



The Role of Entrepreneurship and Human Resources in Supporting Sustainability-Oriented Innovations in Food Supply Chain Management

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Abstract

The *purpose* of this research aims to critically understand the role of entrepreneurship and human resources (HR) in supporting sustainability-oriented innovation (SOI) in supply chain (SC) of food retailers in Jordan, in order to provide a novel conceptual framework. Attempting to overcome challenges generated from unsustainable business performance such as seeking to reduce harmful environmental and social influences while taking into consideration of economic aspects, SOI has gained attention quickly since it brings transformations to products, processes, practices and behavioral patterns. There has been little theoretical and empirical understanding of how SOI in the Supply Chain Management (SCM) can offer a potential framework to link innovation orientation and sustainable orientation. Prior research has also had overlaps amongst the key themes used by most of the theoretical perspectives to understand SOI in food SC. This research also provides managerial recommendations concerning the applicability of SOI in food SC. The phenomena of SOI was explored and explained from four theoretical perspectives: network, entrepreneurship, innovation and sustainability.

The *methodology* of this research is qualitative. A systematic literature review was followed to critically evaluate previous research, which led to constructing an initial conceptual framework. A two-stage approach was applied. First stage, eight expert interviews of HR managers and academic researchers were conducted to refine the initial conceptual framework resulting in a proposed framework. Second stage, a multiple-case study, including 30 semi-structured interviews, 18 observations and secondary data from six case studies of retailers, was conducted in 2019. High-order key themes of the four perspectives (network, entrepreneurship, innovation and sustainability) were examined in each case, drawing on common literature-based terminology. Cross-case analysis techniques were then used in order to refine the proposed framework and a final conceptual framework was constructed. The empirical work was conducted based on the views of various managers in food retailers in Jordan.

The *findings* revealed that the interaction between the theoretical perspectives (namely network, entrepreneurship, innovation and sustainability) is important, in order to holistically understand SOI in food SCM. The research identified three key stages of establishing, developing and implementing SOI which have important applicability in food SC. The research suggested that the focal actor, as a corporate entrepreneur, with the integration of the network perspective establishes SOI at the actor level, then develops SOI at their dyad level and later with their network level to help produce SOI. Finally, the focal actor implements SOI and efficiently practices it with the other actors in order to enhance innovation activities and sustainability performance in food SC. It was also found that HR plays an important role in SC of retailers as HR engage in SC practices and they create and engage in different strategies focused on sustainability. HR also plays an important role in motivating employees to achieve the goals.

The *contribution* of this research to knowledge is theoretical and methodological contributions and managerial implications. The contributions to theory were provided to the SCM literature with a novel theoretical association, where SCM as a foundational perspective and the other four perspectives were incorporated to understand SOI as well as providing a holistic conceptual framework for SOI in food SC. The methodological contributions were provided, linking between data and theory, supporting an analytical generalization. The research provided empirical findings for the supply chain of retailers from the analysis of the actor, dyad and network levels. The research further developed validity, reliability and trustworthiness to enhance the research quality. The managerial implications were indicated for different level managers, particularly for focal actors in addition to their dyadic actors and across their network.

Keywords: SOI, SCM, Network, Entrepreneurship, Innovation, Sustainability, HR, Food Retailers

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List of Acronyms

Abbreviations	Definitions
CE	Corporate Entrepreneurship
HR	Human Resources
HRM	Human Resource Management
SC	Supply Chain
SCM	Supply Chain Management
SOI	Sustainability-Oriented-Innovation
SSC	Sustainable Supply Chain
SSCM	Sustainable Supply Chain Management

Chapter One: Introduction

1.1 Background

Attempting to overcome challenges generated from unsustainable business performance such as seeking to reduce harmful environmental and social influences while taking into consideration of economic aspects, Sustainability-Oriented Innovation (SOI) has gained attention quickly since it brings transformations to products, processes, practices and behavioral patterns (Mylan et al., 2015). Within this context, sustainability is a global challenge requiring innovation where organizations have committed to pursuing higher levels of environmental, social, and economic performance (Adams et al., 2016). In order to promote the effectiveness of these endeavors, there is a pressing need to understand the conditions for successful innovation in Supply Chain (SC) towards sustainability (Bellamy et al., 2014; Behnam et al., 2018).

Several scholars have studied innovation in the food SC from different areas. For example, food SCs induce innovation by means of adapted or invented products, processes, information, technologies, transportation, infrastructure, standards and systems (e.g. Croom, 2001; Trienekens et al., 2003; Leat and Revoredo-Giha, 2013; Rueda et al., 2017). An effective way to generate sustainable practices with technology in food SC does not build on a completely “new” set of skills. Instead, efforts to create more sustainable practices contribute to the continuous improvement capabilities of a business (Shah and Ganji, 2017) and how innovative they are.

Despite the potential benefits that it offers, understanding of SOI in food Supply Chain Management (SCM) as an integrative framework and the options available for innovation for sustainability seem limited at present. In previous research, there has been little theoretical understanding of how SOI in the food SC can link between innovation orientation and sustainable orientation (Adams et al., 2016; Shah and Ganji, 2017). There were overlaps amongst the key themes used by most of the theoretical perspectives to understand SOI in SCM, such as network, entrepreneurship, innovation and sustainability (e.g. Yakovleva and Flynn, 2004; Martindale, 2010; Rueda et al., 2017; Behnam et al., 2018). Furthermore, there has been only limited empirical research on SOI in the food SC that can fully include meaningful insights for SC actors and especially the focal actors (Omta, 2002; Carter and Easton, 2011; Ahi and Searcy, 2013; Beske et al., 2014).

In food SC, retailers can be considered as Corporate Entrepreneurs (CE), which reflects dynamic entities ready to exploit new business opportunities (Kuratko et al., 2012). Although entrepreneurship and innovation are flaunted as important strategies for an organization to succeed,

most organizations are not successfully implementing activities of corporate innovation (Kuratko et al., 2014). Thus, these CE's activities should be linked with different Human Resource Management (HRM) practices and activities (e.g. recycling, reusing and staff training) to enhance the sustainability performance of the organization in environmental, social and economic terms (Bowen and Ostroff, 2004; Boxall and Purcell, 2008; Kuratko et al., 2014). Where managers as human resource (HR) are trained for more responsibilities by experience in innovative internal initiatives (Birkinshaw, 1997). According to Veronica et al. (2013), those managers could be intrapreneurs since they work towards the interest of their organization and yet focus on creativity and innovation. Organizations that develop and invest in intrapreneurship can implement innovation processes, leading to innovative services, products and performance outcomes (Veronica et al., 2013). Furthermore, although organizations have activities with other actors across the SC at the dyadic relationship and network levels, usually they implement HRM at the firm level (actor level). Thus, there is a lack of understanding of organization development at all levels in order to have a greater involvement of all the members across the SC and enhanced outcomes (Gómez-Cedeño et al., 2015). As well as, a lack of understanding the role of HR in SC of retailers.

In this research, CE refers to medium-large organizations where the SC actors can apply innovative activities to be competitive. An attempt has been made to understand SOI in food SC, where organizations of retailers are selected from the food SC context in Jordan. This research aims to critically understand the role of entrepreneurship and HR in supporting SOI in SC of food retailers in Jordan. More specifically, the association between innovation orientation and sustainability orientation are explored and explained in order to develop, examine, and provide a novel conceptual framework. When it comes to innovation, this research focuses on innovations such as invented or adapted products, services, processes and technologies by retailers as CE for their benefits amongst other SC actors. There is also an examination of how those actors can achieve higher levels of sustainability performance. More importantly, this research evaluates the phenomenon SOI in food SC through theoretical perspectives, namely SCM, network, entrepreneurship, innovation and sustainability. SCM is used as a foundational perspective amongst these perspectives, and the other perspectives are incorporated to understand SOI in food SC. The empirical work has been conducted from the perspectives of food retailers in Jordan.

In this chapter, the present research background, research problem and motivation and empirical and theoretical context are highlighted. The rationale of the research and the significance of the research are outlined. This is followed by a discussion of the research gaps and research aim, questions and objectives. Finally, the structure of the thesis is outlined.

1.2 Research Problem and Motivation

The background motivation for this research started with the personal motivation of the researcher and experience in the field of SCM, network, entrepreneurship, innovation and sustainability. The motivation for this research has been derived from several factors and problems.

There was a recent report on Jordan's Response Plan that took notice to the significance of sustainability and innovation in the food and agricultural industries for an improved future, food security (JRP, 2016) and sustainability performance since the Jordanian Government provides regulations for food retailers that support and reinforce sustainability (MoA, 2017; DoS, 2018). Which led the researcher to be interested in understanding SOI in food SC of Jordanian retailers.

Managing SOI in food SC in developing countries, for example Jordan, encounter several challenges (MoA, 2017; FAO, 2018). Relationships and networks between actors across the food SC is essential for efficiently implementing innovations in order to enhance sustainability (Bellamy et al., 2014). Another challenge is that the actors, especially the focal actor, do not understand the complete scope of SOI and how the role of entrepreneurship and innovations can benefit them to enhance sustainability. A further challenge is that the SC actors do not fully understand what the role of HR is and how they can benefit from them (Gómez-Cedeño et al., 2015). Therefore, this supports the necessity to understand SOI in food SC from the perspective of focal actors, retailers as corporate entrepreneurs. This reflects an integrative framework and the options available for innovation for improving sustainability performance within the national and international retailers.

The researcher has identified key problems that motivates this research which is the management of food SCs are still unable to fully respond to the growing trends of innovation and sustainability (e.g. Al-Oun, 2008; Al-Zu'bi, et al., 2015). Actors are not fully able to develop and implement SOI in food SC as an integrative framework (e.g. Wilhelm et al., 2016; Luo, et al, 2018). The retailers in Jordan are unable fully to manage their food SCs with a focus on SOI as a key successful strategy. Jordan is in a rapid change of its retailing industry especially in urban areas in order to fulfil continuous growing of demand due to high increased number of population and also having several nationalities who have moved from neighboring countries to live in Jordan (DoS, 2018). The food SCs in Jordan have grown greatly over the past few years and has supported a boom by establishing mass retailers in the urban cities with an adoption of national and international standards and policies (JRP, 2016; MoA, 2018). Hence, this research identifies these problems to provide managers and governments involved in food SCs with recommendations and insights. This research focuses on SOI from the perspective of retailers as focal actors, in addition to their business relationships and networks in order to respond to requirements in the Jordanian food SCs.

1.3 Research Contexts

1.3.1 Empirical Context

1.3.1.1 Food Supply Chain in Jordan

The empirical context of this research is the food SC in Jordan. Jordan is an Arab Kingdom on the East Bank of the Jordan River in Western Asia. It is a developing country with a population of approximately ten million (DoS, 2018). It is acknowledged as a country of 'high human development' with an 'upper middle income economy' (El-Said and Becker, 2013). The country is one of the smallest economies in the MENA region, and interests foreign investors due to its 'skilled workforce' (Khraim et al., 2011, MoA, 2018). Jordan is a major tourist destination, with a tourism revenue of approximately 3 billion USD in the first half of 2019 (MoTA, 2019). Jordan has limited natural resources and has a large flow of refugees (El-Said and Becker, 2013; DoS, 2018). The Kingdom of Jordan consists of 12 governorates, with Amman as the capital (Figure 1.1).

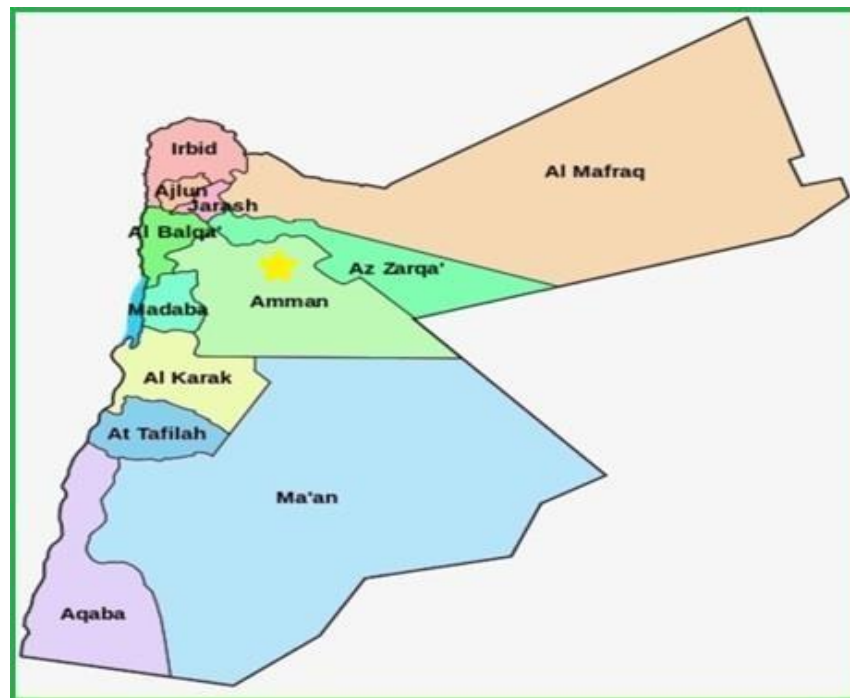


Figure 1.1: Map of Jordan- 12 Governorates (DoS, 2018)

As a result of Jordan's strong leadership, their highly educated population and active private sector, Jordan is viewed as a modern and liberal model for developing countries in the region (MoPIC, 2017). Jordan has major growth in modern food retailers since its population is growing. Jordan has a one-of-a-kind geographical location, making it a natural path for growth in the region in addition to being a convenient destination for tourists and shoppers from abroad. It has the capacity for future growth, and its government and private sector cooperating in refining their legislation and resilience (DoS, 2018). The first language of Jordan is Arabic and the second is English. Amman has a population of roughly four million (Figure 1.2) and is geographically in the center of Jordan; it is

easily accessed from all governorates, with an average of a one-hour drive. Therefore, the food retailers in Amman are the focus of this research, since the major retailers as well as their departments e.g. HR department, are located in Amman.

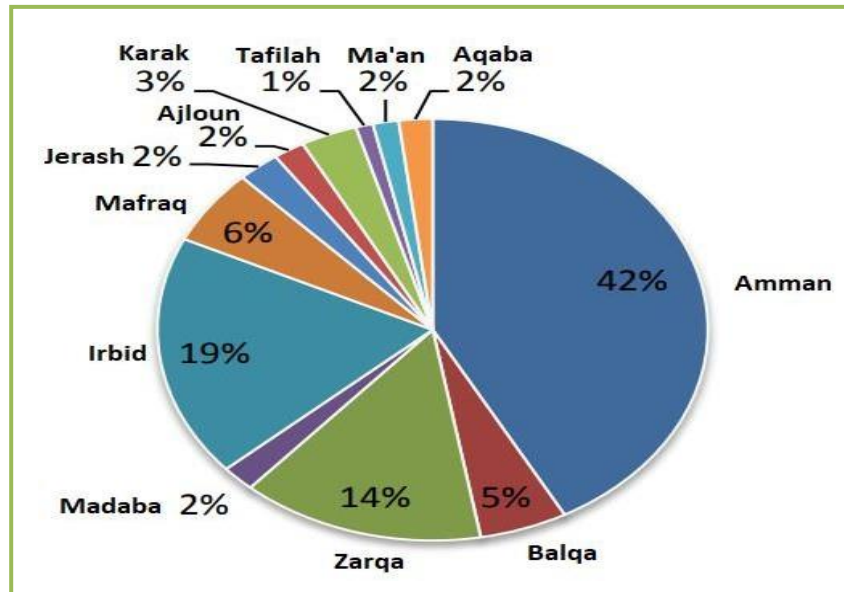


Figure 1.2: Statistics Population of the 12 Governorates of Jordan (JIC, 2017)

In the Jordanian food SC, the retail sector is increasing dramatically due to high demand for food supplied by large and well-established retailers (Khraim et al., 2011, MoA, 2018) and the population growing rapidly, especially in urban areas within the country and welcoming citizens from neighboring countries to live in Jordan (DoS, 2018, MoA, 2018). The food and retail SC in Jordan has grown significantly over the past few years and has established mass retailers in the urban cities (Al-Oun, 2008; Abdallah et al., 2014). Entrepreneurship has substantially been recognized as the engine which drives the society and economy (Carree and Thurik, 2000; Zvavahera et al., 2018). The interest in entrepreneurship has grown extensively to research over the past decade, as it has been claimed to be a significant advantage in surviving in a competitive market (Hitt and Reed, 2000; Kuratko and Morris, 2013). Entrepreneurs are rapidly rising since they start-up new enterprises as well as intrapreneurs conducting new strategic initiatives in present enterprises. Hence, studying the actors across the SC as innovators and/or possible entrepreneurs is vital for understanding SOI in food SC. Particularly the role of retailers as innovative entrepreneurs in the food SC context in Jordan. HR in Jordan play an important role in retailers as they are connected to the majority of activities (e.g. staff training and recycling) and are involved with the relationships with other actors across the SC, which affects the performance of the organization (MoA, 2018).

