South African Journal of Economic and Management Sciences
ISSN: (Online) 2222-3436, (Print) 1015-8812

Sustainable supply chain integration: An exploration of South African fast-moving consumer goods manufacturers

Authors:
Sa'diyah Ebrahim[1]
Wesley Niemann[1]
Theuns Kotzé[1]

Affiliations:
[1]Department of Business Management, Faculty of Economic and Management Sciences, University of Pretoria, Pretoria, South Africa

Corresponding author:
Wesley Niemann,
wesley.niemann@up.ac.za

Dates:
Received: 31 May 2021
Accepted: 01 Mar. 2022
Published: 23 May 2022

How to cite this article:
Ebrahim, S., Niemann, W. & Kotzé, T., 2022, 'Sustainable supply chain integration: An exploration of South African fast-moving consumer goods manufacturers', *South African Journal of Economic and Management Sciences* 25(1), a4192. https://doi.org/10.4102/sajems.v25i1.4192

Background: Manufacturers of fast-moving consumer goods (FMCG) are facing new challenges that compel them to outperform their competitors economically, and to consider environmental and social impacts. Customer demands regarding sustainability are channelled upstream to these manufacturers through retailers. This resulted in manufacturers being very conscious of the sustainability of their production processes, as well as their packaging. To that extent, FMCG manufacturers are encouraged to integrate sustainability, with other supply chain partners, to improve sustainability performance across the supply chain.

Aim: The purpose of this study is to explore the extent to which FMCG manufacturers in South Africa apply sustainability to their supply chain integration.

Setting: The study was conducted among South African FMCG manufacturers.

Method: The study applied a generic qualitative research design. Altogether 12 semi-structured interviews were conducted with middle to senior supply chain managers.

Results: Having a clear sustainability focus, supported by leadership and embedded into the corporate culture, is key to integrating sustainability internally and thus improving the sustainability performance. The findings indicate that customers do not pressure firms to adhere to their sustainability expectations. Instead, sustainability expectations are driven internally. Firms find it difficult to align the three sustainability aspects equally, due to the local variables and context in which they operate. Therefore, economic sustainability is considered most important and firms act on environmental and social sustainability aspects within strict economic constraints.

Conclusion: Academically, the study adds to the literature by creating an understanding of sustainable supply chain integration (SSCI) from a South African perspective. For practitioners, the study encourages firms to collaborate with supply chain partners on sustainability, as this opens up opportunities to create shared value through joint sustainability problem-solving.

Keywords: sustainable supply chain management; sustainable supply chain integration; fast-moving consumer goods industry; generic qualitative research; South Africa.

Introduction

Firms face new obstacles, which not only oblige them to outperform their competitors economically, but to also consider environmental and social responsibilities (Azevedo et al. 2017:2271). Stakeholders in firms are increasingly insisting that these firms address the social, environmental and economic issues caused by business operations; thus, sustainability is highly relevant to businesses (Carter & Easton 2011:46–47). Supply chain managers are in the position to have positive or negative effects on environmental sustainability and social performance through decisions such as choosing suppliers and deciding where to locate factories (Azevedo et al. 2017:2271). Sustainability can be driven through the implementation of sustainable supply chain management (SSCM), practices which will have a positive impact on performance (Wolf 2011:222). SSCM is:

> [*T*]he strategic, transparent integration and achievement of a firm's social, environmental, and economic goals in the systemic coordination of key inter-organisational business processes for improving the long-term economic performance of the individual company and its supply chains. (Carter & Rogers 2008:368; Seuring & Müller 2008:1700)

Manufacturing businesses should integrate other partners in the supply chain and develop long-term business relationships with first- and second-tier customers and suppliers in SSCM activities to improve the impact of SSCM (Gold, Hahn & Seuring 2013:16–17).

The concept 'sustainable supply chain integration' (SSCI) contains the elements of SSCM such as the integration of sustainability with supply chain partners, and thus falls under the umbrella of SSCM. Sustainable supply chain integration (SSCI) is the extent to which a manufacturer collaborates strategically with its supply chain partners and collaboratively manages intra-organisational and inter-organisational sustainability systems (Wolf 2011:223). This implies that firms strategically collaborate to improve the environmental, social and economic effects of their internal organisational processes, and enhance the effect of their suppliers' and customers' processes, thereby improving the overall supply chain sustainability performance (Gimenez, Sierra & Rodon 2012:150).

Manufacturers of fast-moving consumer good (FMCG) primarily deal with producing, distributing and marketing goods regularly purchased by consumers (Economy Watch 2010). Consumers of FMCGs are increasingly concerned about the products they purchase. They need information about the origin of the product and the assurance that the product complies with a broad array of quality and ethical considerations (Freidberg 2017:1390). The main challenge to these firms wanting to address sustainability, is the extension of sustainable strategies and practices to other supply chain partners (Sancha, Gimenez & Sierra 2016:1934). Stakeholders do not differentiate between all the different actors and their roles in the supply chain (Seuring & Gold 2013:1). Therefore, a FMCG manufacturing firm's sustainability performance may be tainted by other supply chain partners acting unethically (Sancha et al. 2016:1934).

There are two reasons why supply chain management (SCM) has a pivotal responsibility in attaining sustainability. Firstly, to acquire the resources necessary for producing goods and services, SCM has a profound effect on the environment (Dubey, Gunasekaran & Ali 2015:120). This factor addresses the significance of integrating sustainability into internal SCM practices (Wolf 2011:221). Secondly, the buying practices of a firm could affect a supplier's capability to better its sustainability. Firms could influence smaller supply chain members to aim for good environmental and social standards by using their purchasing power (Laari et al. 2016:1961). This factor highlights the importance of integrating sustainability into external SCM activities with supply chain partners (Wolf 2011:221). Additionally, manufacturers could integrate sustainability goals and practices with their suppliers and customers, thereby better dealing with the impact of stakeholder influence on the firm (Seuring & Gold 2013:2). The application of integration to sustainability may improve the understanding of the actions which enhance supply chain sustainability and evaluate the effect of such actions on the sustainability performance (Seuring & Gold 2013:5).

While many studies investigated singular activities related to SSCM, such as corporate social responsibility in the supply chain (Hsueh 2015:84–95; Quarshie, Salmi & Leuschner 2016:82–97) and sustainable transportation (Maheshwari et al. 2016:371–393; Zhao 2010:236–243), only a few studies focused on all three aspects of sustainability (environment, economic and social) in a firm's sustainability strategy and its extension to supply chain partners, as this is still quite novel (Dubey et al. 2017:337). This represents a disconcerting gap in the body of knowledge, because such a holistic view of SSCM has the potential to improve supply chain sustainability and to evaluate the outcome of sustainability practices with regards to sustainability performance (Wolf 2011:222). Integration improves sustainability performance in the supply chain (Touboulic & Walker 2015:178).

As far as could be determined, no studies applied the concept of sustainability to supply chain integration in the context of a developing country such as South Africa. Wolf (2011:233) conducted a similar study in the German manufacturing industry which is highly developed. By replicating this study in the South African manufacturing industry, which is far less developed, it can be determined whether the findings still hold in emerging markets. Replicating and expanding upon research, conducted by Wolf (2011:231), in a different industry and country, will help to refine the model introduced by Wolf (2011:231).

The purpose of this generic qualitative study is to explore the extent to which FMCG manufacturers in South Africa apply sustainability to supply chain integration. The study replicates and expands upon previous research by Wolf (2011:221–235), by determining the transferability of his SSCI model (Wolf 2011:231) to the South African FMCG manufacturing industry through interviewing senior supply chain managers in the industry.

The study aims to answer the following questions:

1. To what extent do FMCG manufacturing firms incorporate sustainability into their internal supply chain strategy?
2. How do FMCG manufacturing firms include sustainability in their integration with external downstream supply chain partners?
3. How do FMCG manufacturing firms include sustainability in their integration with external upstream supply chain partners?
4. To what extent does the supply chain integration with supply chain partners contribute to sustainability performance?

