
- Lorentz, H., Wong, C.Y. and Hilmola, O.-P. (2007), Emerging distribution systems in central and eastern Europe: Implications from two case studies, *International Journal of Physical Distribution and Logistics Management*, 37(8), pp. 670–697.
- Matopoulos, A., Vlachopoulou, M., Manthou, V. and Manos, B. (2007), A conceptual framework for supply chain cooperation: Empirical evidence from the agri-food industry, *Supply Chain Management: An International Journal*, 12(3), pp. 177–186.
- Mehta, R., Larsen, T., Rosenbloom, B., Mazur, J. and Polska, P. (2001), Leadership and cooperation in marketing channels: A comparative empirical analysis of the USA, Finland and Poland, *International Marketing Review*, 18(6), pp. 633–666.
- Michalak, W. (2001), Retail in Poland: An assessment of changing market and foreign investment conditions, *Canadian Journal of Regional Science*, 24, pp. 485–504.
- Páll, Z. and Hanf, J.H. (2013), A multi-perspective analysis of food retail internationalization—insights from foreign retailers on the development of the Hungarian and Eastern European markets, *Management and Marketing*, 8, p. 593.
- Panahifar, F., Byrne, P. and Heavey, C. (2014), ISM analysis of CPFIR implementation barriers, *International Journal of Production Research*, 50(18), pp. 5255–5272.
- Patton, M.Q. (2002), *Qualitative research and evaluation methods (3rd ed.)*, Sage Publications, Thousand Oaks.
- Piotrowicz, W. (2015), Information technology and systems in the Visegrád group of countries (Czech Republic, Hungary, Poland, and Slovakia): A literature review, *Journal of Global Information Technology Management*, 18(2), pp. 77–93.
- Ralston, P.M., Richey, G.R. and Grawe, S.J. (2017), The past and future of supply chain collaboration: A literature synthesis, *International Journal of Logistics Management*, 28(2), pp. 508–530.
- Reysowski, M. (2008), Food retailing transformation in Poland in years 1990–2006, *International Journal of Emerging and Transition Economics*, 1(1), pp. 77–91.
- Simatupang, T.M. and Sridharan, R. (2005), An integrative framework for supply chain cooperation, *International Journal of Logistics Management*, 16(2), pp. 257–274.
- Skjoett-Larsen, T., Thernøe, C. and Andresen, C. (2003), Supply chain cooperation: Theoretical perspectives and empirical evidence, *International Journal of Physical Distribution and Logistics Management*, 33(6), pp. 531–549.

- Soosay, C.A. and Hyland, P. (2015), A decade of supply chain cooperation and directions for future research, *Supply Chain Management: An International Journal*, 20(6), pp. 613–630.
- Taylor, D.H. and Fearne, A. (2009), Demand management in fresh food value chains: A framework for analysis and improvement, *Supply Chain Management: An International Journal*, 14(5), pp. 379–392.
- Trautrimis, A., Grant, D.B. and Wong, C.Y. (2012), The interaction of human resources and managerial systems as they affect in-store replenishment operations, *Supply Chain Forum: An International Journal*, 13(2), pp. 56–66.
- Van Hoek, R.I., Harrison, A. and Christopher, M. (2001), Measuring agile capabilities in the supply chain, *International Journal of Operations and Production Management*, 21(1–2), pp. 126–147.
- Waters, C.D.J. (1999), Changing role of the retail sector in Poland during a period of economic transition, *International Journal of Retail and Distribution Management*, 27(8), pp. 319–327.
- Yin, R.K. (2009), *Case Study Research: Design and Methods (4th ed.)*, Sage Publications, Thousand Oaks.

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