According to the Department of Statistics (DoS) there were over 250,000 employees in the food and retail SC in 2016 (DoS, 2018). However, the number of entrepreneurial employees is unknown (CBJ, 2018; ACI, 2018). The Central Bank of Jordan (CBJ) estimated the food and retail SC in Jordan as accountable for about 10% of the GDP or nearly 1.6 billion USD of the overall total (CBJ, 2018). The gross value added (GVA) for food and retailers is approximately 1 million (DoS, 2018). Over the past ten years, the population has increased by approximately four million, from 6 million to a population of ten million, due to international employees and their families, conflicts in neighboring countries and the normal birth rate (DoS, 2018). As the population has increased the demand on the food SC has grown, thus Jordan's food retailers are poised for expansion (MoA, 2017). As customers shop at food retailers this refines the retail sector and leads retailers to be innovative due to the demand of customers (Goldman, 1993; Chaudhry, 2006).

A current report on Jordan's Response Plan has paid attention to the importance of innovation and sustainability in the food and agricultural industries for a better future and food security (JRP, 2016). Many studies have demonstrated the importance of in-depth analysis of food SCs and especially the growing number of well-established retailers in urban cities in Jordan (JNC, 2015). The food SC and especially retailers have focused on innovation and sustainability as they have implemented various products, processes, technologies and programs at their actor level and with other actors in their SC (UNIDO, 2011; WTO, 2013). Therefore, there is significant latitude to increase SOI in food SCs in Jordan; this is to maintain the relationships and networks between retailers and the other SC actors. This will better encourage innovative retailers to enhance their sustainability performance; environmental, social and economic issues.

Jordan's food retailer sector is significant, with a large range of international and local brands located across the Jordanian Kingdom. There are very limited number of retailers which are innovative and are considered corporate entrepreneurs and official bodies do not have full details about them (CBJ, 2018; ACI, 2018). The research targeted specific food retailers in Jordan which were involved in developing sustainability initiatives, have specialized capabilities, their application and achievements of innovation and sustainability, their cooperation with a large number of suppliers, their opportunities for advancement, economies of scale, their positive influence and their unique structure. In addition, these food retailers were chosen since they have a goal of enhancing their sustainability performance. The Jordanian Government provides regulations for food retailers that support and reinforce sustainability (MoA, 2017; DoS, 2018), hence sustainable development is supported by the Jordanian government as well as international bodies.

1.3.1.2 Sustainable Development in Jordan

Jordan has made achievements over the past decades on sustainable development, including social, environment and economic domains encompassing all areas of life and sectors (MoPIC, 2017). In fact, Jordan is one of the countries worldwide and in the Middle East to consider and apply the fulfilment of the Sustainable Development Goals (SDGs) (MoPIC, 2017, MoE, 2018, MoA, 2018). Jordan has strongly followed the Global Report by the UN Development Group (UNDG) in order to shape the Post-2015 sustainable development agenda for Jordan (MoPIC, 2017). Hence, Jordan is engaged at all levels in global and local consultations for the development of this agenda in order to present a roadmap to implementing the 2030 Agenda and the SDGs.

Jordan has established working groups to emphasize to all SDGs and these groups were built upon existing institutional frameworks from various private and governmental sectors. This was formed upon four pillars of citizens, society, business and government and five key concepts of people, planet, prosperity, peace and partnerships (MoPIC, 2017). Hence, Jordan is currently in the stage of implementation for the agenda with a focus on sustainable development, including sustainability and innovation orientations that support the scope of the present research on SOI in food SC.

1.3.1.3 Products in Food Supply Chain

Two products, Beef and Yogurt, are chosen for this research in order to study two SCs, Meat and Dairy, with the aim of understanding what innovations they implement to achieve better sustainability with the purpose of accomplishing worthwhile replication and triangulation.

As the population of Jordan increased, the consumption of beef has also grown: in 2010 the consumption was 32,000 MT CWE (Metric Ton Carcass-Weight Equivalent) and it became 43,000 MT CWE in 2017 (DoS, 2018). The cattle in Jordan have increased over the years: in 2013, the head count of cattle was approximately 44,000, and as of 2016 the head count was approximately 75,000 (DoS, 2018). In Jordan, the farmers use sustainable methods; the skins of the cattle are used to make decorative items (e.g. rugs) or are processed into leather to make fashion items (e.g. jackets, shoes); the milk is processed into dairy products such as yogurt, cheese and traditional Jordanian dairy products. The capability of Jordan to provide their own beef from their local production had a self-efficiency ratio (%) of 14.2% in 2016 compared to a 11.8% in 2013 (DoS, 2018).

There is a variety of dairy products in Jordan, from cheese, yogurt, pasteurized milk, flavored milk and yogurt, and traditional dairy products, such as labaneh, jameed, jbnah, shaneneh, zbnah and gee. This research focuses on yogurt due to its high demand. According to the Amman Chamber of Industry, there are approximately 34 firms in Jordan that produce yogurt from cows (ACI, 2018).

1.3.2 Theoretical Context

The theoretical context of the research has been established based on several perspectives. These are the SCM, network, entrepreneurship, innovation and sustainability perspectives, which are relevant to examining the research problem in that it evaluates the phenomena of SOI in food SCs. For the present research, the researcher argues that SCM is used as the main theoretical foundation with the facility to integrate the theoretical perspectives (network, entrepreneurship, innovation and sustainability). The study aims to contribute to the body of knowledge related to SOI in food SC supported by the analysis of these perspectives and then by demonstrating the empirical insights from the analysis of retailers as innovative entrepreneurs with the support of their HR. Similarly, this research confirms the capability of the actors across a SC to implement SOI in order to improve their sustainability performance.

In fact, there was no conceptual framework that was derived from specific combinations of the high-order themes of the four perspectives, which can be drivers to SOI in food SCM. Thus, previous literature has highlighted a need to combine constructs as a key contribution of the four perspectives that aid our understanding of the food SC of retailers with SOI as a key phenomenon. For example, network perspective has themes of actor, resources and activities (e.g. Hakansson and Johanson, 1992; Harland, 1996; Miemczyk et al., 2012; Roscoe et al., 2015; Esfahbodi et al., 2016) to be examined at the actor, dyad and network levels in the SC. Entrepreneurship perspective includes themes of corporate entrepreneurship, intrapreneurs, and entrepreneurial HR (e.g. Bosma et al., 2010; Khan et al., 2013; Nason et al., 2015; Gómez-Cedeño et al., 2015). *Human Resource (HR) is the backbone of every organization* (Khan et al., 2013, p. 179). Since HRM (human resource management) deals with issues related to organization development, performance management, employee motivation, training, safety, compensation and sustainability (Leopold et al., 1999; Boxall and Purcell, 2008), they have a great understanding of the innovations that are implemented in their enterprise that achieve high sustainability. They are aware of their relationship with other actors at the actor, relationship and network levels. Innovation perspective consists of themes of product, process and organizational innovations (e.g. Pesonen, 2001; Hall et al., 2008; Bos-Brouwers, 2010; Martín-Tapia et al., 2010; Klewitz and Hansen, 2014) to be key drivers in food SCs. Sustainability perspective reflects high-order themes of environmental, social and economic issues (e.g. Shepherd and Patzelt, 2011; Slaper and Hall, 2011; Choi and Ng, 2011) to be considered at the actor, dyad and network levels in the SC. Therefore, this research has reviewed previous literature and scholars related to the phenomenon of SOI in food SC.

1.4 Rationale for the Research

The main rationale for conducting this research is based on the premise of SOI in SC with the purpose of identifying the main aspects of SOI that contribute to an effective and sustainable SCM and to suggest how the adoption of SOI along the SC can enhance sustainable performance (Akhavan and Beckmann, 2016; Adams et al., 2016; Neutzling et al., 2018). Many scholars have studied SOI from a multiple perspective viewpoint (e.g. the triple bottom line: environmental, social and economic issues) and from different theoretical streams (e.g. SCM, network theory, industrial organization theory, innovation theory, circular economy theory, transaction cost theory) (Schaltegger, 2002; Klewitz and Hansen, 2014; Lii and Kuo, 2016; Goodman et al., 2017).

Several authors have suggested that the research on SOI in SC should be empirically expanded to not just the vertical SC but to the actor, dyad and network levels to gain more knowledge and insights (Wilhelm, 2011; Bellamy et al., 2014; Pathak et al., 2014). A number of studies have called to use entrepreneurial approaches to develop rich understandings of how SC actors integrate the activities at the focal actor and with other actors across the SC (e.g. Miemczyk et al., 2012; Roscoe et al., 2015; Gómez-Cedeño et al., 2015). A few studies have also focused on the concept of entrepreneurial HR, where managers embrace entrepreneurial thinking and push themselves to take risks and to be innovative (Medcof and Song, 2013). Some studies suggest that HR and SCM plays an important part in creating value in the SC (Khan et al., 2013). Various scholars have proposed studying the innovations in the SCM and their influence on it (Bellamy et al., 2014; Akhavan and Beckmann, 2016). Several authors have studied innovation in the food SC from different areas, such as the food SC inducing innovation by means of technology, including product, information and process technology (Beamon, 1998; Croom, 2001; Leat and Revoredo-Giha, 2013; Rueda et al., 2017). Much of the literature on SCM studied one or two of the sustainability performances but very few considered all three: environmental, social and economic (Beske, 2012; Beske and Seuring 2014; Beske et al., 2014).

Hence, the majority of the literature and research on SOI in SCM was considered from one or two perspectives and there were overlaps amongst their key themes. Therefore, it is important to understand SOI in food SC by combining key theoretical perspectives based on their high-order themes by gaining empirical perspectives at different SC levels from possible entrepreneurs who work towards innovation and sustainability development.

1.5 Significance of the Research

For the present research, the food industry, which satisfies the necessities for a dynamic business environment, was chosen (Lambert, 2008). Firstly, it is always under inspection by the public as a key issue for nutrition and food security (Faerne et al., 2001; Manning et al., 2006). Secondly, the environmental, social, and economic aspects of sustainability for food activities are regularly reported by government, international and local agencies (Hassini et al., 2012). Thirdly, entrepreneurial innovative methods, products and processes are implemented in the food industry (Bellamy et al., 2014; Rueda et al., 2017; Behnam et al., 2018). Fourthly, due to the complexity of a supply chain and its interdependent nature, undertaking a network approach contributes to valuable understandings of the numerous interactions proceeding at the chain levels: actor, dyad and network (Choi et al., 2001; Borgatti and Li, 2009; Bellamy et al., 2014). From the actors of food SCs, retailers as CE have been chosen to be studied in this present research since, “*whoever has the relationship with the end-user has the power in the supply chain*” (Lambert, 2008, p. 6). Hence, this identifies retailers as case studies in the context of food SCs in Jordan.

From a theoretical contribution, this research links between key theoretical perspectives, namely the SCM, network, entrepreneurship, innovation and sustainability. It is based on these perspectives to understand SOI in food SC, identifying the key themes and examining of SOI for an effective SC and better sustainable performance (Adams et al., 2016; Neutzling et al., 2018). More specifically, the association between innovation orientation and sustainability orientation has been evaluated with the intention of constructing a novel holistic conceptual framework to be used in future empirical research of SOI in food SC. This research will contribute to the body of knowledge of key theoretical perspectives, by demonstrating the orientation of SOI in SCM in perspective to retailers as innovative entrepreneurs.

From a methodological contribution, this research will bring a holistic design to analyze SOI in food SC, including triangulation and replication at three levels: actor, dyad and network. This context is unique since there has been no research conducted in Jordan that combines these perspectives to explain SOI. From the empirical context view, this research contributes to evaluating the food SC context in a developing country and in a retailing industry.

From a managerial implication, this research makes key contributions to management practices and policy makers by highlighting the empirical benefits and challenges to the management of SOI. The research provides the participants’ perceptions and key observations, examining key themes that may support the success of SOI in food SCs of retailers.

1.6 Research Gaps and Aim

1.6.1 Research Gaps

In previous research, there has been little theoretical understanding of how SOI in food SCs can, for example, offer a potential approach to providing the essential associations between innovation orientation and sustainable orientation (Adams et al., 2016; Shah and Ganji, 2017). There has been disagreements as to which high-order themes should be used by most of the theoretical perspectives to understand SOI in SCM, such as network, entrepreneurship, innovation and sustainability (e.g. Yakovleva and Flynn, 2004; Martindale, 2010; Rueda et al., 2017; Behnam et al., 2018). In conceptual and empirical scholar research, there were overlaps amongst the high-order themes used by most of these theoretical perspectives to understand SOI in food SCM. Thus, there is a need to identify these themes in a holistic understanding in order to bring meaningful insights for SC actors and especially the focal actors (i.e. food retailers). The majority of the empirical research on SCM studied one or two of the sustainability aspects but very little evaluated all three sustainability performances (Borgatti and Li, 2009; Beske et al., 2014).

The previous conceptual and empirical works examined SOI in SCM (e.g. De Vargas Mores et al., 2018; Neutzling et al., 2018), however, a few studies have focused on the three levels of focal actor, dyad and network in food SC (e.g. Beske, 2012; Rueda, et al., 2017). There is a need to understand views in a holistic way along the SC to provide key conclusions in SCs of retailers with a focus on the phenomenon of SOI. The growing retailers in Jordan are in need of evidence of the applicability of a SCM framework associated to SOI's improvement. Thus, a well-designed methodology of validity and reliability is needed to gain rich data that will allow a balance between theory building and empirical analysis (Yin, 2018).

1.6.2 Research Aim and Questions

The aim of this research is to critically understand the role of entrepreneurship and HR in supporting SOI in SC of food retailers in Jordan. More specifically, the association between innovation orientation and sustainability orientation is explored and explained in order to develop, examine and provide a novel conceptual framework. It also provides managerial recommendations concerning the applicability of SOI in food SC.

This research will critically examine and evaluate the phenomena of SOI in food SC in Jordan through the SCM, network, entrepreneurship, innovation and sustainability perspectives to allow a comprehensive analysis at three levels: focal actor and their dyad and network. The empirical work is conducted from the perspective of food retailers based on a two-stage approach in this qualitative research. First stage, eight expert interviews of HR managers and academic researchers were

conducted. Second stage, a multiple-case study, including 30 semi-structured interviews, 18 observations and secondary data from six case studies of retailers. The unit of analysis is the SC of food retailers including the meat SC and dairy SC, specifically beef and yogurt products.

With regards to analyzing the literature and the research scope, the following key research question (RQ) is addressed:

RQ- How are retailers supported by entrepreneurship and HR to establish and enhance SOI along their food SC in Jordan?

- a- How are networks and dyadic relationships formed by retailers, as focal actors, to achieve SOI in the food SC?
- b- How are focal actors associated to build an enterprise of innovation based on entrepreneurship, as the first stage of SOI at three levels in the food SC?
- c- How are innovative enterprises linked to innovative activities in order to build an enterprise of SOI at three levels in the food SC?
- d- What are the capabilities of focal actors towards SOI to enhance their sustainability performance at three levels in the food SC?