This study makes three specific contributions to theory and practice. Firstly, it adds to SSCM literature by evaluating the transferability of the conceptual model, developed by Wolf (2011:231), to the FMCG manufacturing industry in South Africa, providing a developing-country context. This is important because it addresses the limitations found by Wolf (2011:231), by collecting information from a different industry and country that could help refine the model. Secondly, it focused on all three aspects of sustainability, providing a holistic view of SSCM. This addresses the concerns that most studies focus on environmental or economic aspects of sustainability, but neglect social aspects (Dubey et al. 2017:337). Thirdly, it supports supply chain practitioners with an

improved understanding of the requirements of SSCI which could aid supply chain practitioners to improve sustainability performance (Wolf 2011:232).

Literature review

The South African fast-moving consumer good industry

Fast-moving consumer goods are common high-volume goods, such as food or cleaning supplies, frequently purchased by the average consumer (The Logistics & Supply Chain Management Society 2014). Examples of FMCGs manufacturers include Uniliver, Colgate-Palmolive and Nestle. In the FMCG manufacturing industry, customer demands regarding sustainability are channelled upstream through retailers to FMCG manufacturers (Foerstl et al. 2015:81). This resulted in FMCG manufacturers being very aware of the sustainability of their production processes, as well as their packaging (Foerstl et al. 2015:81).

South Africa remains one of Southern Africa's most competitive economies with a global competitive index of 4.32/7 for 2017–2018, which ranked 61st out of the 137 countries compared (World Economic Forum 2018:13). However, South Africa's economic growth has lost momentum, with a projected annual GDP growth of 1.742% predicted for the years 2020–2021 (World Bank 2018). Challenges such as weak export demand, unsatisfactory commodity prices, coupled with domestic issues, such as political uncertainty, high unemployment, labour strikes and drought, create an unfriendly business environment for FMCG manufacturers (FoodBev SETA 2017:15; PricewaterhouseCoopers 2016:73–74).

South Africa's population is expected to grow from 57.39 million in 2018, to 64.57 million and 72.75 million in 2030 and 2050 (World Population Review 2018). This presents several opportunities and issues as FMCG manufacturers must upscale their capacities and capabilities to provide for the growing population. Furthermore, South Africa's unemployment rate is expected to rise from 27.9% in 2018 to 35.3% in 2023 (South Africa Data Portal 2018; StatsSA 2022). This is disconcerting to FMCG manufacturers, because it means that they must reduce the costs of their products to a level that the majority of unemployed people can also afford.

Sustainability

Sustainability is defined as meeting current needs without hindering the capability of future generations to meet their own needs (International Institute for Sustainable Development n.d.). This definition may be extended by adopting an equivalent view of sustainability, 'the triple bottom line'. This concept highlights the importance of analysing the impact of a firm's decisions in three central sustainability areas, namely environmental, economic and social sustainability (Christopher 2016:269). The economic aspects of sustainability include variables that handle financial performance, including profitability and cash flow (Hall 2011:5). The environmental aspects of sustainability include measuring natural resources and the influences of the long-term viability and continuity of the environment, for example, measuring the carbon emissions associated with producing goods (Hall 2011:5). The social aspect of sustainability includes the social dimensions of a community or geographic region. Examples pertaining to businesses include equity and working conditions (Christopher 2016:269).

Supply chain sustainability is concerned with two mutually supportive objectives: achieving the long-term viability and continuity of the firm, while concurrently contributing to the long-term well-being of society (Christopher 2016:270). Furthermore, the term 'sustainable supply chain' is described as a supply chain which constantly performs well regarding all three aspects of sustainability (Pagell & Wu 2009:36–56). For a firm to have a truly sustainable supply chain, it must genuinely implement business practices, strategies and measures that fully support the three aspects of sustainability (Silvestre 2015:172). If a single part of the supply chain fails to implement and measure one aspect of sustainability, then that chain is considered unsustainable (Silvestre 2015:172).

Overall improved firm performance could be viewed as a result of implementing and incorporating sustainability into business strategy and practices (Meixell & Luoma 2015:70). Thus, effective SCM may improve organisational effectiveness, competitiveness and customer service levels (Azevedo et al. 2017:2254). The bulk of the literature, regarding SSCM, focuses primarily on the environmental and economic aspects of sustainability (Dubey et al. 2017:337). Several studies focused on the environmental aspect of sustainability in the supply chain, such as Zhu and Sarkis (2004:265–289), who evaluated the relationships between specific green SCM practices and firm performance in the Chinese manufacturing industry. Fahimnia, Sarkis and Davarzani (2015:101–114) found that the green SCM field is growing and maturing. Furthermore, Zhao et al. (2017:1085–1097) present a multi-objective optimisation model for green SCM plans that minimise risk. A literature review by Dubey et al. (2017:337) found that researchers have not unequivocally studied and measured social sustainability aspects.

There are growing concerns regarding sustainability among stakeholders of FMCG manufacturing firms (Freidberg 2017:1390). Large and popular firms may increasingly face substantial pressure from the end consumer to improve their sustainability performance, as opposed to smaller manufacturers or suppliers further upstream in the supply chain (Lee et al. 2014:39–51). Powerful buyers have the potential to dictate that suppliers comply with the buyer's sustainability policies (Laari et al. 2016:1961).

Supply chain integration

To address the increasing sustainability concerns of stakeholders, firms need to expand their concentrations outside their internal operations to external supply chain partners, such as suppliers and customers (Laari et al.

2016:1960). All firms are linked to their external supply chain partners by material, financial and information flows (Seuring & Müller 2008:1699–1710). Production input and other resources, used for the firm's operations and economic activity, have environmental effects that are not carried by the end users, and thus cannot be handled within the boundaries of only one firm. Instead, it is necessary that all partners (internal and external) in the supply chain participate in sustainability initiatives and practices (Laari et al. 2016:1961).

Supply chain integration is 'the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra- and inter-organisation processes' (Flynn, Huo & Zhao 2010:59). The main idea behind supply chain integration is that core business processes are streamlined within and between firms. This streamlining will result in competitive advantages for the firms through improved customer service and value creation (Leuschner, Rogers & Charvet 2013:34–57). The degree of upstream integration with suppliers, or downstream integration with customers, differs considerably between various firms which results in different capabilities and performance (Ataseven & Nair 2017:253). It is important to highlight that effective supply chain integration requires that firms have a well laid-out strategic plan and commitment from senior management (Beheshti et al. 2014:28).

There are two dimensions to supply chain integration – internal and external integration. While internal integration identifies the need for a manufacturing firm's departments and functions to operate in an integrated manner, external integration identifies the significance of creating close, cooperative and interactive bonds with suppliers and customers. Both perspectives are vital to enhance the value of the firm's supply chain (Flynn et al. 2010:59).

Internal integration

Internal integration refers to the synchronisation and collaboration of a firm's internal organisational information, processes, and activities (Chang et al. 2016:283). It calls for integrated activities such as joint planning, information sharing and cross-functional teams in which all functions work together in an integrated manner (Flynn et al. 2010:60). Internal integration correlates with firm performance because it tears down the functional barriers and promotes cooperation between different functions/departments to meet the needs of a firm's customers (Flynn et al. 2010:59–60). An example of internal integration in the FMCG manufacturing industry would include all functional barriers in a firm being removed, as all functional areas must be linked, using the same information technology systems and all functional areas must work together to achieve the same end goal.

External integration

External integration is the extent to which a manufacturer creates a partnership with its external suppliers and customers to establish structures for collaborative inter-organisational strategies, activities and processes (Ataseven & Nair 2017:253). The integration of a firm with suppliers refers to:

> [C]oordination and information sharing activities with key suppliers that provide the firm with insights into suppliers' processes, capabilities and constraints, ultimately enabling more effective planning and forecasting, product and process design, and transaction management. (Schoenherr & Swink 2012:100)

The ways in which firms relate with their suppliers changed significantly. Since manufacturing firms are increasingly more focused on their core competences, their dependence on their strategic suppliers is greater (Prajogo & Olhager 2012:516). Trends in supplier integration now call for firms to build long-term relationships with suppliers rather than transactional short-term contracts. This helps the firm's suppliers to better understand and anticipate the firm's needs (Flynn et al. 2010:60). By creating a good understanding of a manufacturing firm's operations, suppliers have the potential to attain improved levels of customer service, which also helps the manufacturing firm achieve its own higher levels of customer service (Flynn et al. 2010:60).

Integration with customers refers to:

> [C]lose collaboration and information sharing activities with key customers that provide the firm with strategic insights into market expectations and opportunities, ultimately enabling a more efficient and effective response to customer needs. (Schoenherr & Swink 2012:100)

Customer integration considers the demand-side collaboration, cooperation and coordination activities of a firm with its customers (Ataseven & Nair 2017:253). Integrating closely with customers allows a manufacturing firm to offer opportunities to enhance demand-information accuracy, reducing the manufacturing firm's production planning time and the risk of inventory obsolescence. This allows the manufacturing firm to be more receptive to customer requirements, as a result costs are cut and customers are satisfied (Flynn et al. 2010:60).

Supply chain integration and sustainability performance

Integrating with supply chain partners on sustainability has the potential to positively impact the overall sustainability performance (Wolf 2011:229). This is because supply chain integration allows for all supply chain partners to share sustainability information and best practices, understand sustainability expectations, and work together to solve sustainability problems (Wolf 2011:229). To improve sustainability performance, all partners in the supply chain must collaborate on sustainability initiatives and practices (Laari et al. 2016:1961). Given that stakeholders are increasingly insisting that firms address the social, environmental and economic issues caused by firm operations, sustainability is highly relevant to all firms (Carter & Easton 2011:46–47). Manufacturing firms should therefore integrate with other partners in the supply chain regarding SSCM activities to further improve supply chain sustainability performance (Gold et al. 2013:16–17; Seuring & Gold 2013:1).

Sustainable supply chain management

Firms should encourage effective communication across the supply chain, as a method to share the same sustainability standards with all the other firms involved (Azevedo et al. 2017:2254). Cooperation between supply chain partners is 'the only way' for firms to enhance the competitiveness of the supply chain, while simultaneously reducing sustainability issues (Seuring 2004:1059). When SCM practices and activities include equally the three aspects of sustainability (social, economic and environment), the term SSCM is used (Mathivathanan, Kannan & Haq 2018:286). Sustainable supply chain management is defined as the voluntary integration of the sustainability aspects with important inter-organisational business systems to create a coordinated supply chain to effectively manage the material flows, information flows and financial flows associated with the purchase, production and distribution of goods and services to fulfil the profitability and stakeholder requirements, competitiveness and supply chain resilience of the firm (Ahi & Searcy 2013:339). It is important to note that Wolf (2011:223) developed a unique concept called SSCI. This concept still contains the elements of SSCM, such as the collaboration with supply chain partners, and the focus on sustainability, and thus still falls under the umbrella of SSCM. Wolf's (2011:223) concept of SSCI is presented in the following section.

Sustainable supply chain integration

As far as could be determined, Wolf (2011:221–235) is the only researcher who has specifically developed a model for SSCI. Therefore, literature on the topic is limited. SSCI is defined as the extent to which a manufacturer collaborates strategically with its supply chain partners and collaboratively manages intra-organisational and inter-organisational sustainability systems (Wolf 2011:223). The objective is to attain environmental, economic and social sustainability by integrating the flow of products, services, communication, finances and choices to deliver the most value to different stakeholders (Wolf 2011:223). A model of SSCI is illustrated in Figure 1, followed by a brief discussion of the requirements of each aspect of the model.

Internal sustainable supply chain integration

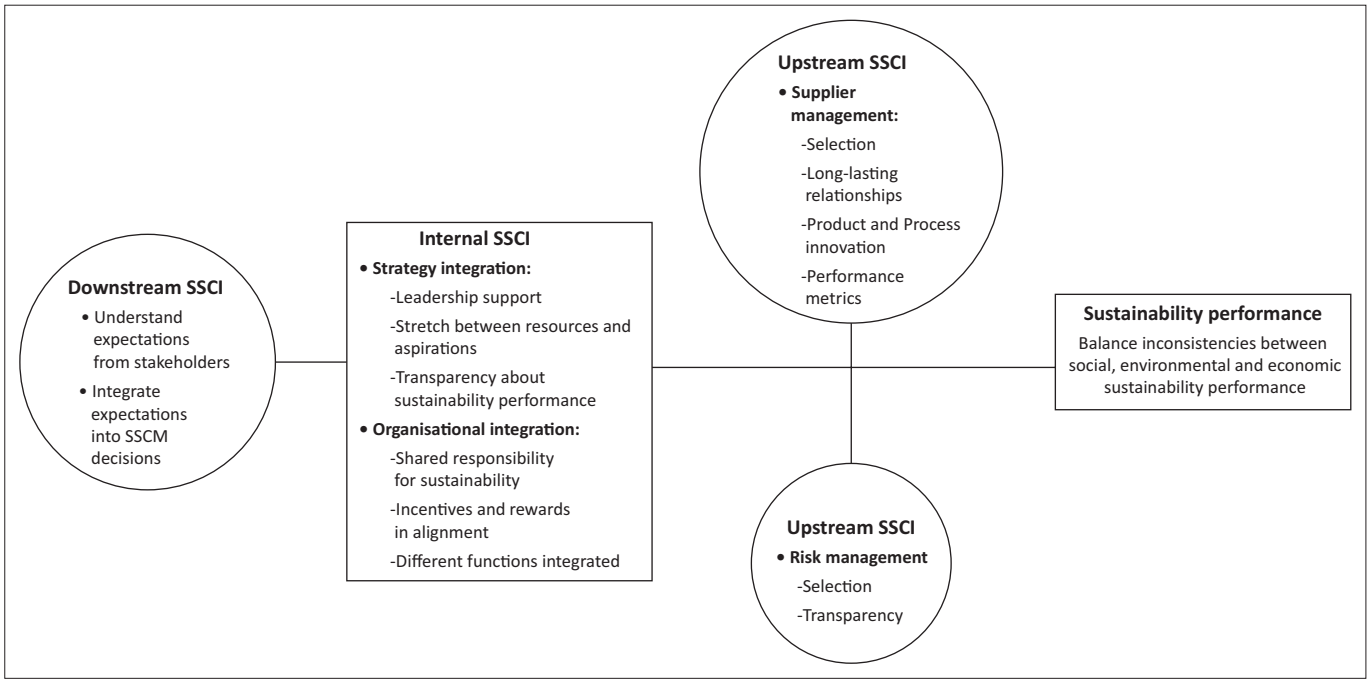
To ensure strategy integration, leadership support is an important element to achieve effective sustainability strategies. This support may at times compensate for unclear sustainability goals (Wolf 2011:229–230). Wolf (2011) noted that:

> [S]ustainability strategies are most efficient when they create a strong stretch between what a firm can actually do in terms of existing resources and its aspirations. High aspirations appear to support and motivate employees to fully tap their potential. (p. 230)

Transparency, regarding sustainability performance metrics in order to measure sustainability performance, is needed. To ensure that sustainability is integrated internally, functional silos within the firm must be removed and responsibility for sustainability must be shared across functional lines. In addition, sustainability procedures and practices should also be integrated across functional lines. Performance assessment should be tied to sustainability performance assessment (Wolf 2011:230).

External sustainable supply chain integration

Firms are under considerable pressure from external stakeholders to be sustainable, customers specifically



Source: Wolf, J., 2011, 'Sustainable supply chain management integration: A qualitative analysis of the German manufacturing industry', *Journal of Business Ethics* 102(2), 221–235. https://doi.org/10.1007/s10551-011-0806-0

SSCI, sustainable supply chain integration.

FIGURE 1: A model of sustainable supply chain integration.

(Foerstl et al. 2015:81). Yet, the perceived pressure from stakeholders is not enough for firms to be sustainable. To ensure that sustainability is integrated externally, with downstream supply chain partners, the firm must first understand the nature and range of sustainability expectations of stakeholder groups. The firm must also integrate the information gathered from stakeholder sustainability expectations into SSCM strategy development and decision making. To be more effective, the sustainability integration with upstream supply chain partners must go beyond the tier-1 level to the tier-n level. Additionally, SSCI must include not only strategic suppliers, but all of the firm's suppliers. Finally, the firm should be aware that sustainability risk management is an important part of SSCI. The firm can mitigate risks through sustainable supplier selection and full transparency of all suppliers (Wolf 2011:231).

Sustainability performance

Sustainability performance is more complex than conventional economic performance, because it considers performance on environmental and social aspects as well. Often, firms do not recognise the importance of acting on environmental and social aspects. Instead of viewing these aspects as potential opportunities, managers see environmental and social aspects as an expenditure to the firm (Wolf 2011:229). As part of sustainability performance, the firm should attempt to bring into alignment strategies or practices of the different sustainability aspects equally: environmental, economic and social. Should any discrepancies in the performance of the aspects be discovered, the firm should try to balance these out as they are of equal importance (Wolf 2011:231). The methodology that guided the study is presented in the next section.