RQa is attained by network perspective, on how the actors across the SC work towards establishing their focal actor, dyads (relationships) level and network level (e.g. actor position, resources and activities) towards achieving SOI. RQb has been concluded from entrepreneurship perspective to identify how focal actors apply entrepreneurship (e.g. corporate entrepreneurship, intrapreneurs and entrepreneurial HR) at the actor, dyad and network levels and to establish and develop SOI. RQc is derived from innovation perspective on how focal actors apply innovation (e.g. product, process and organizational) at the actor, dyad and network levels and to develop and implement SOI. RQd is derived from the sustainability perspective, how sustainability performance (e.g. environmental, social and economic) is achieved and enhanced by focal actors at the actor, dyad and network levels by implementing SOI.

1.6.3 Research Objectives

The research objectives have been selected based on enabling the best answers for the research questions (Yin, 2018). A qualitative methodology, including expert interviews and multiple-case studies will be conducted at food retailers with HR managers and different management departments, in order to answer the research questions. The research objectives (RO) have been derived as follows:

RO1- To identify the theoretical themes by reviewing and synthesizing prior literature that highlight the role of SOI in food SCs.

RO2- To critically explore how entrepreneurship and HR support their retailers to establish and enhance SOI along their food SC.

RO3- To analyze the creation of network level (e.g. actor, resources and activities) by retailers as focal actors and their dyads to achieve SOI in the food SC.

RO4- To critically understand the link between entrepreneurial innovative enterprises and innovative activities, in terms of product, process and organizational innovation, in order to build an enterprise of SOI in the food SC.

RO5- To evaluate the capabilities for SC actors (e.g. environmental, social and economic factors) of SOI to achieve their sustainability performance at all three levels in the food SC.

RO6- To develop a holistic conceptual framework to understand SOI in food SC.

1.7 Structure of the Thesis

The thesis consists of seven chapters. Figure 1.3 illustrates the structure of the thesis.

Chapter 1: *Introduction*: presents the research background and problem. Both empirical and theoretical contexts are illustrated. The aim, rationale and scope of the research are outlined.

Chapter 2: *Literature Review*: a systematic review of the literature on SCM is reviewed, as well as the phenomenon of SOI, along with the other relative perspectives: network, innovation, entrepreneurship and sustainability. Lastly, the identification of key research gaps and an initial conceptual framework are established.

Chapter 3: *Research Methodology*: the research philosophy, approach, qualitative methods and case study strategy undertaken is explained and justified. This chapter also includes the research design, data collection, data analysis, research quality and ethical considerations.

Chapter 4: *Expert Interview Findings, Discussion and Proposed Conceptual Framework*: includes expert interview findings including the refined conceptual framework and key themes. It provides the proposed conceptual framework.

Chapter 5: *Case Study Analysis and Findings*: presents the analysis of interviews, observations and documentaries and their findings for each case study. It explores and examines the proposed conceptual framework in each case.

Chapter 6: *Cross-Case Analysis, Findings and Discussion*: presents the analysis and findings across-case studies and provides the final holistic conceptual framework.

Chapter 7: *Conclusion*: a summary of the previous chapters and the findings is provided. Contributions, limitations, and suggested future research are outlined.

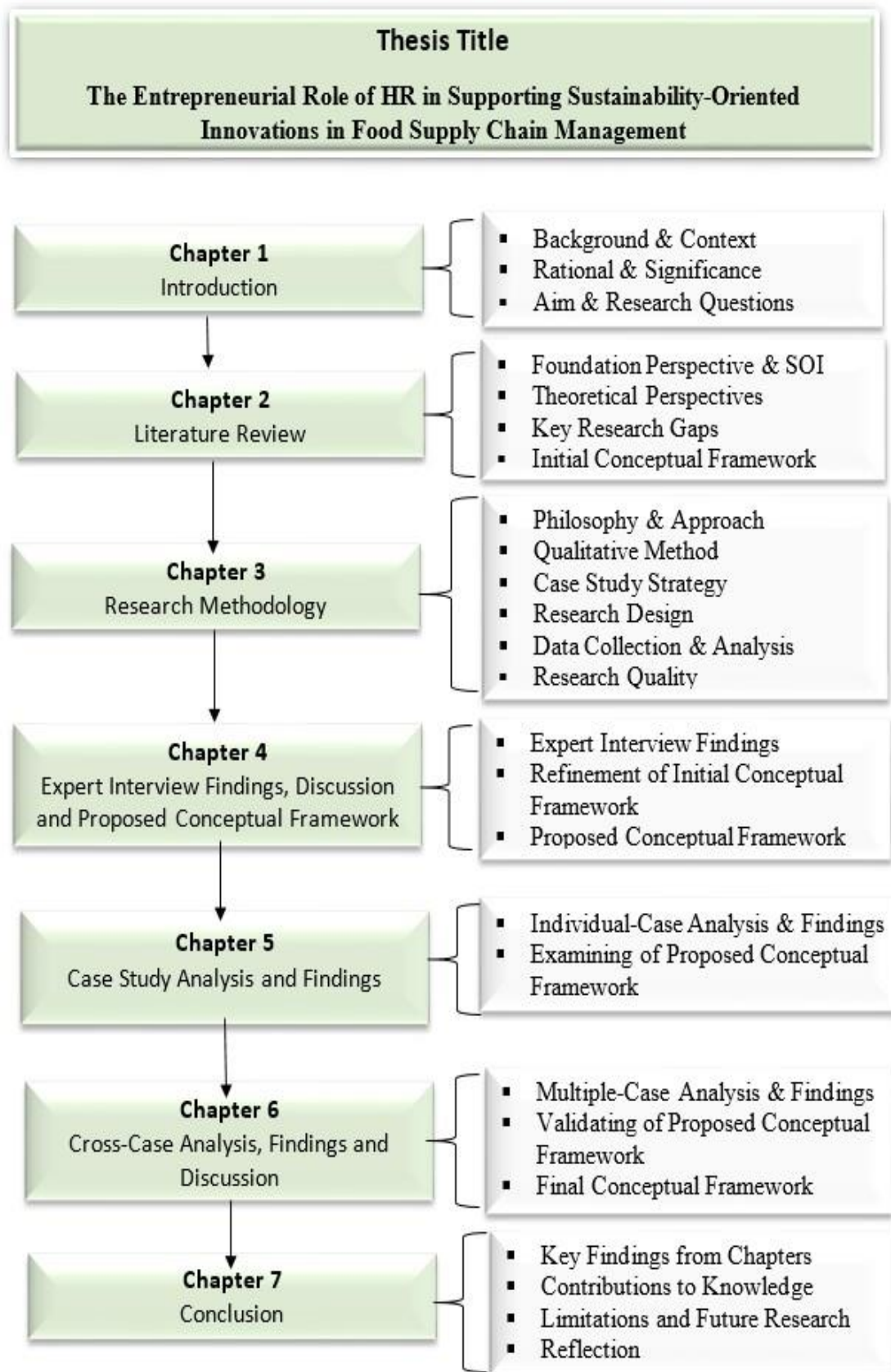


Figure 1.3: Thesis Structure (Author's Own Work)

1.8 Conclusion

This chapter provided an overview of the research background and problem and empirical context as well as the theoretical context. Followed by the rationale for the research, significance of the research, research gap and research aim, questions and objectives. Finally, the structure of the thesis was presented. The next chapter, the literature review, will provide the background and theoretical framework upon which this research is based.

Chapter Two: Literature Review

2.1 Introduction

This chapter provides the literature review of this thesis, which is outlined in two parts, namely the background literature review and the key theoretical perspectives. The first part undertakes a background literature review of the foundational theory, which is the Supply Chain Management (SCM) perspective, including the development of SCM, levels of SC, Sustainable SCM (SSCM) and Sustainable-Oriented-Innovation (SOI) in food SC. This review is carried out for two reasons: to explore the underpinning theories and concepts and to highlight a research gap that will lead to identifying key theoretical perspectives. The second part is the key theoretical perspectives. It addresses the field of enquiry and is directly related to the research problems. There are four theories, namely the network, entrepreneurship, innovation and sustainability perspectives, which are reviewed to identify and specify the research gaps and expand on theoretical aspects concerning the research gaps. This in turn supports the justification of the topic and informs the data collection and analysis for this research.

In Chapter 1, the research problem of this thesis centered on the lack of in-depth understanding and analysis of SOI in food SC from the perspective of Jordanian food retailers. The literature review therefore starts with a systematic literature review method **in Section 2.2** to describe how to critically analyze and evaluate the findings of all the relevant studies addressing the research gaps and questions. In **Section 2.3**, SCM is reviewed as the foundational perspective for guiding SOI in SCM, where this fundamental perspective is attached to a research gap. **Section 2.4** then reviews four key perspectives: network, entrepreneurship, innovation and sustainability, which are incorporated to understand SOI in SCM by addressing specific research gaps (see section 1.6). This offers discussions and justifications on how these perspectives and their high-order themes support SCM as a theoretical underpinning by linking innovation orientation with sustainability orientation, in turn creating quality sustainability performance in the SC. In **Section 2.5**, there is an analysis of the interconnections of the four key perspectives and their ability to better explain the phenomenon of SOI in SCM. This section provides identification of the specific research gaps to inform the present research questions and an outline of an initial conceptual framework. In **Section 2.6**, a conclusion is drawn to summarize the pithiest points of the chapter.

2.2 Method of Literature Review

Rigorous research can only be conducted in association to existing knowledge. Hence, a necessary part of the research process is the literature review (e.g. Easterby-Smith et al., 2002; Brewerton and Millward, 2001; Saunders et al., 2012, Bryman and Bell, 2015). Fink (2005, p. 3) defines a literature review as “*a systematic, explicit, and reproducible design for identifying, evaluating, and interpreting the existing body of recorded documents.*” The aims of literature reviews are summarizing and evaluating existing research in a certain field and identifying knowledge gaps in order to contribute to theory development (Meredith, 1993; Harland et al., 2006; Seuring and Gold, 2012). Accordingly, Kitchenham (2004, p. iv) defined a systematic literature review as “*... a means of evaluating and interpreting all available research relevant to a research question, topic area, or a phenomenon. Systematic reviews aim to present a fair evaluation of a research topic by using a trustworthy, rigorous, and auditable methodology.*”

A systematic literature review identifies, critically evaluates and combines the relevant findings to address the research questions. A systematic literature review aims at “*synthesizing research in a systematic, transparent, and reproducible manner*” (Tranfield et al., 2003, p. 207). A systematic literature review may reach the following aims or most of them (Baumeister and Leary, 1997; Baumeister, 2013; Danese et al., 2018): first, recognizing to what degree of the existing research clarified a certain problem, second, identifying in the literature any associations, gaps, and ambiguities and to explore reasons for them (for example, conceptualization or suggesting a new theory). Third, to create general statements or a significant conceptualization, fourth, to evaluate, develop or extend theory. Fifth, to provide implications for practice and/or policy; and finally, to discuss directions for future research. However, a literature systematic review needs access to extensive databases and peer-reviewed journals, which may be challenging, time consuming and very expensive. Also, it is impractical to read everything due to the amount of information, time and resource constraints (Seuring and Müller, 2008).

The aim of the present systematic literature review is to structure the research field on SOI in the context of food SC, to identify important gaps, to identify themes, and therefore contribute to developing theory (Tranfield et al., 2003). Five broad stages: planning, searching, extracting, synthesizing and reporting, were applied in this research in order to ensure the research is comprehensive and repeatable (Tranfield et al., 2003). This systematic literature review started by planning the review in terms of identifying the aim of the research and to prepare the review search concentrating on the rationale for the review questions of the aim. The current strategy conducted for this search focused on peer-reviewed articles published in the English language, found in

databases electronically, as McWilliams et al. (2005) suggested. Due to substantial and growing literature, boundaries for the review were set (Denyer and Tranfield, 2009), for publications of peer-reviewed articles in the past 20 years (1999-2019). Scholarly research which was prior to these years has been selected as classical articles for underpinning support. In addition, textbooks and other electronic sources are identified in this review. This covers the period of the growing popularity of research on SOI (Tranfield et al., 2003; Danese et al., 2018). To identify ‘key words’ and ‘search strings’ in online databases using a Boolean operator, is built by using OR, AND and AND NOT; in order to combine and/or exclude keywords in a search to result in more focused results.

To find relevant and suitable articles a review question was considered to guide the search process (Tranfield et al., 2003). The review question focused on in this search is: How do focal actors support SOI in food SCM? The search for literature and citations were conducted regarding the databases and related journals in the search. The search for the present research on ‘The Role of Entrepreneurship and Human Resources in Supporting Sustainability-Oriented Innovations in Food Supply Chain Management’ is based on key words or search strings used for gathering the search. The samples were based on key themes: sustainability, innovation, network, entrepreneurship, SCM, food SC, SOI and HRM. For further details, Appendix A shows a key combination of strings used in this search. The results from the literature search highlighted that articles are from multiple disciplines including supply chain and operations management, network, entrepreneurship, innovation, sustainability and HRM.

The review included several major databases (as seen in Table 2.1), the extent of these databases supported the goal of covering the relevant literature, providing a large number of publications based on the search strings and key words searched, better access to available publications and greater search consistency. Relevant studies from all the data sources were corresponded together for analysis that resulted in 1,798 peer-reviewed articles from several journals, with actually 152 being used (Table 2.1).

Table 2.1: Database Result of Current Research. (Author's own work).

The Role of Entrepreneurship and Human Resources in Supporting Sustainability-Oriented Innovations in Food Supply Chain Management			
Key Themes: SOI, Food SCM, Network, Entrepreneurship, Innovation, Sustainability and HRM			
Key Strings and Words: see Appendix A			
Inclusion and Exclusion Criteria: see Table 2.2			
Time Frame: 1999-2019			
Databases: Emerald, ScienceDirect (ELSEVIER), Web of Science			
Article Selection Process for SLR: Flow Diagram see Figure 2.1			
Database	Journals with the highest number of articles used	Article Results (First Hit)	Actual Articles Used
Emerald	<i>European Journal of Management and Business Economics</i>		
	<i>European Journal of Innovation Management</i>		
	<i>European Journal of Marketing</i>		
	<i>International Journal of Operations and Production Management</i>		
	<i>Industrial Management and Data Systems</i>		
	<i>Business Process Management Journal</i>		
	<i>Supply Chain Management: An International Journal</i>		
	<i>International Marketing Review</i>		
	<i>Industrial Management and Data Systems</i>		
	<i>Benchmarking: An International Journal</i>		
		481	39
ScienceDirect (ELSEVIER)	<i>Journal of Cleaner Production</i>		
	<i>European Journal of Purchasing and Supply Management</i>		
	<i>Resources, Conservation and Recycling</i>		
	<i>Industrial Marketing Management</i>		
	<i>Journal of Purchasing and Supply Management</i>		
	<i>Environmental innovation and societal transitions</i>		
	<i>Journal of Business Research</i>		
	<i>International Journal of Production Economics</i>		
		805	52
Web of Science	<i>Management Science</i>		
	<i>International Journal of Management Reviews</i>		
	<i>Industry and Innovation</i>		
	<i>Strategic Management Journal</i>		
	<i>Journal of Operations Management</i>		
	<i>Agriculture and human values</i>		
	<i>Academy of Management Journal</i>		
	<i>Journal of Business Logistics</i>		
	<i>Journal of Supply Chain Management</i>		
	<i>Journal of Operations Research</i>		
	<i>Production and Operations Management</i>		
		512	61
		Total: 1,798	Total: 152

The articles were chosen by the following steps:

- 1- Using keywords and strings (Appendix A), 1,798 articles were identified through database searching between 1999-2019.
- 2- The search results across the data sources were merged, thereby removing multiple entries in the process. After duplicates were removed there were 1,355 articles.
- 3- Then the articles were read based on pre-determined inclusion and exclusion criteria (Table 2.2). Irrelevant articles were also removed based on scanning the titles and abstract of articles. Through this process 1,052 articles were rejected and 303 articles were selected for full-text screening.
- 4- The articles that were chosen were reviewed sensibly in order to examine the research methods, theories and content. Hence, 151 articles were rejected.
- 5- Finally, 152 articles were retained for the entire review.
- 6- It was noticed that it was possible that some publications have not been considered due to their failure to address the keywords searched for in their titles or abstracts, hence several highly relevant articles were manually added by conducting an additional search (Schaltegger, 2002; Parrish and Foxon, 2009).