Methodology

Research design

The study was guided by a generic qualitative research design to discover the opinions, beliefs, experiences or perceptions of people regarding a particular topic being investigated (Plano Clark & Creswell 2015:289). The data collected through semi-structured interviews allowed the researchers to expand upon the pre-existing body of knowledge by creating a thorough and detailed description of the extent to which FMCG manufacturers, with their supply chain partners, integrate sustainability, based on the opinions and the perspectives of the individual participants. Semi-structured interviews are typically used to collect data from multiple participants, using purposive sampling techniques in a generic qualitative study (Creswell 2012:218). The data collected were analysed using thematic analysis (Plano Clark & Creswell 2015:289).

Sampling

The unit of analysis for this study was FMCG manufacturers in South Africa. Twelve firms located across South Africa participated in the study. Only one individual from each participating firm was interviewed. The final sample size was based on the principle of data saturation by Guest, Bunce and Johnson (2006:74) who state where the saturation point, when participants interviewed no longer provide new themes, new insights, or new information regarding the topic being investigated, is reached. In the case of this study, 100% of the codes were identified after the eighth interview and all main themes were established. A further four interviews were conducted but did not provide any new significant data. The study used homogenous sampling, a form of purposive sampling, to select the participating firms. The inclusion criteria that guided the selection of participating firms concluded that selected firms must have operations within South Africa and must manufacture goods in one or more of the following categories: food, beverages, personal care and household cleaning. The inclusion criteria were used to ensure that selected firms had similar characteristics.

Homogenous sampling was also used to select the individual participants for the study. The individual participants for the study were selected, based on the following inclusion criteria: All individual participants were employed in FMCG manufacturing firms in middle to senior SCM roles. The participants had awareness of sustainability and supply chain strategy development and were knowledgeable, as well as experienced in their fields.

A profile of the individual participants of the study is presented in Table 1.

Data collection

Data for the study were collected through eight semi-structured telephonic interviews, three semi-structured face-to-face interviews and one semi-structured electronic mail interview. One individual from each participating firm was interviewed. Semi-structured interviews were appropriate for the study because they used open-ended questions that required free-flowing answers from participants (Creswell

TABLE 1: A profile of the study participants.

Pseudonym	Position	Gender	Firm	Length of interview (in minutes)
P1	Supply Chain Director	Female	F1	30
P2	Supply Chain Director	Male	F2	24
P3	Procurement Officer	Female	F3	31
P4	Process Engineer	Female	F4	18
P5	Supply Chain Director	Male	F5	21
P6	Supply Chain Sustainability Manager	Female	F6	54
P7	Supply Chain Development Manager	Male	F7	52
P8	Chief Procurement Officer	Male	F8	52
P9	Procurement Officer	Female	F9	25
P10	Operations Planning Manager	Male	F10	26
P11	Operations Manager	Female	F11	34
P12	Sales and Distribution Manager	Male	F12	*
			Average:	**34**

Note: * Electronic mail interview.

2012:218). The use of semi-structured interviews allowed the researchers to acquire a deeper understanding of how FMCG manufacturing firms in South Africa integrate sustainability with their supply chain partners. The individual participants provided the researchers with in-depth information relating to their firm's supply chain sustainability strategies, which aided in the researcher's understanding regarding the extent to which the FMCG manufacturers actually integrate sustainability, drawing in their supply chain partners. A discussion guide was developed from a thorough review of the literature and pre-tested on a participant who had similar characteristics to those in the target sample. Minor adjustments were made, based on the results of the pre-test. The 11 verbal interviews lasted between 18 and 54 minutes, with an average of 34 min (see Table 1). The interviews were transcribed by the researchers during the data collection period. To ensure that the completed transcripts were accurate, the researchers read the transcripts while listening to the audio-recordings and corrected any transcription errors.

Data analysis

A thematic analysis was conducted on the data collected. Thematic analysis involves analysing the data by recognising, classifying and reporting themes contained in a data set (Braun & Clarke 2012:57). Initially an exploratory analysis was conducted by listening to the audio-recordings while reading the transcribed interviews so that the researchers could familiarise themselves with the data and to create preliminary inductive codes (Creswell 2012:243). These inductive codes were combined with *priori* codes, identified from the literature, for a master code list to be drawn up. Relevant segments of text from the transcriptions were then coded and refined after patterns of themes were identified which gave meaning to the data (Braun & Clarke 2012:63–65). The final themes were analysed and their applicability to the study's research questions (RQs) determined.

Trustworthiness

To ensure quality and rigour, the study was guided by the four trustworthiness criteria: credibility, dependability, confirmability and transferability. Credibility deals with how well the findings of a study echo the real perspectives and experiences of participants (Bloomberg & Volpe 2016:162). Site triangulation was used to ensure credibility. This involved recruiting participants from several firms to ensure that the themes identified, were not exclusive to a particular firm (Shenton 2004:66). Dependability questions whether the findings of a study would still hold true if the study was replicated in a similar context (Polit & Beck 2012:585). A thorough description was provided for the research design, the implementation of the research design and the data collection method, thus ensuring dependability. Confirmability is concerned with verifying that the data collected actually represents the information the participant provided and that the data collected, does not reflect the influences of the researcher (Polit & Beck 2012:585). To ensure that the data did not reflect any biases or influences of the researcher, thus securing confirmability, the discussion guide before data collection was pre-tested and reviewed by more experienced researchers. Furthermore, audio-recordings from the interviews were transcribed in their entirety without any additions or deductions, ensuring that the findings were accurate. Transferability refers to the extent that findings of a study are applicable in and can be transferred to other settings and groups (Polit & Beck 2012:585). To ensure transferability, a detailed description of the background of the study, including the research design, data collection methods, discussion guide and other pertinent information, was provided (Creswell 2007:209; Polit & Beck 2012:585).

Ethical considerations

Participants in the study were required to read and sign an informed-consent form before the interview commenced. This consent form explained the purpose of the study and articulated that participation was voluntary, that the participant could withdraw at any time and provided assurances of anonymity and confidentiality. Pseudonyms were used in place of the participants' names and participating firm names in the transcripts and in the final presentation of data. The findings of the study are presented in the next section.

Findings

The findings of the study are reported for each RQ in this section. As presented in Table 2, four main themes relating to the study's RQs were identified along with several sub-themes. To aid in understanding the findings, the main themes are guided by Wolf's (2011:231) model of SSCI.

The themes and sub-themes summarised in Table 2 are now discussed, starting with the first theme, 'Internal SSCI'.

Theme 1: Internal sustainable supply chain integration

Internal integration concentrates on synchronising a firm's internal organisational information, processes, and activities

TABLE 2: A summary of themes and sub-themes.

Themes	Internal SSCI	Downstream SSCI	Upstream SSCI	Sustainability performance
Sub-themes	**Strategy Integration** • Support from leadership • Sustainability performance **Organisational Integration** • Responsibility for sustainability • Rewards alignment	• Understand expectations of customers • Include customers in sustainability	**Supplier Management** • Supplier selection • Collaborating with suppliers on sustainability **Risk Management**	• Performance alignment • Improving performance

SSCI, sustainable supply chain integration.

(Chang et al. 2016:283). Therefore, 'internal SSCI' calls for including the aspects of sustainability into integrated activities, such as joint planning and information sharing, across functional areas within the firm. Internal SSCI is linked to RQ 1 because it considers the extent to which FMCG manufacturing firms incorporate sustainability into their internal supply chain strategy and organisational processes. This theme involves two sub-themes: strategy integration and organisational integration.

Strategy integration

Firms must clearly define strategic sustainability goals and direct strategic decisions, as well as organisational processes to achieving the sustainability goals (Wolf 2011:224–225). The study finds that most firms have a strong sustainability focus and a clear supply chain sustainability strategy linked to the firm's overall corporate strategy. In participating firms, the supply chain sustainability strategy is formulated by executive management and cascades down to functional areas across the firm. Although supply chain sustainability strategy formulation is a very rigid and top-down process, there is some input from lower- level management as well. This can be supported by the following quotes:

> '… it's part of the business, part of the way the organisation does business. So it's set from the top of the organisation and goes through the entire organisation and therefore, as such, supply chain as a functional element within their organisation has a very strong sustainability focus and sustainability strategy embedded in everything that is done in supply chain ….' (P5, male, supply chain director)

> 'So their corporate strategy includes a planet portion and it gets cascaded [*down*] in your different divisions ….' (P11, female, operations manager)

Support from leadership: Effective SSCI requires that firms have a well laid-out strategic plan and commitment from senior management. In instances where sustainability goals are unclear, support from leadership could direct employees to understanding the set goals (Wolf 2011:231). The findings from the study indicate that support from leadership motivates employees to achieve sustainability by making resources available to employees so that they may engage in sustainability activities. Furthermore, participating firms give employees freedom within bounds to act on the sustainability issues which may arise. This is supported by the following quotes:

> 'Yes, for sure [*they have support from senior management*] … [*by*] making resources available ….' (P10, male, operations planning manager)

> 'Yes [*they have freedom to act on sustainability*], but within guidelines.' (P8, male, chief procurement officer)

Sustainability performance: Internal SSCI tears down the functional barriers and promotes cooperation between different functions on sustainability. It improves sustainability performance by enabling all employees to clearly understand sustainability goals and how best to implement these goals (Flynn et al. 2010:59–60).

Training employees in sustainability empowers and supports them to react better to sustainability concerns, thereby further improving sustainability performance (Wolf 2011:231). The findings indicate that in most participating firms, supply chain employees undergo formal sustainability training sessions relevant to the particular area of the supply chain they work in. If an employee has the knowledge and is empowered to react to a particular sustainability problem, without needing to wait for direction from top management, an effective solution to the problem may be implemented faster, thus improving sustainability performance. This is supported by the following quotes:

> 'It forms part of the ways of working and the ongoing training and sensitisation that goes on in the organisation through various forums, be it the formal training sessions, be it through communication problems from senior leaders, you know, be it sharing of best practices from across the supply chain.' (P5, male, supply chain director)

> 'Yes, so they would receive sustainability training, they would even also have it within the individual performance goals.' (P6, female, supply chain sustainability manager)

It is important for firms to be transparent regarding metrics in order to effectively measure sustainability performance (Wolf 2011:230). Participating firms enable transparency regarding sustainability performance metrics by using reports, scorecards, standards, frameworks and roadmaps to monitor their sustainability performance and communicate it to relevant stakeholders as is noted in the following quotes:

> '… performance management or at a higher level, it's measured on a roadmap ….' (P10, male, operations planning manager)

> '… you will then have to fill in a scorecard on a monthly basis ….' (P11, female, operations manager)

> 'There is a global annual report that measures the achievements of the year.' (P1, female, supply chain director)

Organisational integration

To achieve organisational integration within the firms, responsibility for sustainability must be shared by all employees. Furthermore, rewards should be aligned to sustainability performance assessment (Wolf 2011:230).

Responsibility for sustainability: The findings indicate that participating firms do not sufficiently share the responsibility for sustainability among employees and across functional areas. As seen in the quote below, a sustainability team is set up to address all sustainability issues within the firm:

> 'They have a whole team that focuses on *that* as their responsibility, so they consider everything. So I think from a local perspective, from running an affiliate of the global organisation, it's purely responsible for making sure that the rules are followed.' (P1, female, supply chain director)

Although a notable initiative, restricting sustainability concerns to a specific team, limits sustainability performance at the participating firm, as there are limited opportunities

for collaboration and interaction between different functional areas and it limits the opportunities for improved idea generation, innovative process design and product design.

Rewards alignment: Tying employee performance assessment to sustainability performance assessment may encourage employees to act more sustainably. Internal sustainability integration should be in alignment with incentive and reward systems within the firms (Wolf 2011:230). The findings indicate that firms set sustainability goals for employees to achieve. The rewards or incentives received by employees for sustainability at participating firms are linked to achieving the sustainability goals set by senior management as shown in the following first quote. Employees in most participating firms are rewarded by financial means, recognition or gift vouchers for acting sustainably. As shown in the second quote, a participant indicated that employees at the firm are not adequately rewarded for acting sustainably. This potentially has a negative impact on the sustainability performance because employees lack the motivation to act sustainably:

> 'Because we work on a merit bonus system on certain levels of employees, which is normally management from certain levels up, and if targets are met or not met, they are rewarded or penalised.' (P7, male, supply chain development manager)

> 'Yes, they are rewarded [*for acting sustainably, but*] not enough.' (P11, female, operations manager)

Theme 2: Downstream sustainable supply chain integration

Downstream SSCI encourages effective communication across the supply chain, as a method to share the same sustainability standards with customers (Azevedo et al. 2017:2254). The theme 'downstream SSCI' is linked to RQ 2 because it considers how FMCG manufacturing firms include sustainability in the integration of their downstream customers. Downstream SSCI takes into account how firms understand their customers' sustainability expectations. Furthermore, it focuses on the inclusion of customers in the firm's SSCM activities.

Understand expectations of customers

Powerful customers have the potential to dictate that suppliers comply with the buyer's sustainability expectations (Laari et al. 2016:1961). Firms must understand the nature of customer sustainability expectation,s because this helps the firm to better address their customer needs by designing suitable strategies (Wolf 2011:228). The findings indicate that most participating firms do not experience substantial pressure from their customers to be more sustainable. This may be due to customers themselves not experiencing any sustainability pressure from *their* customers or may also be due to the mind-set of ignoring sustainability to keep costs down. In some cases, sustainability expectations are internally driven as demonstrated in the following quote:

> 'No, it's all internally driven. So it's actually the shareholder ….' (P2, male, supply chain director)

Include customers in sustainable supply chain management activities

Firms must integrate the information gathered from customer sustainability expectations into SSCM activities and strategy formulation to effectively implement SSCI (Wolf 2011:228). The findings indicate that the participating firms and their customers do not regularly engage in conversations regarding sustainability, and information regarding sustainability expectations is not regularly shared. Aspects of sustainability in participating firms are only discussed when negotiating contracts. Most participating firms do not involve their customers in supply chain sustainability strategy formulation and do not collaborate with customers on sustainability initiatives as shown in the first quote. This is especially true for local subsidiaries as opposed to the global subsidiaries highlighted in the second quote. Instead, customers are included in sustainable strategy formulation and collaboration on sustainability initiatives in other firm subsidiaries around the world, particularly in Europe. This may be due to the culture in developing countries such as South Africa, where sustainability is not deemed important:

> 'We don't get involved. It's because of the bigger factors, we can't tell them from an economic perspective that they should do this and do that and, you know, we can't tell them from a social perspective how to handle their labour issues. The only thing we have a bit of say in is, is obviously environmental factors.' (P3, female, procurement officer)

> 'From a South African perspective, I don't think they are that involved … I think globally, they might be much better, especially in Europe.' (P11, female, operations manager)

Additionally, the findings indicate that customers often may not support the firms in their sustainability efforts, especially if efforts involve a price increase on the goods supplied. Again, this may be due to the culture and the mind-set of managers in developing countries where sustainability is not deemed important as shown by the following quote:

> 'So you know you need to be a responsible corporate citizen … and people don't have that mind-set yet.' (P11, female, operations manager)

Theme 3: Upstream sustainable supply chain integration

Upstream SSCI involves integrating firm suppliers by sharing sustainability information, collaborate on sustainability activities and to better understand supplier sustainability processes, capabilities and constraints leading to more effective planning (Schoenherr & Swink 2012:100). The third theme, Upstream SSCI, is linked to RQ 3 as it considers how FMCG manufacturing firms include sustainability when integrating their upstream suppliers. This theme involves two sub-themes: supplier management and risk management.

Supplier management

Supplier management involves establishing supplier relationships with the firm and includes supplier selection and collaboration with suppliers on sustainability.