The reviewed literature covered theoretical and empirical studies. By applying quality criteria and assessments, the researcher chose the articles that were actually used, this included: theory, methods, research design, relevance across theories, findings and any implications which are associated to the review scope. By applying rounds of inductive and deductive coding, the researcher extracted inductively from each article: definitions, methods, research design, philosophical perspectives, data collection, data analysis and findings for SOI, SCM, network, entrepreneurship, innovation, sustainability and HRM.

Table 2.2: Inclusion and Exclusion Criteria for SLR (Author's own work).

Inclusion/Exclusion Criteria	Rationale
Inclusion Criteria	
Publications from 1999-2019	To ensure the validity of the content in the articles. This period is appropriate for the author to observe the growing trend of SOI in food SCM, as well as network, entrepreneurship, innovation, sustainability and HR complementing the phenomenon.
Publications selected from peer-reviewed journals	To ensure the high quality of the articles.
SOI, SCM, network, entrepreneurship, innovation, sustainability and HRM	Main areas of literature.
Exclusion Criteria	
Non-English language journals	Researcher's language limitation.
Articles that considered other theories	Research is focused on SOI in food SCM as well as network, entrepreneurship, innovation, sustainability and HR complementing the phenomenon.

From the articles that were used, key articles were chosen and categorized according to the aim of the study, themes, methods, industry, country, findings, future research, year of publication, authors and journal (Tables 2.7, 2.9, 2.11 and 2.14). From the literature, the key themes were identified and their discussions were summarized, by conducting this process it helps reduce bias and provides a synthesis of the knowledge base (Denyer and Tranfield, 2009; Pilbeam et al., 2012; Ketokivi and Choi, 2014). Consequently, the researcher used a checklist to confirm the themes of the articles to make certain the literature was treated commonly hence to ensure each article was examined the same way and systematically. The methodology, findings and validity were summarized as well for the synthesis. The synthesis is conducted with the intention to systematically describe and integrate the findings based on organizing the studies into categories (Ketokivi and Choi, 2014). Analyzing the findings within each category and synthesizing the findings across all studies (Beelmann, 2006; Danese et al., 2018), allowed a conceptual framework and triangulation to be used to attain more robust insight from the studies. Furthermore, to find relevant textbooks and other materials, the same procedure was conducted using the same key words and search strings. To conclude, reporting the review makes it possible to understand the topic with better access to the empirical evidence and the aggregate conclusions, including research gaps and research questions about the foundation of SOI in SCM. As Thorpe et al. (2005, p. 261) pointed out *“the adoption of an explicit and rigorous approach to reviewing allows others to understand how and why studies were selected and themes build up.”*

See Figure 2.1 for a Flow Diagram of the present systematic literature review, which illustrates the phases of the review and outlines the number of records identified, excluded and included.

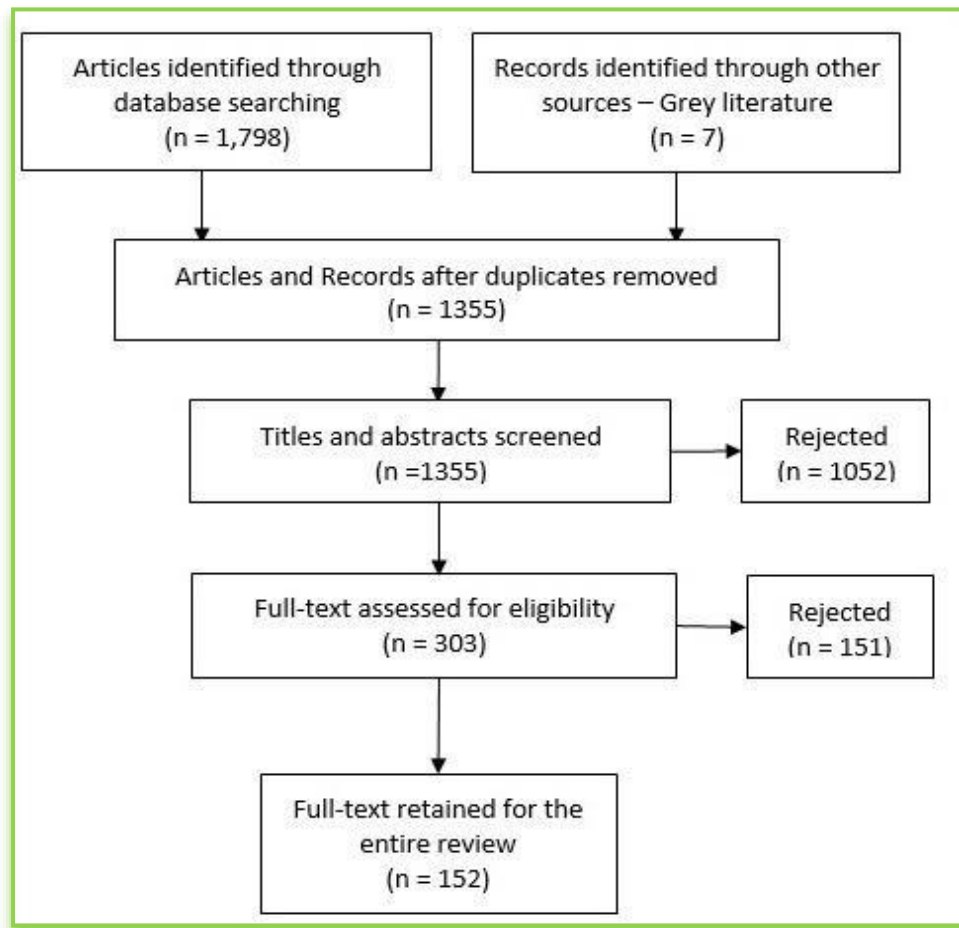


Figure 2.1: Flow Diagram of Article Selection Process for SLR (Author's own work)

From the systematic literature review findings, there are many scholars who have studied SOI from multiple perspectives and from different theoretical streams (see Tables 2.7, 2.9, 2.11 and 2.14) for example research available on the perspectives (network, entrepreneurship, innovation and sustainability) in SCM). However, there has been little theoretical understanding of the role of entrepreneurship and HR in supporting SOI in SC (e.g. Pandey et al., 2012; Luqmani et al., 2017) of food retailers in Jordan and how SOI in food SCs can offer a potential approach to providing the phenomenon of SOI. Based on the findings of the systematic literature review, see **Section 1.6** for the research gaps, **Section 2.5.1** for the identification of key perspectives and their high-order essential associations between innovation orientation and sustainable orientation (Adams et al., 2016; Shah and Ganji, 2017). Hence, this research is important to critically understand views holistically along the SC to provide key conclusions in SCs of retailers with a focus on the themes, **Section 2.5.2** for the key empirical associations and **Section 2.5.3** for the identification of specific research gaps. The gaps found in previous literature has led to deriving the research aim, questions and objectives (see Chapter 1, **Section 1.6.2**).

2.3 Background Literature Review-Supply Chain Management (SCM)

SCM is discussed and explained in this section. It explains the most central concepts and terms underlying the present research. The research problem posed in this thesis is the lack of a full understanding of the growing trends of innovation and sustainability and their interdependency in SCM. More importantly, prior conceptual and empirical research has done little to examine how SOI in food SCs can offer a potential holistic framework to provide associations between innovation orientation and sustainable orientation for better sustainability performance. The perspective of SCM (e.g. Ellram and Cooper, 1990; Christopher; 1992; Lambert et al., 1998a; Harland, 1996; Christopher and Towill, 2002; Tan, 2002; Yakovleva and Flynn, 2004) is the foundation framework in the present research (Figure 2.2). In the following sections, related bodies of literature are reviewed to understand SCM, especially SOI in the food SCs of retailers. **Section 2.3.1** discusses the development of SCM and the conceptualization of food SCM, **Section 2.3.2** adds a discussion on the levels of food SC, especially the structure of food SC at the actor, dyad and network levels, **Section 2.3.3** provides discussions on food sustainable SCM (SSCM) by introducing the concept of sustainable development and the importance of sustainability performance in food SC, and **Section 2.3.4** introduces and explains the concept of SOI in food SC as the central phenomenon of the present research.

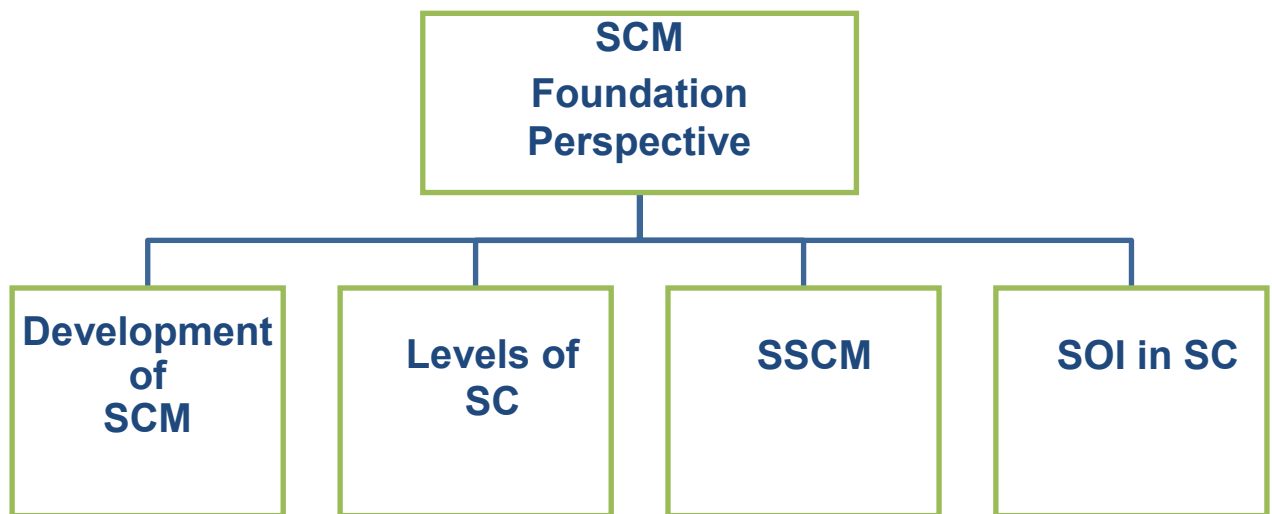


Figure 2.2: Literature Review- Foundation Perspective of SCM (Author's Own Work)

2.3.1 Development of Supply Chain Management (SCM)

2.3.1.1 Evolution of SCM

During the 1950s and 1960s, several manufacturers highlighted mass production to decrease unit production costs as the main operations strategy, by means of minimum process or product flexibility (Yuva, 2002). Through the 1970s, managers realized the development of material requirements planning impacted on cost, product development, manufacturing, and delivery lead-time (Yuva, 2002). Therefore, manufacturers adopted new materials management concepts to enhance performance. In the 1980s, high global competition forced firms to provide high quality, reliable and low cost products with better design flexibility (Harland, 1996). Hence, manufacturers started to realize the possible importance and benefit of strategic and cooperative buyer-supplier relationships. While manufacturers experimented with strategic partnerships with immediate suppliers, the SCM concept emerged. Additionally, professionals and logistics experts took the concept further in order to include the transportation, warehousing functions and physical distribution (Tan 2001; Barnes and Liao, 2012). In the 1990s, firms continued additional practices in managing corporate resources to comprise strategic suppliers and logistics function (Tan, 2002). Numerous retailers and manufacturers accepted the concept of SCM to enhance effectiveness and efficiency among the SC; they utilized supplier strength and technology to encourage new product development efforts (Morgan and Monczka, 1995; Barnes and Liao, 2012). Retailers collaborated with their logistics providers to attain store delivery directly without needing to undergo inspections (St. Onge, 1996). SCM also addressed the purchasing process, highlighting the fact that it is a fundamental strategic business process, rather than having simply a supporting role in the overall business strategy (Reck et al., 1992; Tan, 2001).

In the early 2000s, research on SCM expanded towards having the main focus on integration, customer satisfaction and business outcomes. In the perception of SCM, purchasing and supply comprise the previous functions of purchasing and supply management, but the perspective of transportation and logistics develops from the transportation and physical distribution functions of the retailers (Tan, 2002; Carter and Easton, 2011). SCM produces an organization, which consists of numerous functions with a common goal of effectively and efficiently managing its operations such as incorporating manufacturing, distribution, purchasing, and logistics management (Tan, 2001; Carter and Easton, 2011). The short-term objective of SCM is to maximize productivity and minimize cycle time and inventories, whereas the long-term goal is to maximize market share, customer satisfaction and the profits of the SC members (Tan, 2002; Carter and Easton, 2011).

The supply chain is seen as “an integrative philosophy to manage the total flow of a distribution channel from supplier to the ultimate user” (Ellram and Cooper, 1990, p. 2). The known components of the SC activities are raw materials, production, distribution, retailing, and consumption (Christopher and Towill, 2002). Raw materials are unprocessed materials from which a product is made, in order to make the material and inventory by the producer or manufacturer (Lambert et al., 1998a). The production component uses the raw materials to create inventories, whereas, distribution does not make its own products but purchases and resells these products (Mentzer and Kahn, 1995). Retailing is the process of selling goods or services to customers and satisfies demand over numerous channels of distribution to gain profit. Finally, consumption is the process of a product being purchased for personal use (Lambert et al., 1998a; Christopher and Towill, 2002). In Figure 2.3 there is a summary of the development of SCM. Although SCM has been explained in previous research, it has been formed in relation to relationships, networks and value creation for various actors along the SC (e.g. Lusch et al., 2010; Miemczyk et al., 2012; Esfahbodi et al., 2016; Petljak et al., 2018).

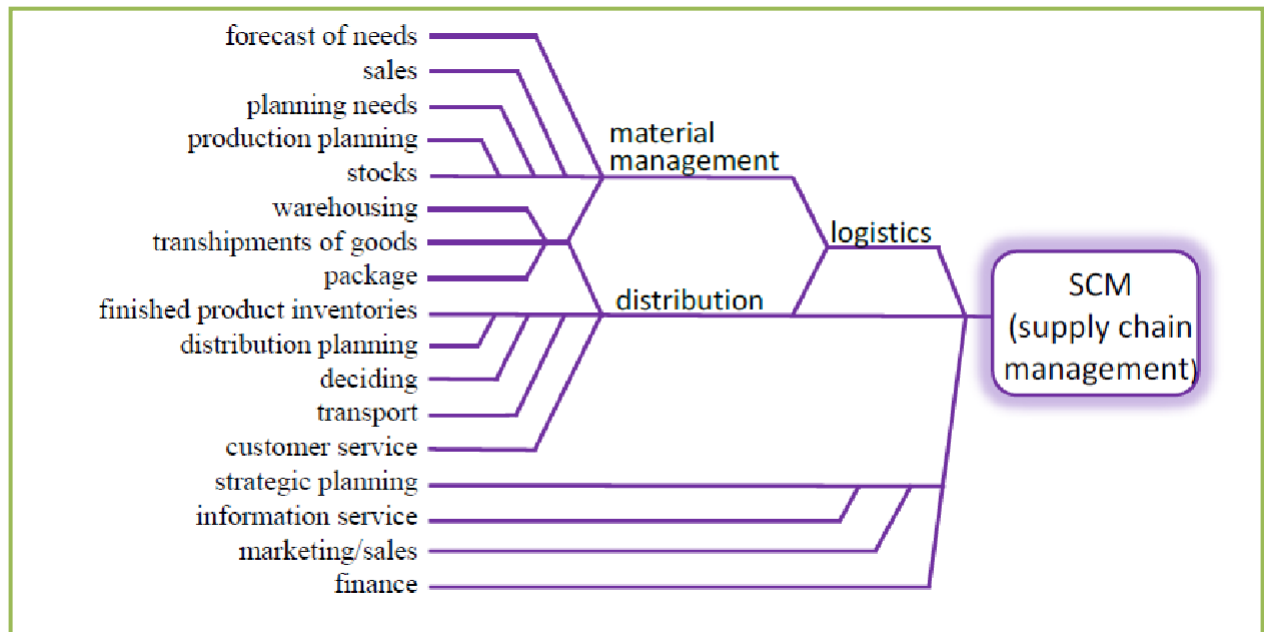


Figure 2.3: The Development of SCM. (Yuva, 2002, p. 50).