Supplier selection: During the supplier selection process in which suppliers are informed of firm sustainability expectations, suppliers are assessed and required to prove past sustainability experience (Wolf 2011:230). The findings indicate that the participating firms put pressure on their suppliers to act more sustainably. The firms also inform their suppliers of their sustainability expectations and require suppliers to go through a formal supplier assessment process to mitigate sustainability risk as shown in the following quote:

> 'I think it's a formalised supplier assessment program, the supplier [*is*] assessed, it's documented and it's updated annually, and we do supplier audits to make sure that those things are happening. So it's a formal program.' (P1, female, supply chain director)

Suppliers often have no choice but to accept the sustainability pressures and expectations from participating firms. In some cases, suppliers are completely open to participating firms' pressure and expectations, because they realise that it may benefit them in their dealings with other customers. This is supported by the next quote. However, it is important to note that where there is only one supplier at a vital input, participating firms do not have such a significant influence over supplier sustainability:

> 'They are very open to change because if they see the benefits on their side … we [*are*] not the only people that they supply to … but if they save on us, they can do it for your other customers.' (P11, female, operations manager)

Collaborating with suppliers on sustainability: Manufacturing firms are increasingly focused on their core competences; therefore, they are more dependent on their suppliers (Prajogo & Olhager 2012:516). To support SSCI, firms must build a close and collaborative relationship with their suppliers and work together to develop sustainable products, processes or initiatives (Wolf 2011:230). Information on sustainability must also be shared (Wolf 2011:228). The study finds that participating firms see the benefit of having a close and collaborative relationship with their suppliers and often engage with them to improve the firms' sustainability and work together to generate new ideas and improve product development as shown in the first quote. However, the same cannot be said about the suppliers, as in some cases, suppliers do not involve participating firms in their sustainability strategy formulation of initiatives. Participating firms often do not play an active role in supplier sustainability, but will, nonetheless, support suppliers in their sustainability efforts, even if this may result in paying suppliers a higher price for more sustainably produced goods as supported by the second quote:

> 'Obviously if you're working together, we get very positive effects from it. Every now and then you'll get a supplier who's not interested in changing their ways, obviously you've then got a negative impact. But for the most part, everyone sort of wants to work together to make sure they keep the business going.' (P4, female, process engineer)

> 'So I say in certain areas, yes, because we are already currently doing that for some of our commodities because even being present in some of the international markets is something that will be required of us.' (P6, female, supply chain sustainability manager)

Risk management

Sustainability risk management is an important part of SSCI. Firms can mitigate risks through sustainable supplier selection, supplier assessments and full transparency with suppliers (Wolf 2011:231). The findings indicate that participating firms have formal supplier assessments and controls in place to ensure that suppliers meet the firms' sustainability expectations. Generally, if a supplier fails to meet sustainability expectations, or is implicated in any unethical practices, such as the improper disposal of toxic waste, there are penalties in place. Often, these suppliers are blacklisted and cannot do business again with the firm. This is supported by the following quotes:

> '… formal supplier assessment process that includes sustainability, but also risk, because if they [*are*] doing the right things, they generally will have the right sustainability measures in place and that gives you some comfort in terms of the risk of using other raw materials ….' (P1, female, supply chain director)

> '… by saying, 'look if you are not going to conform on one, two, three, we are unfortunately going to have to walk away from our relationship and rather source from someone else, because you gonna become a risk to us as a business.' (P6, female, supply chain sustainability manager)

Theme 4: Sustainability performance

For improved sustainability performance, all partners (internal and external) in the supply chain must participate in sustainability initiatives and practices (Laari et al. 2016:1961). The fourth theme, sustainability performance, is linked to RQ 4 because it deals with the extent that supply chain integration with supply chain partners contributes to sustainability performance. Sustainability performance considers the alignment of all three sustainability aspects (environmental, economic and social) and also considers how sustainability performance may be improved.

Performance alignment

To have truly sustainable supply chains, firms must genuinely implement business practices, strategies and measures that equally support the three sustainability aspects: environmental, economic and social (Silvestre 2015:172). As part of sustainability performance, firms must try to align the strategies or practices of the different sustainability aspects as they are equally important. Should any discrepancies between the aspects be identified, firms should attempt to balance these out (Wolf 2011:231).

The study indicates that although participating firms recognise that all aspects of sustainability are important, due to local variables such as economic conditions (e.g., the recession in South Africa) and environmental issues (e.g., the drought), the participating firms find it difficult to focus

equally on all three aspects. Economic concerns are at the forefront. Therefore, firms try to implement social and environmental aspects within strict economic constraints as shown by these quotes:

> 'In a South African context, one has to put economic [*sic*] first because of affordability issues, whereas the other markets, [*in*] more developed markets, I would say that sustainability maybe driven by social [*sic*], might be more important or carry a very strong weight.' (P8, male, chief procurement officer)

> '… so this is the new purpose I spoke about. So it's about being socially responsible within economic constraints. It's really about reducing our footprint and providing healthier food options for people but still making money.' (P10, male, operations planning manager)

Improving performance

The strategic attempts of firms to create competitive advantages in the market and to achieve better overall performance rely heavily on supply chain integration (Chang et al. 2016:282). Collaboration and cooperation between supply chain partners is essential for firms to enhance the competitiveness of the supply chain, while simultaneously improving sustainability performance by reducing sustainability issues (Seuring 2004:1059).

The study finds that collaboration with supply chain partners is key to improving sustainability performance for the whole supply chain. Collaboration and cooperation with supply chain partners allows for the sharing of ideas and innovative practices that significantly impacts sustainability performance amongst participating firms as highlighted by these quotes:

> 'I think it's a high degree of correlation, in the entire chain. You know, sustainability cannot be a one shot or one companyinitiative. It has to be a broad-brushed approach, and everybody needs to be on the bandwagon, to really make a difference. So, I think to the question, I would say, there is a high degree of collaboration to drive sustainable performance and sustainability.' (P5, male, supply chain director)

> 'It affects the sustainability of supply chain positivity, there's that continuous interaction and continuous new generation of ideas and you're not limited to internal thinking and internal, you know, ideas.' (P11, female, operations manager)

Conclusion

Summary of findings and theoretical implications

The aim of this study was to expand upon the research of Wolf (2011:221–235), by exploring the extent to which FMCG manufacturers in South Africa apply sustainability to supply chain integration. It expands upon the research of Wolf (2011:221–235), by focusing on supply chain sustainability integration in a developing country context. The first RQ addresses the extent to which FMCG manufacturers integrate sustainability into their internal supply chain strategies. The study confirms findings by Wolf (2011:224–224), indicating that having a clear sustainability focus and supply chain sustainability strategies, linked to corporate strategy and support by leadership, are key to integrating sustainability internally, and thus improving the sustainability performance. Additionally, functional barriers within the firm must be eliminated so that responsibility for sustainability is shared among all employees, and so that the rewards systems are in alignment with the sustainability performance.

The second RQ investigates how FMCG manufacturers include sustainability when integrating downstream supply chain partners. In contradiction to Wolf (2011:228), the study finds that customers do not exert much pressure on firms to adhere to their sustainability expectations. Instead, sustainability expectations are driven internally. This may be due to customers not experiencing any sustainability pressure from their own customers, or the current mind-set of ignoring sustainability to reduce costs in the supply chain. Additionally, Wolf (2011:228) highlights that it is imperative for firms to include customers in their sustainability efforts by integrating customer sustainability expectations into SSCM activities or strategy formulation. Again, the findings contradict this as customers and participating firms do not regularly engage in conversations, regarding sustainability. This may be due to the culture in South Africa where sustainability is still not considered important and is not something that firms need to pursue. Furthermore, firms do not involve their customers in sustainable strategy formulation or sustainability initiatives. The third RQ explores how FMCG manufacturers include sustainability in their integration with upstream supply chain partners. The findings corroborate those of Wolf (2011:231), in that sustainable supplier selection, supplier assessments, information sharing and transparency are all key to mitigate sustainability risks; thereby, supporting SSCI. Furthermore, the study confirms the findings of Wolf (2011:228), as collaborating with suppliers on sustainability, significantly does improve the sustainability performance.

The final RQ examines the extent that supply chain integration with supply chain partners contributes to sustainability performance in FMCG manufacturers. The findings of the study differ from those of Wolf (2011:231), as firms find it difficult to align all three sustainability aspects equally, due to local variables such as economic conditions (e.g. recessions) and environmental issues (e.g. droughts). Therefore, economic sustainability is currently considered most important for the continuity of firms operating in areas with harsh local variables. However, with regards to improving sustainability performance, the study confirms the findings of Wolf (2011:229), as collaborating with supply chain partners on sustainability supports SSCI and improves the sustainability performance.

In conclusion, the final theoretical implication adds to the literature by exploring SSCI in the context of a 'developing country'. Firms in developing countries are aware of the importance of sustainability, but are not yet at the point

where they see the benefit of sustainability, compared to firms in developed countries. This may be due to additional variables facing firms in developing countries, such as unemployment, resource scarcity, economic uncertainty and political uncertainty. These variables lead firms to place greater importance on economic sustainability aspects over environmental and social sustainability aspects. This contradicts the SSCM literature which highlights the importance of achieving true sustainability by treating all three sustainability aspects as equally important.

Managerial recommendations

Firstly, the findings contribute to the understanding of the importance for the firm to truly incorporate sustainability internally, from corporate culture to strategy development. There must be a shared understanding and responsibility for sustainability among all employees, and across functional areas in the firm, to achieve a genuinely sustainable supply chain. This can be implemented by having internal conversations regarding sustainability across functional areas to define and set clear sustainability objectives that all employees understand. Furthermore, senior leadership should support and encourage sustainability commitment from employees through the use of rewards, sustainability training, sustainability workshops and the inclusion of employees in sustainability conversations.

Secondly, managers must not view sustainability as a cost in the supply chain, but rather as a way to improve the efficiency of supply chain activities. A change in the mind-set of managers in firms in developing countries is needed, to consider the benefit of including sustainability as a core competency, instead of a burden, as seen in firms in developed European countries. Managers in developing countries often consider the social and environmental aspects of sustainability as contradictive or working against economic sustainability. However, supply chain mangers need to acknowledge the potential benefits of aligning profitability with the social and environmental aspects of sustainability, such as long-term cost reductions, greater efficiency and better utilisation of resources.

Finally, the findings confirm that collaboration with supply chain partners is key to achieving improved sustainability performance in the supply chain. Collaborating with supply chain partners opens up the opportunity for shared value creation through continual interaction and idea generation to solve sustainability problems. This can be implemented by listening to supply chain partners' sustainability expectations and concerns, as well as creating open and constructive conversations regarding sustainability. Furthermore, firms must form partnerships with peers in the industry and work together to solve industry-wide sustainability problems. Firms are not limited to internal patterns of thinking.

Limitations and directions for future research

Despite analysing several FMCG firms, ranging from food and beverage to personal care manufacturers, the study does not address the sustainability perspectives of other supply chain partners, namely, upstream suppliers and downstream customers. It would be beneficial to consider in future research the perspectives of all supply chain partners when exploring SSCI; this could provide a more complete understanding of the way firms implement SSCI. Furthermore, the small sample size in this qualitative study limits the generalisability of its findings. Additionally, due to the qualitative nature of the study, only the participants' perspectives of the integration of SSCM activities internally and externally were obtained. The study did not measure the participating firms' integration of SSCM activities internally and externally with supply chain partners, which a quantitative research design would allow. Therefore, it would be valuable in future to make use of a mixed- methods research design to effectively measure the integration of SSCM internally, as well as externally with supply chain partners.

Furthermore, limiting the study to one developing country restricts the generalisability of its findings and transferability of Wolf's model (2011:231) to other developing countries. Therefore, future research should be conducted in other developing countries to increase generalisability and to confirm the transferability of Wolf's model (2011:231) to other developing countries. Future research should also attempt to gain a deeper understanding of internal supply chain sustainability integration, because it creates the foundation for external supply chain sustainability integration, impacting sustainability performance across the supply chain as a whole. This can be done by interviewing a number of individuals at different levels of management at each participating firm to establish whether there is a shared understanding of and a joint responsibility for sustainability. Thus, to determine if sustainability is indeed internally effectively integrated and what the value is that this brings to firms.

Acknowledgements

Competing interests

The authors have declared that no competing interests exist.

Authors' contributions

This article is based on the MPhil dissertation of S.E. who was the main researcher. W.N. and T.K. acted as supervisors with the conceptualisation, literature review, research instrument and development of this manuscript.

Ethical considerations

University of Pretoria, Faculty of Economic and Management Sciences Research Ethics Committee reference number 4213207/2018.

Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data availability

Data is stored according to institutional policy.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors

References

Ahi, P. & Searcy, C., 2013, 'A comparative literature analysis of definitions for green and sustainable supply chain management', *Journal of Cleaner Production* 52, 329–341. https://doi.org/10.1016/j.jclepro.2013.02.018

Ataseven, C. & Nair, A., 2017, 'Assessment of supply chain integration and performance relationships: A meta-analytic investigation of the literature', *International Journal of Production Economics* 185, 252–265. https://doi.org/10.1016/j.ijpe.2017.01.007

Azevedo, S.G., Carvalho, H., Ferreira, L.M. & Matias, J.C., 2017, 'A proposed framework to assess upstream supply chain sustainability', *Environment, Development and Sustainability* 19(6), 2253–2273. https://doi.org/10.1007/s10668-016-9853-0

Beheshti, H., Oghazi, P., Mostaghel, R. & Hultman, M., 2014, 'Supply chain integration and firm performance: An empirical study of Swedish manufacturing firms', *Competitiveness Review* 24(1), 20–31. https://doi.org/10.1108/CR-06-2013-0060

Bloomberg, L.D. & Volpe, M., 2016, *Completing your qualitative dissertation: A roadmap from beginning to end*, 3rd edn., Sage, Los Angeles, CA.

Braun, V. & Clarke, V., 2012, 'Thematic analysis', in H. Cooper (ed.), *APA handbook of research methods in psychology*, Volume 2: pp 57 – 71, American Psychology Association, Washington DC.

Carter, C. & Easton, L., 2011, 'Sustainable supply chain management: Evolution and future directions', *International Journal of Physical Distribution & Logistics Management* 41(1), 46–62. https://doi.org/10.1108/09600031111101420

Carter, C.R. & Rogers, D.S., 2008, 'A framework of sustainable supply chain management: Moving toward new theory', *International Journal of Physical Distribution & Logistics Management* 38(5), 360–387. https://doi.org/10.1108/09600030810882816

Chang, W., Ellinger, A.E., Kim, K.K. & Franke, G.R., 2016, 'Supply chain integration and firm financial performance: A meta-analysis of positional advantage mediation and moderating factors', *European Management Journal* 34(3), 282–295. https://doi.org/10.1016/j.emj.2015.11.008

Christopher, M., 2016, *Logistics and supply chain management*, 5th edn., Pearson Education, Harlow.

Creswell, J.W., 2007, *Qualitative inquiry & research design: Choosing among five approaches*, 2nd edn., Sage, Thousand Oaks, CA.

Creswell, J.W., 2012, *Education research: Planning, conducting and evaluating quantitative and qualitative research*, 4th edn., Pearson, Boston MA.

Dubey, R., Gunasekaran, A. & Ali, S.S., 2015, 'Exploring the relationship between leadership, operational practices, institutional pressures and environmental performance: A framework for green supply chain', *International Journal of Production Economics* 160, 120–132. https://doi.org/10.1016/j.ijpe.2014.10.001

Dubey, R., Gunasekaran, A., Childe, S.J., Papadopoulos, T. & Fosso Wamba, S., 2017, 'World class sustainable supply chain management: Critical review and further research directions', *The International Journal of Logistics Management* 28(2), 332–362. https://doi.org/10.1108/IJLM-07-2015-0112

Economy Watch, 2010, *FMCG industry*, viewed 09 March 2018, from http://www.economywatch.com/world-industries/fmcg.html.

Fahimnia, B., Sarkis, J. & Davarzani, H., 2015, 'Green supply chain management: A review and bibliometric analysis', *International Journal of Production Economics* 162, 101–114. https://doi.org/10.1016/j.ijpe.2015.01.003

Flynn, B.B., Huo, B. & Zhao, X., 2010, 'The impact of supply chain integration on performance: A contingency and configuration approach', *Journal of Operations Management* 28(1), 58–71. https://doi.org/10.1016/j.jom.2009.06.001

Foerstl, K., Azadegan, A., Leppelt, T. & Hartmann, E., 2015, 'Drivers of supplier sustainability: Moving beyond compliance to commitment', *Journal of Supply Chain Management* 51(1), 67–92. https://doi.org/10.1111/jscm.12067

FoodBev SETA, 2017, *Annual report 2016/2017*, viewed 01 May 2018, from http://www.foodbev.co.za/wp-content/uploads/2017/11/14225_Annual-Report-2017-CD-Version.pdf.