In terms of the SCM perspective, a recent advance is linked to the emergence of sustainable SCs, innovative SCs and entrepreneurial SCs. These new concepts have emerged as major pillars over the past years due to the growth of supported systems and interrelationships amongst various fields to support the structure of the SC, as can be seen from scholars (e.g. Gemünden et al., 1996; Harland, 1996; Omta, 2002; Bos-Brouwers, 2010; Carter and Easton, 2011; Beske and Seuring, 2014).

There are several perspectives related to the foundation of SCM. These are: innovation in SCM (Gemünden et al., 1996; Omta, 2002; Autry and Griffis, 2008; Revoredo-Giha et al., 2012; Bellamy et al., 2014), sustainability in SCM (Bos-Brouwers, 2010; Miemczyk et al., 2012; Beske and Seuring, 2014; Beske et al., 2014; Akhavan and Beckmann, 2016) and entrepreneurship in SCM (Benitez-Amado et al., 2010; Steward et al., 2010; Baruah and Ward, 2014; Nason et al., 2015). Numerous researchers have explored innovation in SCM (e.g. Revoredo-Giha et al., 2012; Neutzling et al., 2018). In various cases of innovation in SCM it is led by focal firms, which may be the most important actor that introduces new products, new services, technologies and/or processes (Revoredo-Giha et al., 2012; Rueda et al., 2017), and satisfaction of new demands (Omta, 2002; Revoredo-Giha et al., 2012). Many scholars have studied innovation in the SC from a multiple perspective viewpoint (i.e. the triple bottom line: social, environmental and economic) and from different theoretical streams (i.e. SCM and network theory).

One important research focus is on sustainability in SCM. Research and practical implementation have been increasing over the past ten years in this particular area (Seuring and Müller, 2008; Carter and Easton, 2011; Ahi and Searcy, 2013; Beske et al., 2014; Shah et al., 2017). Sustainability in SCM lets organizations apply corporate responsibility practices and produce a higher efficiency in logistics performance and resource usage while following the three dimensions of sustainability: environmental, social and economic goals (e.g. Gold et al., 2010; Beske et al., 2014). Furthermore, across the SC there are various firms carrying out specific tasks from raw material to the end-customer, and amongst those firms there are entrepreneurial actors, i.e. the retailers, which can add value to their firm and other firms in several ways, e.g. from products to processes. Entrepreneurship can be defined as a method that leads into expanding new business methods that create value along the way (Veronica et al., 2013; Baruah and Ward, 2014). Through the SC, these entrepreneurial retailers take risks in several ways to be able to compete against other firms. Therefore, these entrepreneurial retailers have entrepreneurial resources for effective implementation of SCM (Handfield et al., 2009). Entrepreneurial chains generate links between suppliers and customers based on innovative ideas and achieving sustainability (Kuratko and Morris, 2013; Nason et al., 2015).

2.3.1.2 Food Supply Chain Management-Food SCM

This section discusses the background of SCM from different perspectives, including the term food SCM. This is to shed light on the present definition of food SCM that is used for the present research. The SCM first emerged in the early 1980s (Harland, 1996; Braziotis et al., 2013). Koulikoff-Souviron and Harrison (2000, p. 344) stated "*while a consensus can be seen in the definition of the supply chain, there is a lack of harmony in the definitions of activities and types of relationships that are within the range of SCM.*" Hence, there is no specific definition of SCM due to the evolution of the concept and its multidisciplinary origin (Croom et al., 2000). Table 2.3 below features a sample of example definitions of SCM found in the analyzed literature.

Table 2.3: Example Definitions of Food/Supply Chain Management (SCM).

(Author, Year)	Definitions
Ellram and Cooper (1990, p.2)	"An integrative philosophy to manage the total flow of a distribution channel from supplier to the ultimate user."
Harland (1996)	SCM includes four levels: internal supply chain, the dyadic, the chain and the network
Tan et al. (1998)	Supply chain management includes materials and supply management from the raw materials supplier to the final product (and possible recycling and re-use).
Fearne (1998, p.513)	"In food SCM, retailers are the core member, which can be difficult customers to work with and are unwilling to enter supply contracts...It wants to develop preferred supplier status with firms"
Lambert and Cooper (2000)	SCM is the management of multiple relationships across the SC.
Mentzer et al. (2001, p. 4)	Describe supply chain as "the group of three or more companies or individuals, who are directly involved in the inward and outward stream of all products, cash, information from the purchasing to the customer".
Croom et al. (2000, p.67)	"SCM and similar concepts such as networking, supply pipeline and value chain have become subject of increasing attention [...]"
Van Der Vorst (2006b)	Food SCM refers to the management of relationships among the raw material supply for agricultural production, processing, logistics and distribution reaching retailing and end customer.
Cousins et al. (2008)	SCM is considered three stages: dyadic linkages, a chain of suppliers and supply network.
Paloviita (2009)	Food SCM is a group of entrepreneurs as actors share common perceptions regarding stakeholder influences on economic and environmental performance and where sustainable entrepreneurship is a market orientation.
Christopher (2011, p.13)	"Network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of ultimate consumers."
(Hugos, 2018)	The evolution of SCM is real-time and collaborative supply chains.
Luo, et al. (2018)	Food SCM in developing countries in need to understand sustainability and network building for better sustainability performance along the SC.

As SCM emerged, Oliver and Webber (1982) debated the possible benefits of integrating the business functions of purchasing, manufacturing, distribution, and sales. The knowledge of SCM increased in the 1990s (Braziotis et al., 2013). Many authors defined SCM from different perspectives. Berry et al. (1994, p.1), discussed SCM in terms of aiming at *“building trust, exchanging information on market needs, developing new products, and reducing the supplier base to a particular OEM (original equipment manufacturer) so as to release management resources for developing a meaningful, long term relationship.”* Tan et al. (1998) argue that SCM includes materials from raw materials to the final product, maybe even recycling and re-use, where firms make use of their suppliers' processes, technology and capability to extend traditional activities by bringing partners together with the common goal of optimization. Christopher (2011, p.13) defined SCM as a *“network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer.”*

Food SCM integrates all the actors that are working on the management of supply and demand for food products from the original to the end customers, including innovation strategies and sustainability orientations (Van Der Vorst, 2006b). Therefore, producers, distributors, manufacturers, retailers, wholesalers, exporters and importers and other chain service providers are responsible for working within relationships and networks to supply the final products adding sustainable value (Bourlakis and Weightman, 2004; Wilhelm et al., 2016). According to Van Der Vorst (2006a) and Luo, et al. (2018), food supply chains differ from other SCs due to some key features such as food quality, perishability, seasonality, weather conditions, labour skills, and recent innovative technologies, which are multifaceted and need all actors to bring sustainable performance into their products. Folkerts and Koehorst (1998, p. 1) define food SCM as *“a set of interdependent actors that work closely together to manage the flow of goods and services along the value-added chain of agricultural and food products, in order to realize superior customer value at the lowest possible costs.”* Fearne (1998) indicates that with the changing of consumer behaviors, food SCs are putting pressure on food retailers to innovate and become more consumer-led, hence supermarkets are asking different suppliers to build business relationships to join them for sustainable competitive advantage. According to Van Der Vorst (2006, a, b) and Luo, et al., (2018), food SCM are mainly studied in the context of developed countries and there are few studies from developing countries in the Middle East. However, different scholars should pay attention to understanding the concept of food SCM in developing countries as changes in consumer demand have led to various types of SCs emerging, including long and short SCs. Fearne (1998) has focused

on studying food SCs and how the retailers of meat SC work as partners with other chain actors forming relationships and networks to have a common innovation vision of how to keep market power on their side and respond to the new demand with a sustainability focus. Furthermore, the works of Revoredo-Giha et al. (2012) and Wilhelm et al. (2016) have explored the food SCM from the network perspective and indicated that the focal actors must work with other actors in order to establish a sustainable multi-tier food SCM. Revoredo-Giha et al. (2012) argue that the concept of food SCM is seen as a network of organizations, which have economic and social relationships that allow the SC to produce goods and services.

In food SCM, focal actors must have entrepreneurial characteristics to link entrepreneurship into their sustainable SC (Dean and McMullen, 2007). Paloviita (2009) discussed the concept of entrepreneurs who share common perceptions with food stakeholders who have an impact on sustainability performance and a focus on market orientation. Yakovleva and Flynn (2004) noted that food SCM is a scheme of stages that signify a specific order of economic activities, where materials and resources flow downstream for the production of goods and delivery of services for the end customer. Therefore, the usual food SC tends to involve the following stages: origin of the resource, agricultural production, primary processing, further processing, final manufacturing, wholesale, retailing, food service and consumption (Yakovleva and Flynn, 2004).

Having discussed the various conceptualizations above on SCM and food SCM, it is necessary to highlight the concept for the purpose of this topic; therefore, the concept of food SCM is:

‘Food SCM is the management of a network of multiple relationships across the SC that deals with the total flow through upstream and downstream linkages, where the focal actor has entrepreneurial characteristics, applies innovation and achieves sustainable performance.’ (Author’s own definition).

For the definition above, the interest of the present research is the retailer as the focal actor. The concept of food SCM identified for this research leads to a focus on key terms such as the levels of SCM, namely the actor, relationship and network, sustainable SCM and SOI. Across SCs, there are multiple actors’ relationships from raw materials to the end-customer, who are engaged in product, financial and information flow. The entrepreneurial actors, i.e. the retailers, are the focal actor, which leads the SC towards sustainable SC performance. This focuses on the association between innovation orientation and sustainability orientation, where both form the phenomenon of SOI in food SCM. The sections below will explain the research key terms.

2.3.2 Levels of Food SC

2.3.2.1 Actors

In the strategic network concept, the organization of all business activities from raw material to end-customers is distributed between different firms as a strategic network with the focal company (the focal actor) which leads the activities of the business strategically (Guercini et al., 2011). The focal actor can be defined as the one which is responsible for the direct link with the end-customers; at the same time it has direct and indirect links with different actors across the SC such as wholesalers, retailers, packaging providers and distributors (Hugos, 2018). As actors change their roles to the network level, they have the chance to face opportunities and/or risks (Beske and Seuring, 2014). Hence, the major focus of the focal actor is based on how to link the supply and demand, focusing on the product value (Aarikka-Stenroos et al., 2014). A key component of an effective SC is to manage supply and demand by a focal company (actor), linking upstream and downstream for the benefit of the end-customers (Autry and Griffis, 2008) (Figure 2.4).

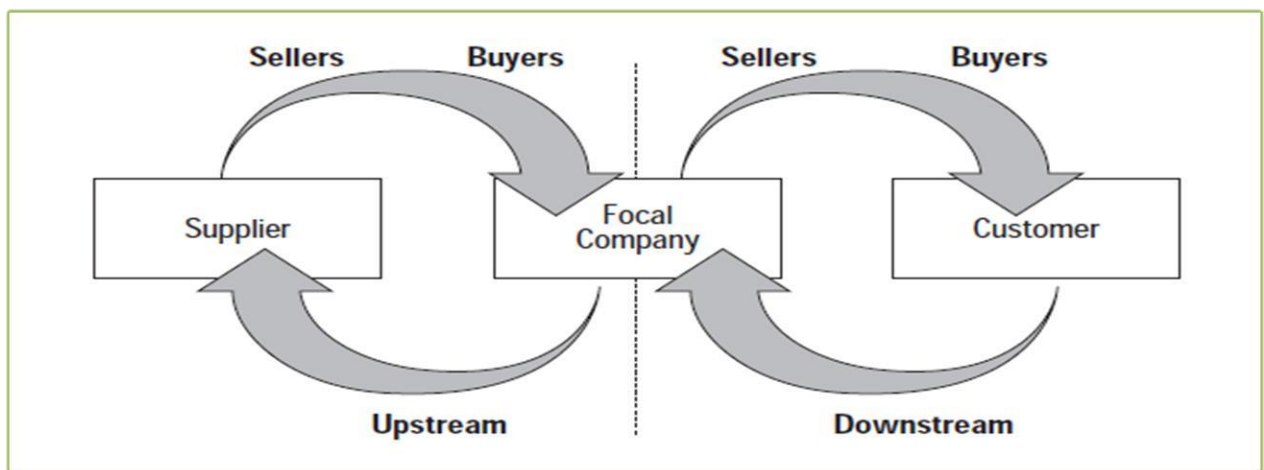


Figure 2.4: Focal Actor in Food Supply Chain. (Spekman et al., 1998, p. 636).

In food SCM, the extraction of raw material or production in the SC are known as upstream, while closer to the end-customer is considered downstream (Dani, 2015). Many manufacturing actors around the world are increasingly acknowledging the effects of integrating, i.e. cooperation, coordination, collaboration with their suppliers and customers in order to increase competitive advantage (Spekman and Myhr, 1998; Hugos, 2018). Integrating with suppliers and customers is considered to be a competitive strategy to enhance the financial and operational performance of manufacturers with the food retailers to satisfy end-customers (Li et al., 2006; Tasca et al., 2017). Numerous authors consider that, by establishing long term and trustworthy relationships with other partners along the food SC, actors can understand the need of customers better, enhance the customer service level, respond quickly to market dynamics, offer faster and more reliable delivery, and simultaneously operate at lower costs to increase profit (Sun and Ni, 2012; Dani, 2015; Tasca

et al., 2017; Hugos, 2018). Thus, a food SC is a complicated web of interconnected systems of various actors, which work to provide the final product for the end-customers (Dani, 2015). The actors involved in the food SC are shown below in Figure 2.5.

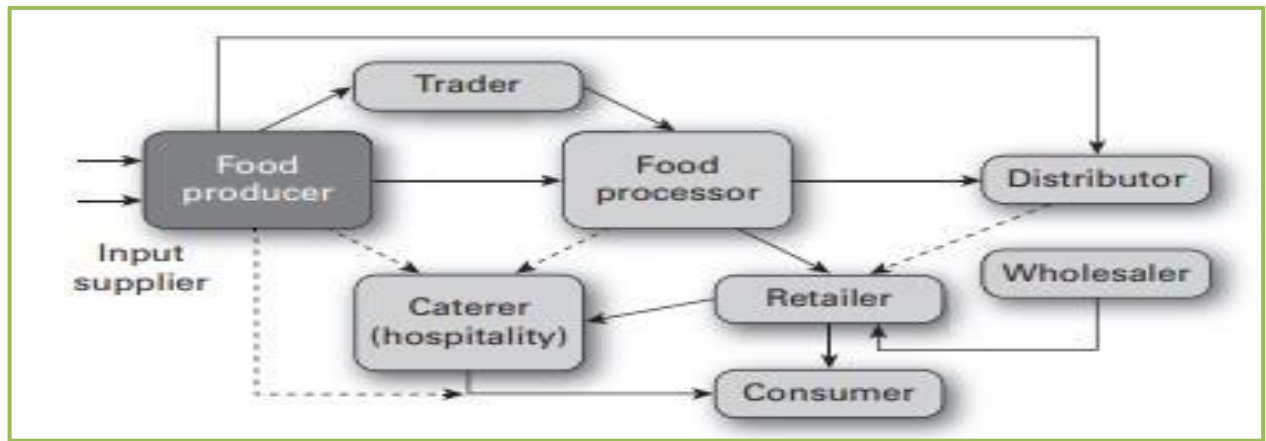


Figure 2.5: Actors Involved in a Food Supply Chain. (Dani, 2015, p. 2).

In the food SC, the producers are farmers, who are a part of the agriculture industry (Dani, 2015) and could be small-medium firms, large firms, family firms, or start-ups (Sun and Ni, 2012). There are actors that supply raw materials (i.e. fertilizers, farming machinery, seeds) called input suppliers of local and global companies who have a lot of power in the food SC (Aarikka-Stenroos et al., 2014). A strong food production sector is required by all countries since this affects the economic sustainability for the food sector as well as the availability of food (Autry and Griffis, 2008). Hence, those producers have to cope with uncertain issues such as climatic weather patterns, scarcity of water and soil degradation (Hugos, 2018). Next come the processors, also known as manufacturing, who convert the food products provided by the producers into products that meet the requirements of the consumers; such processor companies are different in nature and manufacture products at different phases (Aarikka-Stenroos et al., 2014). Processors should work carefully among the downstream of the supply chain; this includes the actors, such as retailers, that supply the processed food to the consumer (Dani, 2015). The food processing stage sustains the food sector economy by means of catering to the demands of consumers and it helps minimize waste and boost food availability by means of increasing the shelf life of raw food products which cannot be consumed immediately (Hugos, 2018). To keep up with ongoing consumer demand and environmental changes, food processors and their retailers need innovation, including technology and changes to distribution channels (Guercini et al., 2011).

Afterwards, the distributors source the final inventory from the processors and subsequently distribute it through the following channels to reach the final consumer as the final product (Dani,

2015). These channels could be processing companies or retailing companies, hence, distributors are actors that connect between producers, processors, and markets (Aarikka-Stenroos et al., 2014). Retailing companies display the final products for the end consumers. These food-retailing companies could be supermarkets, hypermarkets, or local shops; therefore, the retailer stage in the food sector is responsible for providing consumers with a selection of innovative and essential products (Dani, 2015). The retailer is the key window for consumers thus it is a highly competitive industry. Many food processors negotiate and contract with the same retailers to offer their products while retailers compete between themselves to draw more attention to consumers (Hugos, 2018).

In the present research, the role of a focal actor should be a gate-keeping role that refers to engaging collaborative power and supporting knowledge, activities and practices in the whole SC (Ritter 2004; Tasca et al., 2017). Thus, the retailer is the focal actor, and its responsibility is forming direct and indirect relationships within the focal actor network, hence the development of the food SC with the focus on SOI.

2.3.2.2 Dyads (Relationships)

Relationships in a SC have been defined as the interactions of actors amongst each other to create a more collaborative and effective dynamic, facilitate innovation, access information, and improve transparency (Wilson, 1995; Michalski et al., 2018). Various actors have focused substantial attention on working carefully with SC actors, including wholesalers, retailers, packaging providers, distributors and customers, in addition to service providers to achieve coordination, collaboration, and cooperation across the SC (Hugos, 2018). According to Spekman et al., (1998), coordination means that information linkages between actors are increasing, cooperation includes long-term contracts and exchanging skills, and collaboration is about joint planning and sharing activities for the benefits of their SC. Hence, the relationships developed with the actors across the food SC have become a high priority.

They are either vertical or horizontal relationships (Centobelli et al., 2018). Vertical relationships are the associations among actors in the SC such as retailers, distributors, manufacturers, and suppliers. However, horizontal relationships are an agreement between two or more firms in the same industry and at the same stage of the supply (Centobelli et al., 2018). These relationships are based on variables such as trust, commitment, cooperation, mutual goals, power imbalance, performance satisfaction, adaptation, shared technology, structural bonds, social bonds, non-retrievable investments, summative constructs and structural constructs (Wilson, 1995; Michalski et al., 2018). *“Issues of trust and risk can be significantly more important in supply chain*

relationships, because supply chain relationships often involve a higher degree of interdependency between companies” (La Londe, 2002, p. 10). Morgan and Hunt (1994, p. 22) argued that “... *when both commitment and trust – not just one or the other – are present, they produce outcomes that promote efficiency, productivity and effectiveness.*” Furthermore, these relationships can be direct dyads (vertical links) and indirect dyads (horizontal links), assisting in achieving both individual firm and SC objectives. There are five stages for constructing a relationship: 1) partner selection where a suitable actor is a vital part in developing a relationship (Centobelli et al., 2018); 2) defining purpose where actors are able to clarify their mutual goals; 3) to set relationship boundaries; 4) building relationship value; and 5) to maintain the relationship (Wilson, 1995).

In the present research, the role of the focal actors’ relationships in a food SC is to take responsibility and achieve coordination, cooperation and collaboration with vertical and horizontal links in order to supply the product to the end customers. This is where retailers interact directly or indirectly with other primary actors and/or supporting actors in the food SC.

2.3.2.3 Networks

Omta (2002, p. 75) defined a network as “*all of the actors within one industrial sector, or between related industrial sectors, which can (potentially) cooperate to add value for the consumer.*” Understanding why and how actors manage their SC to reach the end-customer is very important as it is a challenging task (Pilbeam et al., 2012). “*Whoever has the relationship with the end-user has the power in the supply chain*” (Lambert, 2008, p. 6). There is a lack of research on SCM from the perspective of retailers (Petljak et al., 2018). Retailers are acknowledged as important actors that contribute to change in the SC structure and embedded a market orientation within its network (Ritter et al., 2004; Lehner, 2015; Petljak et al., 2018). Addressing retailing’s sustainability, the “*...food retailing is very important because of time pressure due to perishability, the need of cooling and the related waste management challenge.*” (Petljak et al., 2018, p. 2).

The food SC structure is formed by primary actors who cooperate vertically (Omta, 2002; Kannan and Tan, 2010). These actors also form horizontal links with supporting partners along their SC (Centobelli et al., 2018). This structure is illustrated in Figure 2.6 where a focal company (focal actor) interact with various tiers along the SC (Lambert et al., 1998b).

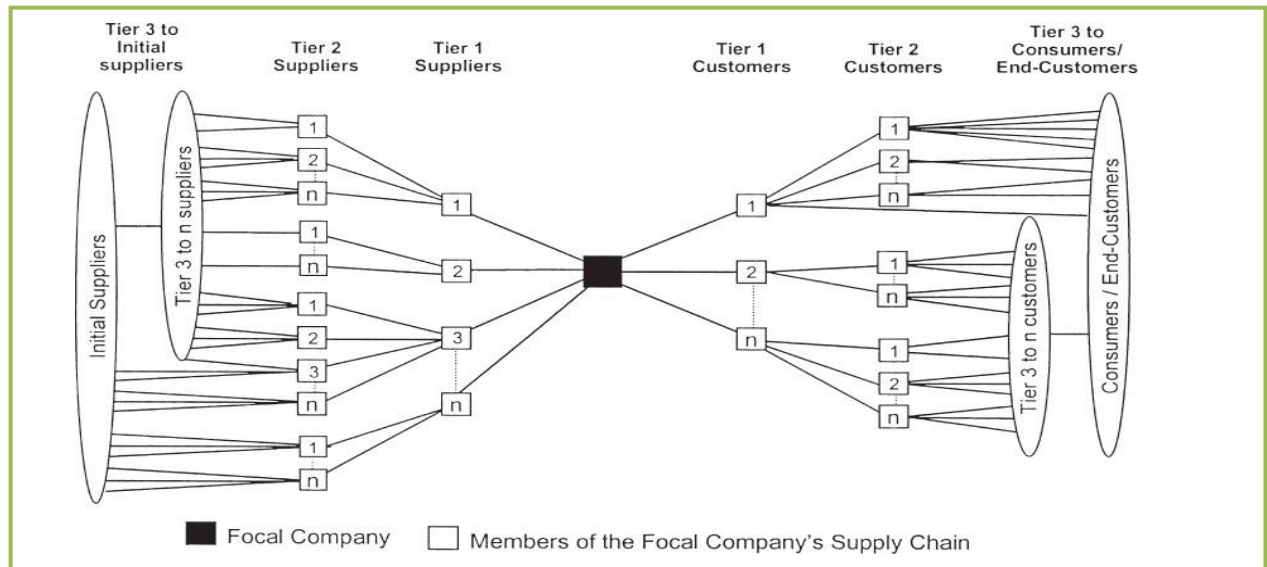


Figure 2.6: Supply Chain Network Structure. (Lambert et al., 1998a, p.3).

This structure is a classic and has been used by authors up until now. The length and width of a supply network can vary. The length depends on the number of steps taken from the initial producer to the end-customer, whereas the width depends on the number of suppliers for each step. Over the years, the supply network width decreases because of the movement in the direction of a limited number of preferred suppliers (Omta, 2002; Van Der Vorst, 2006b; Miemczyk et al., 2012). Several authors (Lambert et al., 1998b; Lambert and Cooper, 2000; Handfield and Nichols, 2002; Miemczyk et al., 2012; Braziotis et al., 2013; Michalski et al., 2018) have suggested fundamental aspects for how and why channels are structured and created. These are: identifying focal actor (company) and SC actors of the channel, integration, and developing appropriate channels. Hence, the SC structure is the network of actors which connects between actors of the SC. Procedures in businesses are activities that produce a final product of value for the end-customer. Throughout the SC, there are relationships and links between the actors but not all links in the SC have to be coordinated and integrated closely; the most suitable relationship is the most suited to the circumstances (Michalski et al., 2018). Hence, the appropriate partnership level for a specific SC link will need to be chosen (Lambert et al., 1996). It has been argued that networks of actors cooperating to create value by the conversion of raw materials to final products for their end-customers assist in competition (Spekman et al., 1998; Handfield and Nichols, 2002; Braziotis et al., 2013; Luo, et al., 2018).

In the context of this research, the food SC has different chain actors including the focal actor, which is the retailer. This focal actor is directly linked with dyadic actors to form a dyad and is indirectly linked with network actor to form a network. The retailer's network begins with the initial producer and goes through many tiers of suppliers to reach the focal actor and then continues through many

tiers of customers till it reaches the end-customer (Lambert et al., 1998b). Hence, the focal actors have to interact directly and indirectly with other actors in the network, playing the role of lead actor, performing activities and sharing resources related to SOI in food SC. This is in order to have sustainable SCM and better sustainability performance for all the actors in the food SC. Table 2.4 explains the key terms used in the context of this research.

Table 2.4: Key terms of ‘actor’ concept used in the context of this research (Author’s own work)

Key Term	Explanation
Chain actor	Different firms which are actors in the supply chain (see Figure 2.5).
Focal actor	The firm (actor) which leads the SC which has the direct link with the end-customers and also has direct and indirect links with different actors across the SC (see Figure 2.4). The focal actor has entrepreneurial characteristics and is considered corporate entrepreneurship (CE) in the context of this research.
Retailer	The retailer is the focal actor in the context of this research.
Dyadic actor	The firm (actor) which has a direct link with the focal actor (see Figure 2.11)
Network actor	The firm (actor) which has a indirect link with the focal actor (see Figure 2.11)

2.3.3 Sustainable Supply Chain Management (SSCM)

Numerous enterprises across the world are adopting SSCM in order to take their environmental responsibilities seriously, but succeeding in sustainability is very challenging since there might not be any financial benefits (Gold et al., 2010; Esfahbodi et al., 2016). Seuring and Müller (2008, p. 1700) defined SSCM as: *“The management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements.”* Sustainability is not only for focal actors but also for the entire SC (Gong et al., 2018).

SSCM is important for both academics and enterprises, since it enhances environmental sustainability and sustainable production (Su et al., 2015). This is putting pressure on enterprises to increase their attention to the triple bottom line approach which considers the environmental, social and economic perspectives (Carter and Easton, 2011). Hence, *“sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of ‘needs’, in particular the essential needs of the world’s poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs”* (WCED, 1987, p. 43). The concern with sustainability is not just emphasized in developed countries but also in developing countries. Developing countries started to take notice of environmental initiatives associated with SCM

activities since they came across strict environmental restrictions from their government and critical inspection from the society and their competitors (Govindan et al., 2014). Hence, enterprises began adopting SSCM initiatives, for example technologies, standards, eco-design and green purchasing, with the intention of minimizing the effect of their operations on the environment (Trienekens et al., 2003). This helps enterprises to reach local expectations and allows them to succeed in the global market (Esfahbodi et al., 2016). The global concerns, environmental sustainability and pollution affect enterprises in countries; hence, there is a vital need for actors to readjust their strategies in order to undertake the initiatives (Tseng and Chiu, 2013; Esfahbodi et al., 2016).

An important growing topic in the SCM literature is SSCM due to numerous issues associated with its recognition such as: shortage of natural resources, governmental regulations, competition, business image and reputation (Govindan et al., 2014; Tseng et al., 2015). Therefore, a sustainable SC boosts *“the traditional supply chain to include activities that aim at minimizing environmental impacts of a product throughout its entire lifecycle, such as green design, resource saving, harmful material reduction, and product recycling”* (Beamon, 1999, p. 341). Consequently, the definition of sustainable supply chains exposes how SSCM endeavors to ‘close the loop’ by reusing, remanufacturing and recycling materials and products in a forward supply chain (Zhu et al., 2008). The purpose of implementing SSCM is to decrease wasted resources and harmful environmental impacts as well as social and economic issues across the actors of the supply chain (Hsu et al., 2013). Table 2.5 below features a sample of example definitions of SSCM found in the literature analyzed.

Table 2.5: Example Definitions for SSCM (Author’s own work)

Author, Year	Definition
(Seuring and Müller, 2008, p. 1700)	“The management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements.”
(Carter and Rogers, 2008, p. 368)	“SSCM as the strategic, transparent integration and achievement of an organization’s social, environmental, and economic goals in the systemic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its supply chains.”
(Seuring, 2008, p. 132)	“The integration of sustainable development and supply chain management [in which] by merging these two concepts, environmental and social aspects along the supply chain have to be taken into account, thereby avoiding related problems, but also looking at more sustainable products and processes.”
(Badurdeen et al., 2009)	Planning and organizing activities in regards to the product life-cycle stages between actors, as well as considering environment and social aspects
(Wolf, 2011)	Actors collaborating with its SC members in different processes for sustainability
(Hassini et al., 2012, p. 70)	“Sustainable SCM is the management of supply chain operations, resources, information, and funds in order to maximize the chain profitability while at the same time minimizing the environmental impacts and maximizing the social well-being.”
(Esfahbodi et al., 2016, p.353)	A “sustainable supply chain considers the environmental impacts of the production process as goods flow through the supply chain”

Hassini et al. (2012) proposed a model of the sustainable SC as a wheel consisting of six parts (Figure 2.7), which signify the key functions in the SC. The six functions signified in the wheel are: sourcing, transformation, delivery, value proposition, customers and product use, and the 3 R's (reuse, recycle, return) (Hassini et al., 2012). The six functions of a sustainable SC are as follows: 1) *Sourcing* and 2) *Transformation*, which are vital functions in SSCM. A fundamental aspect of a sustainable SC is the use of 'green procurement practices' (Varnas et al., 2009; Hassini et al., 2012). The upstream suppliers are forced by their focal actors to either adopt or adapt innovations, which result in environmentally friendly sources, ethical practices, and a low impact on the environment. 3) The *Delivery* function involves several operational processes such as location, choice of transportation, choice of inventory management policy and delivery of the product on time, quickly and cheaply. 4) The *Value proposition* is not typically specifically considered. Enterprises which sell environmentally friendly and sustainable products usually have higher costs; hence, the cost is passed on to the customers by higher prices for the product. Therefore, to sell these products successfully, the enterprises would have to justify the value proposition and quantify the benefits to the customers. 5) The *Customers' role* is not usually considered in detail. 6) After the *product is used* by the consumer and has reached the end of its life, the product is either recycled, reused, sent to a landfill, or re-manufactured for consumption. 3R's means that the product will be taken apart and the parts reused, re-manufactured, or recycled into a source of raw materials.