Freidberg, S., 2017, 'Big food and little data: The slow harvest of corporate food supply chain sustainability initiatives', *Annals of the American Association of Geographers* 107(6), 1389–1406. https://doi.org/10.1080/24694452.2017.1309967

Gimenez, C., Sierra, V. & Rodon, J., 2012, 'Sustainable operations: Their impact on the triple bottom line', *International Journal of Production Economics* 140(1), 149–159. https://doi.org/10.1016/j.ijpe.2012.01.035

Gold, S., Hahn, R. & Seuring, S., 2013, 'Sustainable supply chain management in "Base of the Pyramid" food projects – A path to triple bottom line approaches for multinationals?', *International Business Review* 22(5), 784–799. https://doi.org/10.1016/j.ijpe.2012.01.035

Guest, G., Bunce, A. & Johnson, L., 2006, 'How many interviews are enough?: An experiment with data saturation and variability', *Field Methods* 18(1), 59–82. https://doi.org/10.1177/1525822X05279903

Hall, T., 2011, 'The triple bottom line: What is it and how does it work?', *Indiana Business Review* 86(1), 4–8.

Hsueh, C.-F., 2015, 'A bilevel programming model for corporate social responsibility collaboration in sustainable supply chain management', *Transportation Research Part E: Logistics and Transportation Review* 73, 84–95. https://doi.org/10.1177/1525822X05279903

International Institute for Sustainable Development, n.d., *Sustainable development*, viewed 09 March 2018, from http://www.iisd.org/topic/sustainable-development.

Laari, S., Töyli, J., Solakivi, T. & Ojala, L., 2016, 'Firm performance and customer-driven green supply chain management', *Journal of Cleaner Production* 112, 1960–1970. https://doi.org/10.1016/j.jclepro.2015.06.150

Lee, S.-Y., Klassen, R.D., Furlan, A. & Vinelli, A., 2014, 'The green bullwhip effect: Transferring environmental requirements along a supply chain', *International Journal of Production Economics* 156, 39–51. https://doi.org/10.1016/j.ijpe.2014.05.010

Leuschner, R., Rogers, D.S. & Charvet, F.F., 2013, 'A meta-analysis of supply chain integration and firm performance', *Journal of Supply Chain Management* 49(2), 34–57. https://doi.org/10.1111/jscm.12013

Maheshwari, P., Khaddar, R., Kachroo, P. & Paz, A., 2016, 'Dynamic modeling of performance indices for planning of sustainable transportation systems', *Networks and Spatial Economics* 16(1), 371–393. https://doi.org/10.1007/s11067-014-9238-6

Mathivathanan, D., Kannan, D. & Haq, A.N., 2018, 'Sustainable supply chain management practices in Indian automotive industry: A multi-stakeholder view', *Resources, Conservation and Recycling* 128, 284–305. https://doi.org/10.1016/j.resconrec.2017.01.003

Meixell, M.J. & Luoma, P., 2015, 'Stakeholder pressure in sustainable supply chain management: A systematic review', *International Journal of Physical Distribution & Logistics Management* 45(1/2), 69–89. https://doi.org/10.1108/IJPDLM-05-2013-0155

Pagell, M. & Wu, Z., 2009, 'Building a more complete theory of sustainable supply chain management using case studies of 10 exemplars', *Journal of Supply Chain Management* 45(2), 37–56. https://doi.org/10.1111/j.1745-493X.2009.03162.x

Plano Clark, V.L. & Creswell, J.W., 2015, *Understanding research: A consumer's guide*, 2nd edn., Pearson, Upper Saddle River, NJ.

Polit, D.F. & Beck, C.T., 2012, *Nursing research: Generating and assessing evidence for nursing practice*, 9th edn., Wolters Kluwer Health | Lippincott Williams & Wilkins, Philadelphia, PA.

Prajogo, D. & Olhager, J., 2012, 'Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration', *International Journal of Production Economics* 135(1), 514–522. https://doi.org/10.1016/j.ijpe.2011.09.001

PricewaterhouseCoopers, 2016, *Prospects in the retail and consumer goods sector in ten sub-Saharan countries*, viewed 09 March 2018, from https://www.pwc.co.za/en/assets/pdf/retail-in-africa.pdf.

Quarshie, A.M., Salmi, A. & Leuschner, R., 2016, 'Sustainability and corporate social responsibility in supply chains: The state of research in supply chain management and business ethics journals', *Journal of Purchasing and Supply Management* 22(2), 82–97. https://doi.org/10.1016/j.pursup.2015.11.001

Sancha, C., Gimenez, C. & Sierra, V., 2016, 'Achieving a socially responsible supply chain through assessment and collaboration', *Journal of Cleaner Production* 112, 1934–1947. https://doi.org/10.1016/j.jclepro.2015.04.137

Schoenherr, T. & Swink, M., 2012, 'Revisiting the arcs of integration: Cross-validations and extensions', *Journal of Operations Management* 30(1–2), 99–115. https://doi.org/10.1016/j.jom.2011.09.001

Seuring, S., 2004, 'Integrated chain management and supply chain management comparative analysis and illustrative cases', *Journal of Cleaner Production* 12(8–10), 1059–1071. https://doi.org/10.1016/j.jclepro.2004.02.006

Seuring, S. & Gold, S., 2013, 'Sustainability management beyond corporate boundaries: From stakeholders to performance', *Journal of Cleaner Production* 56, 1–6. https://doi.org/10.1016/j.jclepro.2012.11.033

Seuring, S. & Müller, M., 2008, 'From a literature review to a conceptual framework for sustainable supply chain management', *Journal of Cleaner Production* 16(15), 1699–1710. https://doi.org/10.1016/j.jclepro.2008.04.020

Shenton, A.K., 2004, 'Strategies for ensuring trustworthiness in qualitative research projects', *Education for Information* 22(2), 63–75. https://doi.org/10.3233/EFI-2004-22201

Silvestre, B.S., 2015, 'A hard nut to crack! Implementing supply chain sustainability in an emerging economy', *Journal of Cleaner Production* 96, 171–181. https://doi.org/10.1016/j.jclepro.2014.01.009

South Africa Data Portal, 2018, *IMF: World Economic Outlook (WEO) database, April 2018*, viewed 01 May 2018, from http://southafrica.opendataforafrica.org/IMFWEO2018Apr/imf-world-economic-outlook-weo-database-april-2018.

StatsSA, 2022, Quarterly Labour Force Survey (QLFS) – Q4:2021, viewed 05 April 2022, from http://www.statssa.gov.za/publications/P0211/Media%20release%20QLFS%20Q4%202021.pdf

The Logistics & Supply Chain Management Society, 2014. *SCM dictionary – F*, viewed 09 March 2018, from http://lscms.org/scm-dictionary/f/.

Touboulic, A. & Walker, H., 2015, 'Love me, love me not: A nuanced view on collaboration in sustainable supply chains', *Journal of Purchasing and Supply Management* 21(3), 178–191. https://doi.org/10.1016/j.pursup.2015.05.001

Wolf, J., 2011, 'Sustainable supply chain management integration: A qualitative analysis of the German manufacturing industry', *Journal of Business Ethics* 102(2), 221–235. https://doi.org/10.1007/s10551-011-0806-0

World Bank, 2018, *South Africa*, viewed 01 May 2018, from https://data.worldbank.org/country/south-africa.

World Economic Forum, 2018, *The global competitiveness report 2017–2018*, viewed 01 May 2018, from http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf.

World Population Review, 2018, *South Africa population 2018*, viewed 01 May 2018, from http://worldpopulationreview.com/countries/south-africa-population/.

Zhao, P., 2010, 'Sustainable urban expansion and transportation in a growing megacity: Consequences of urban sprawl for mobility on the urban fringe of Beijing', *Habitat International* 34(2), 236–243. https://doi.org/10.1016/j.habitatint.2009.09.008

Zhao, R., Liu, Y., Zhang, N. & Huang, T., 2017, 'An optimization model for green supply chain management by using a big data analytic approach', *Journal of Cleaner Production* 142, 1085–1097. https://doi.org/10.1016/j.jclepro.2016.03.006

Zhu, Q. & Sarkis, J., 2004, 'Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises', *Journal of Operations Management* 22(3), 265–289.