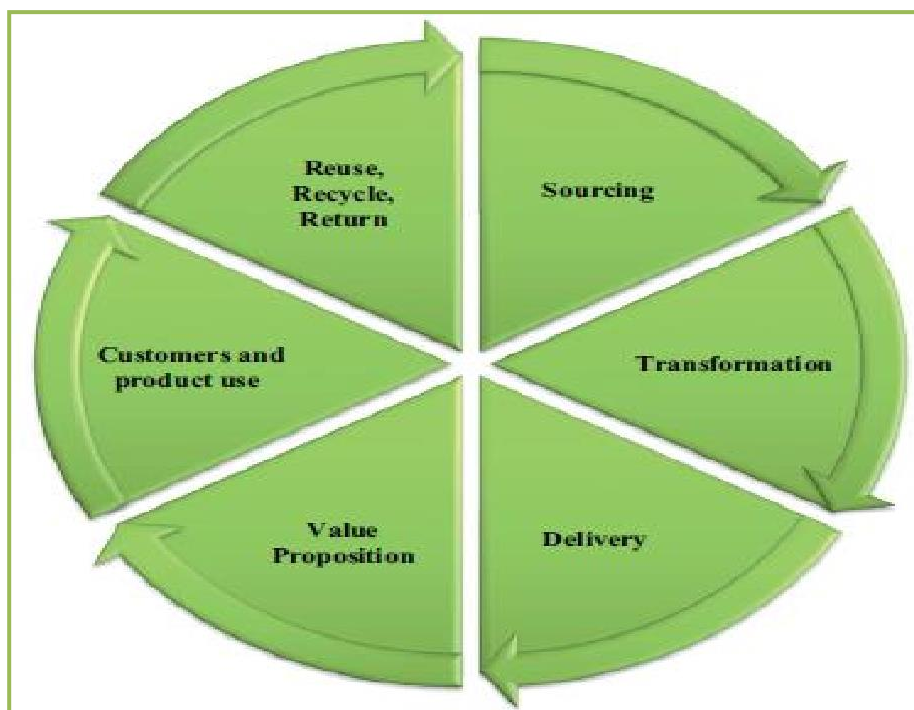


Figure 2.7: Framework for Sustainable Supply Chains. (Hassini et al., 2012, p. 73)

There are several pressures, both external and internal, that drive actors across the SC to adopt sustainable operations. These pressures can be social issues, marketing, logistics, sourcing, process capability, product development, science and technology, policy and regulations, or market forces (Klassen and Vachon; 2003; Wang and Lin, 2007; Varnas et al., 2009; Hassini et al., 2012). Therefore, SSCM is important to enhance the sustainability performance for food SCM.

Sustainability performance is an approach followed by SC actors to evaluate their sustainability; social, environmental and economic (Qorri, et al., 2018). Scholars have struggled to develop a set of well-defined measures and criteria for sustainability performance, especially in developing countries (Esfahbodi et al., 2016). Empirical studies have called for an understanding of how to enhance sustainability performance for SCs, which is related to demand for environmentally friendly, socially responsible products and less costly adding of value products (Gualandris et al., 2014). Furthermore, sustainability-related opportunities have encouraged the implementation of SOI in different industries and within different levels of an actor network (Schaltegger and Wagner, 2011; Schaltegger and Burritt, 2014). Hence, there is a lack of understanding of different measures for sustainability performance and there is no one framework (Esfahbodi et al., 2016), which can capture these measures addressing different impacts for the benefits of food SC actors.

In food SSCM, actors need to manage their SC performance effectively and efficiently. Assessing the SC performance needs the development of a measurement system where these measurement or criteria can support managers to focus on their SC SOI-related decisions (Qorri, et al., 2018). Govindan, et al. (2013) suggest different criteria to measure sustainability performance: economic such as costs, delivery reliability, quality and technology capacity; environmental, such as pollution effects, use of resources, eco-design and environmental system; and social, such as employment criteria, health issues, safety procedures, local community and contractual stakeholder influence. Qorri, et al., (2018) outline methods or systems to evaluate sustainability performance such as Balanced Score Card and Life Cycle Assessment. However, these measurements are not integrated and differ from one user to another in the SC. Qorri, et al., (2018) have argued that evaluating SC performance across suppliers, manufacturers, distributors, retailers and consumers is a complex procedure in view of the large set of sustainability criteria. Qorri, et al., (2018) added that most previous studies on sustainability performance have not evaluated the performance of the required SC actors, including retailers. In addition, these studies have noted that these actors produce sustainability reports; however, the reports did not contain information about the whole SC. Previous literature also indicated that actors need high efforts to make innovation as a key operational concept for sustainability orientation in their SC (Schaltegger and Wagner, 2011; Tebaldi et al., 2018).

SC actors have recently expressed social, environmental and economic concerns and have measured their sustainability performance as a result of the adoption of sustainable SC initiatives (Seuring and Müller, 2008). The focal actors evaluate the available sustainable actors at the dyad and network levels based on the triple bottom line concept for better SOI-related decisions (Esfahbodi et al., 2016) and consider all three dimensions to measure their SC performance in collaboration with those selected sustainable actors in a food SC (Petljak et al., 2018).

2.3.4 Research Phenomenon: Sustainability-Oriented Innovation (SOI) in Food SC

SCM has several phenomena such as product quality, entrepreneurship, HR, SOI, customer satisfaction, organizational performance (Steward et al., 2010; Smith-Doerflein et al., 2011; Jay and Gerard, 2015; Gómez-Cedeño et al., 2015; Esfahbodi et al., 2016; Adams et al., 2016; Neutzling et al., 2018), and among them SOI, which needs further and in-depth research (e.g. Adams et al., 2016). Many scholars (e.g. Hansen et al., 2009; De Vargas Mores et al., 2018; Neutzling et al., 2018) have called for study of the phenomenon of SOI in food SC with the purpose of identifying the main aspects of SOI that contribute to an effective and sustainable SCM and to suggest how the adoption of SOI along the SC can enhance sustainable performance. The recognition of SOI has increased as a significant area for empirical studies (Bansal et al., 2012; Luqmani et al., 2017). SOI emerged in the past decade and is defined as *“making intentional changes to an organization's philosophy and values, as well as to its products, processes or practices, to serve the specific purpose of creating and realizing social and environmental value in addition to economic returns”* (Adams et al., 2016, p.181). SOI is considered to be a type of innovation that is environmentally, socially and economically oriented (Harsanto and Permana, 2019). Another definition of SOI is *“the production, assimilation or exploitation of a product, process, service, method, structure or social institution that is novel in its application, and which improves economic, environmental and social outcomes throughout the life cycle of the application, compared to relevant alternatives”* (Luqmani et al., 2017, p. 96). In food SC, SOI is adopted by the SC actors to act responsibly in their innovation; this is a strategic issue for them to abide by regulations and use them as opportunities to improve their reputation, enhance financial returns and reduce costs (Ghisetti and Rennings, 2014; Harsanto and Permana, 2019; Melane-Lavado and Álvarez Herranz, 2020).

Adams et al. (2016) explain that innovation activities oriented towards sustainability focus on three perspectives: operational optimization, organizational transformation and system building. To create value across the SC actors (i.e. retailers), these innovation activities are integrated to establish the direction of new products, especially the way actors associate with suppliers and buyers to share the costs and benefits from sustainable innovations (Neutzling et al., 2018). Adams et al. (2016)

argue that for an actor to move through the model of SOI (Figure 2.8) it needs to change its philosophy, values and behavior; this is considered in their innovation activities.



Figure 2.8: Model of SOI. (Adams et al., 2016, p. 185).

One of the key challenges of integrating SOI in SCM is how actors integrate sustainability strategies with innovations across the SC especially strategies related to relationships, networks and chain structures (Buhl et al., 2019). Another challenge actor's face is whether to implement an SOI initiative. This is due to the expense of the SOI initiative and not being able to forecast the outcome of profit, as well as if there is a positive sustainable effect of its implementation; hence, organizations are less encouraged to implement SOI (Jay and Gerard, 2015; Buhl et al., 2019). A further challenge is stakeholder involvement, as the development of SOI requires specific expertise an actor may not sufficiently possess hence stakeholders may contribute their knowledge, experience and resources (Buhl et al., 2019). Therefore, there is a need for these organizations to engage with other SC's actors to produce environments that encourage and enable SOI; actors *"must reconsider their capabilities, stakeholder relationships, knowledge, leadership and culture"* (Adams et al., 2012, p. 11). By building this diverse stakeholders' relationships and collaboration, the capacity of the actors' innovation is enhanced such as by *"overcoming resource constraints, sharing risk, accessing new markets and novel technologies, bringing products to market, bundling complementary skills and protecting property rights"*, hence revealing innovation opportunities (Jay and Gerard, 2015, p. 28).

SOI is a process, which involves the interaction between different actors of the SC (Aka, 2019). Integrating the objectives of sustainability into the different chain actors, the first decisions taken by the enterprises come from stakeholders and external influences, which are typically transferred from the focal actors (e.g. retailers) to their suppliers in a process of orientation to sustainability and

reconceptualization of the SC (Beske, 2012; Petljak et al., 2018). In order to extend sustainability orientation across the SC, actors should be able to innovate in their management such as developing a SC specifically for sustainable products, thus influencing various SC configurations or focusing on performance associated with their SC actors (Beske and Seuring, 2014; Akhavan and Beckmann, 2016). Developing innovative SSCM strategies depends on the integrated direct and indirect relationships between the actors, including resource investments and building on the relational view and networking, hence leading to sustainability performance for both the focal actors and SC actors (Neutzling et al., 2018).

Entrepreneurship is positively involved with entrepreneurial firms and to effectively spread SOI across the actors of the SC (Schaltegger, 2002; Dean and McMullen, 2007; Paloviita, 2009; Klewitz and Hansen, 2014). Schaltegger (2002) discusses the importance of implementing SOIs across the actors of the SC to significantly enhance the sustainability performance and development. Due to the remarkable competition in the market, entrepreneurs should consider being innovative in order to succeed and achieve high-level sustainability performance (Paloviita, 2009). Innovation-orientation involves generating an innovative product for actors before the competitors. This includes adopting new techniques, resources, management and skills in order to provide creativity and change for an enterprise (Klewitz and Hansen, 2014). Actors that are innovation-oriented emphasize creativity and establishing new ideas to accomplish market success with their innovative products, leading to a focus on customer loyalty and satisfaction by developing long-term customer relationships and satisfying customer needs (Lii and Kuo, 2016). Hence, these actors are capable of envisioning customer needs, thus reacting faster than their competitors and gaining notable benefits (Siguaw et al., 2006; Lii and Kuo, 2016). Suppliers are more likely to implement innovation-oriented product development despite the risks and uncertainty (Kamath and Liker, 1990; Lii and Kuo, 2016), and suppliers have a greater tendency to cultivate new products when they work with innovation-oriented actors (LaBahn and Krapfel, 2000; Klewitz and Hansen, 2014).

Goodman et al. (2017) and Luo, et al. (2018) argue that it is important to focus on collaboration among the different actor networks across the SC and their stakeholders in the processes of SOI and those stakeholders contribute to innovation targeted at creating new and sustainable products. The network perspective is considered to be a suitable approach to explore SOI across the SC; as it can assist in explaining the role of the actors in regards to SOI, and it contributes to analyzing SOI progress across the SC and determining any potentials and challenges of SOI (Harsanto and Permana, 2019). Schaltegger and Wagner (2011) discuss developments in innovation to create value in relationships and networks across the SC. Goodman et al. (2017) suggest that stakeholders have

different roles in the processes of SOI, such as stimulator, initiator, broker/mediator, concept refiner, educator, context enabler and impact extender. However, several authors discuss future research opportunities since a structural network approach to stakeholders in SOI could be helpful in planning the configurations of form-stakeholder collaboration in SOI (Van Der Vorst, 2006, a, b; Aarikka-Stenroos et al., 2014).

A SC should be managed by adding value called by end-customers in terms of product features, service availability, economic considerations, environmental considerations, social aspects and innovation levels (Su et al., 2015; Esfahbodi et al., 2016). The expectations of the food end-customers grow and, on the other hand, the chain actors at various chain stages work with a focal actor (e.g. retailer) on linking efficiency with effectiveness to match these expectations with the quality SC performance (Lambert, 2008). Currently, it is very important for both food SC actors and end-customers that the products and services are where demand and supply can be matched by the use of technical and technological solutions, including orientations towards innovation and sustainability (Adams et al., 2016; Neutzling et al., 2018). The broadest area of use of SOI in food SCM is innovation by means of product, information, process, transportation technology, and standards and systems (Trienekens et al., 2003; Rueda et al., 2017). This is combined with the sustainability of social, environmental and economic issues, which can lead to quality SC performance (Neutzling et al., 2018). Thus, in order to understand SOI, SOI as a phenomenon will be explored and explained from the foundation perspective of SCM along with other key perspectives. These perspectives are discussed in the second part of the literature review. Therefore, the research understands the concept of SOI in food SC, as shown below:

“SOI is the purposeful changes to actors’ SCM’s philosophy in terms of innovation, to serve the specific purpose of creating economic, social and environmental performance in a food SC.”

(Author’s own definition).

2.4 Theoretical Perspectives

In the present research, SOI is categorized into four key perspectives: network, entrepreneurship, innovation and sustainability (Figure 2.9). The purpose of this section is to explore the essential theoretical lenses by which the main theoretical foundation, SCM associated to SOI, can be critically analyzed and understood. The research problem is a lack of applications of appropriate innovations to enhance sustainability performance in the Jordanian food SCs of retailers. Therefore, the literature review on the theoretical foundation in section 2.3 above has focused on different topics related to SCM, hence identifying SOI as a key phenomenon in food SCM as a gap that still remains to be addressed in further research.

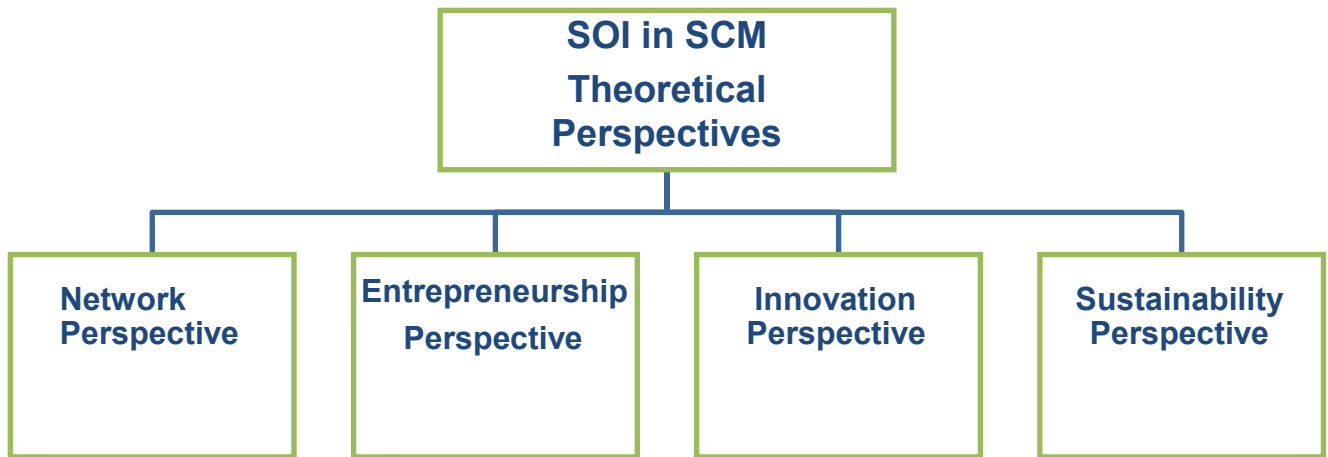


Figure 2.9: Theoretical Perspectives related to SOI in Food SCM. (Author's own work).

This section provides a literature review of the four theoretical perspectives to identify more specific gaps on SOI in food SCM. **Section 2.4.1** discusses the network perspective (e.g. Jarillo, 1988; Harland, 1996; Bellamy et al., 2014) to understand the concept of network, its high-order themes and a relevant empirical analysis. **Section 2.4.2** discusses the entrepreneurship perspective (e.g. Hisrich and Peters, 1989; Pittaway, 2012; Jay and Gerard, 2015) to explore the concept of entrepreneurship, its high-order themes and an available empirical analysis. **Section 2.4.3** presents the innovation perspective (e.g. Schumpeter, 1949; Lundvall, 1992; Anzola-Román et al., 2018) to understand the concept of innovation, its high-order themes and empirical analysis. **Section 2.4.4** presents the sustainability perspective (e.g. Folkerts and Koehorst, 1998; Christopher, 2011; Esfahbodi et al., 2016; Neutzling et al., 2018) to highlight the concept of sustainability, its high-order themes and a relevant empirical analysis.

2.4.1 Network Perspective

2.4.1.1 Network Concept and Definitions

A network is a group of actors associated together in a market with similar goals for actors to share benefits (Jarillo, 1988). A set of objects, persons, or events in a network are called actors or nodes (Mitchell, 1969). The network perspective provides an enriched recognition of the relationship perspective, it also provides a framework for business analysis (Möller and Halinen, 1999; Kannan and Tan, 2010). To build long term relationships, the relations of the network establishes information and interactions leading to buyers and sellers reaching more knowledge and resources (Estrada and Knight, 2015). Some authors have defined networks in SCM as a kind of inter-organizational network, which may be perceived as an intermediary form of governance among the market and hierarchy (Thorelli, 1986; Williamson, 1991; Wilhelm, 2011). Several pillars of networks have been examined, i.e. *“competitive position in networks, definitions of components of networks, network structures, and network performance”* (Harland, 1996, p. 67). The competitive position in networks means that firms manage their networks strategically to enhance their competitive position (Harland, 1996; Kannan and Tan, 2010; Roseira et al., 2010; Bellamy et al., 2014). Several essential factors are acknowledged when considering a network perspective in competing firms, since they influence competitive behavior: *“selection of collaborative partners in the network, establishing a competitive position in the network, monitoring your own and your competitors’ positions in the network, and how the network relationships are handled”* (Harland, 1996, p. 67).

Due to the complexity of a SC and its interdependent nature, adopting a network perspective contributes to valuable understandings of the numerous interactions proceeding between actors in the network (Choi et al., 2001; Borgatti and Li, 2009; Bellamy et al., 2014). Supply networks act as catalysts for the development and distribution of new ideas, product and process innovation and SC practices. They are also significant sources of knowledge (Kannan and Tan, 2010; Bellamy et al., 2014), since networks contain dyadic relationships among actors and are essential means of both product and information flow in food SC. Bellamy et al. (2014, p. 358) defined a SC network *“as an inter-linked network of firms consisting of manufacturers, suppliers, customers, third party service providers, and alliance partners that interact to execute the supply chain activities of the firm”*, in which the firms have actor positions within the supply network and are regarded as the ‘supply network actors’ of a focal actor among the network.

An actor's supply network is a source of innovation not just operational aspects (Bellamy et al., 2014). Hence, firms can gain a better innovation output from: *“higher levels of supply network accessibility and supply network interconnectedness, the inter-action between the levels of these two structural characteristics, and the moderating role of absorptive capacity on supply network accessibility and the moderating role of supply network partner innovativeness on supply network interconnectedness”* (Bellamy et al., 2014, p. 357). To implement SOI in food SC, innovation orientation is vital; hence to develop innovation in SCM it is important to integrate relationships between the actors, which are described by the following factors: resource investments and building on the relational view, collaboration, actor activities and governance, hence leading to sustainability performance, i.e. social, environmental and economic (Neutzling et al., 2018). Table 2.6 below features a sample of example definitions of the network perspective found in previous research.

Table 2.6: Example Definitions of Network Concept (Author's own work)

(Author, Year)	Definition
(Mitchell, 1969)	Network is defined as a particular relation associating a set of objects, persons, or events, where the set of objects, persons, or events in a network are called actors or nodes.
(Laumann et al., 1978, p. 458)	“a set of nodes (e.g. persons, organizations) linked by a set of social relationships (e.g. friendship, transfer of funds, overlapping membership) of a specified type.”
(Thorelli, 1986; Williamson, 1991)	Networks in SCM as a kind of inter-organizational network, which may be perceived as an intermediary form of governance between the market and hierarchy.
Choi and Hong (2002, p. 469)	A “network of firms engaged in manufacturing and assembly of parts to create a finished product.”
Gadde et al. (2003)	A network is three dimensions: actors, resources, and, activities.
(Ritter et al., 2004)	A network is when a relationship and network manage interactions in a mutual manner for overall performance; it is a complex yet adaptive system.
(Choi and Krause, 2006)	A network is a collection of connected firms that are engaged in value added activities or tasks.
(Mikkola, 2008)	It is a method of coordination expressed by information sharing and long-term relationship, depending on business interactions.
(Bellamy et al., 2014, p. 358)	Network is defined “as an inter-linked network of firms consisting of manufacturers, suppliers, customers, third party service providers, and alliance partners that interact to execute the supply chain activities of the firm.”

In the context of the business of integrated operations among different actors, a network has to be formed for their SC (Neutzling et al., 2018). This requires the focal actors to interact with other actors based on both vertical and horizontal relationships in order to provide the final value, commodity and services in food SCs (Omta, 2002; Luo, et al., 2018). Hence, focal actors lead this network and share power with all actors across the food SC to form new solutions by linking their

products with new ideas, technologies, sustainable resources and activities that will generate more value to their end customers, SOI products, sustainable partnerships and innovative solutions (Lambert et al., 1996; Fearne, 1998; Qorri, et al., 2018). Since an actor network can consider each actor and position them in a network structure within their SC, it is important to understand how those actors, especially the focal actor (e.g. a retailer) can play a significant role and functions within different SC levels for better SOI development (Luo, et al., 2018). More importantly, a network consists of the actor position, activities and resources within a SC (Hakansson, 1987; Van Der Vorst, 2006b). There has been little attempt to pay attention to SOI in terms of actors, activities and resources in a food SC, especially at the actor, dyad and network levels in order to have a greater involvement of all the actors across the SC and enhanced outcomes (De Vargas Mores et al., 2018; Neutzling et al., 2018).

Having presented the various discussions and definitions above on the network perspective, there is a need to understand the networks, specifically for the purpose of this topic; therefore, the research understands the concept of the network in SCM as shown below:

“A network is a set of an actor’s position, resources and activities, which is managed at the three levels of the focal actor, dyadic relationship and chain network for quality links between upstream and downstream actors with a focus on SOI in the food SC.” (Author’s own definition).

2.4.1.2 Network High-order Themes

The components of networks are related to high-order themes, namely the actors’ position, resources, and activities (Hakansson, 1987; Hakansson and Johanson, 1992; Harland, 1996; Lenney and Easton, 2009). Harland (1996, p. 67) stated, “*Actors are defined by the activities they perform and the resources they control; they are connected to other actors via resources and activities.*” Thus, the identity of an actor is established by the combination of its activities and resources. Depending on their suppliers and customers’ activities, actors will establish and organize their activities (Dubois, 1994; Guercini et al., 2011). In addition, relationships among actors signify beneficial bridges between actors and the resources from other actors. The network model, Figure 2.10, illustrates the study of networks and some of its complexity. Based on this model it is possible for single actors to send or receive resources and perform activities (Harland, 1996). This network model is a classical illustration and has been used by authors up until now.

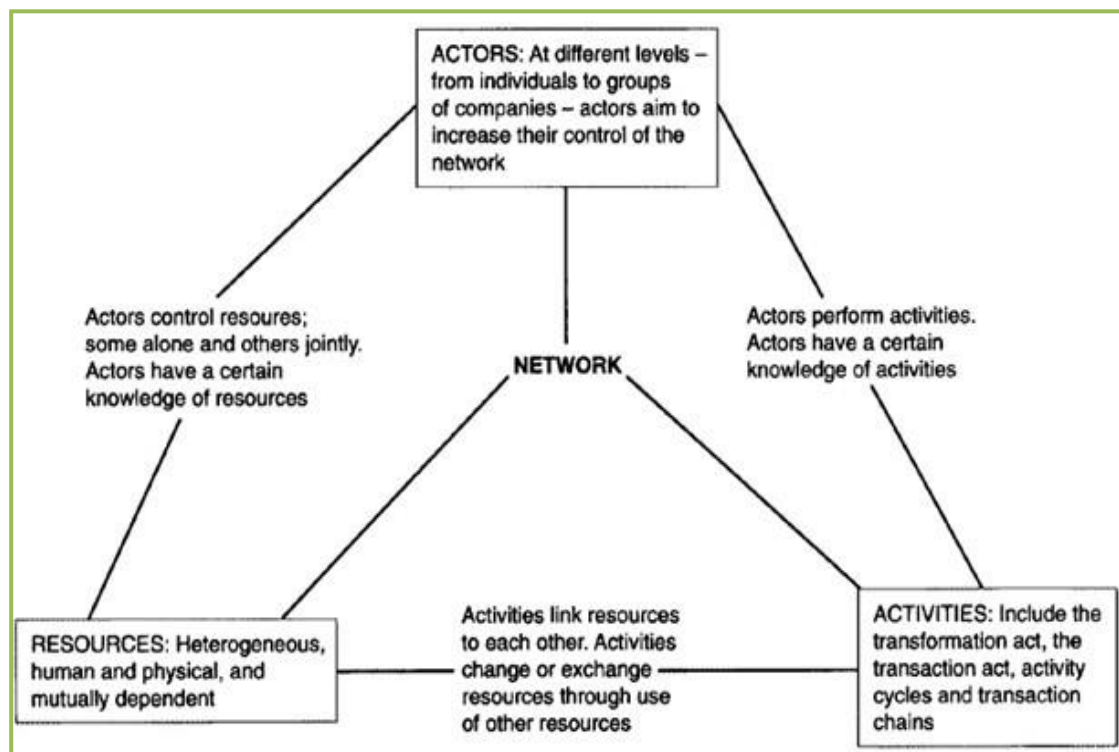


Figure 2.10: Network Model. (Hakansson, 1987, as cited in Harland, 1996, p. S68).

According to Lenney and Easton (2009, p. 553), “*Actors are essentially human and can be individuals or collectivities such as groups, departments, organizations, or nets of organizations. Resources can be tangible or intangible, stable or unstable, valuable or worthless depending on their configuration. Activities can be of any kind and can take place at any level from the individual to the organizational net. Actors have lead and control over some resources, access to others and work with other actors to create combine, develop, or exchange resources.*” León-Bravo et al., (2017) discussed, resources can be in different forms such as operational and physical resources (e.g. new transportation means, raw material use, new actors, and specific assets investments); information resource (e.g. food safety procedures, sustainability report, experts, market information, innovation training and international regulations) and financial resources (e.g. sharing costs of new sustainable activities and collaborative innovation technology). These resources are applied in forms of activities, such as: operational planning activities such as joint planning for demand, joint innovation and integrated planning (Pathak et al., 2014). Exchanging activities are also key elements, such as sharing activities in flows of product, information and finance (Petljak et al., 2018) and activities of performance control and measurement related to market growth, environmental concerns and HR controlling and organizing (Qorri, et al., 2018).

Consequently, networks are associated to networks’ high-order theme of actors, activities, and resources; choosing the appropriate network for a particular study is vital (Harland, 1996). Network

performance, such as single-sourcing and multiple-sourcing network, is a strategy used by firms to decrease uncertainty and increase efficiency in SC functions. Multiple-sourcing networks adjust to changes in the environment by switching and provide a wider range of innovation. However, single-sourcing networks have a dense flow of exchange. Hence, it is easier to preserve confidentiality. These types of performance discussed are focused on economic performance rather than other kinds, for instance customer satisfaction. Hence, this research has concerns related to better understanding the application of the three high-order themes of networks on SOI at the actor, dyad and network levels in food SCs in order to achieve better sustainability performance.

2.4.1.3 Network Perspective for SCM

Prior researchers have highlighted how actors work in their chain networks to improve controlling activities and allocation resources over the SC including sustainability performance, (Harland, 1996; Mikkola, 2008). The network relationships in SCM are acknowledged as a key driver for the associations between the actors across the SC (Lazzarini et al., 2001; Van Der Vorst, 2006b). Previous empirical studies have found that the main network factors: actors, activities, and resources should be achieved in a network to form connections for enhanced benefits (Anderson et al., 1994; Koops et al., 2002; Ritter and Gemünden, 2004; Braziotis et al., 2013; Aarikka-Stenroos et al., 2014; De Vargas Mores et al., 2018; Neutzling et al., 2018). Network relationships establish quality communication, which allows actors across the SC to have access to knowledge and resources greater than their capabilities, hence generating long-term relationships in the SC (Nagurney, 2010). Supply chains exhibit networks that are involved in the focal actor's direct ties to each of its supply network partners and its indirect ties to partners of the actor's direct partners (Choi et al., 2001; Bellamy et al., 2014). Another benefit is that the network perspective for SCM has been acknowledged as a source of innovation (Bellamy et al., 2014). Researchers in SCM have highlighted the value of integrating network structure when considering the innovation and performance of the actors (Bernardes, 2010; Bellamy et al., 2014).

Therefore, the network perspective is considered in this research as it allows the analysis of actors as corporate entrepreneurs across the SC to understand how and why they implement innovations to reach and to enhance sustainability performance. The network high-order themes can explain the functions of the relationships across the actors in a food SC and to adopt strategic networking to enhance their benefits and dyadic relationships to build their food SC (Mikkola, 2008; Aarikka-Stenroos et al., 2014) for overall SC performance (Lazzarini et al., 2001; Pathak et al., 2014). Thus, the interaction between the three levels of actors, relationships (dyads) and networks is necessary

for improved benefits across SCs, which rely on actor positioning, activities and resources. The three levels of the SC are identified as illustrated in Figure 2.11.

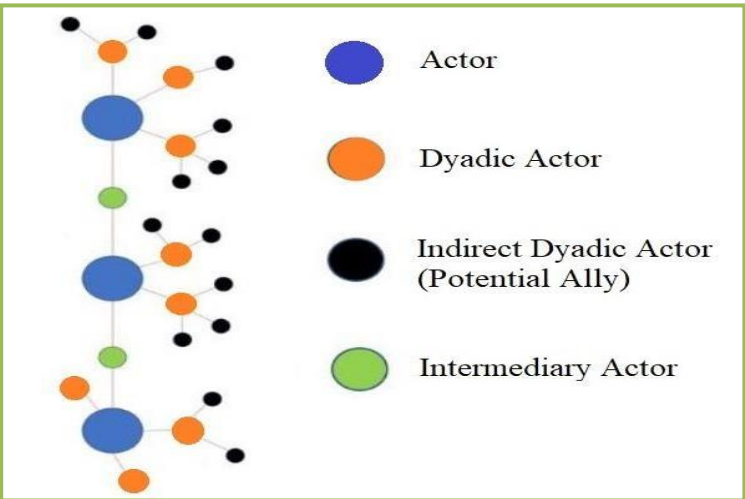


Figure 2.11: Three Level of the Supply Chain: Actor, Dyad, Network. (Author’s own work (Adapted from: Ritter et al., 2004; Harsanto and Permana, 2019).

Prior research has studied the network perspective but there were limitations in their conceptual and empirical applications to the SCM perspective (e.g. Qorri, et al., 2018). Several researchers did not study this perspective with a focus on the dyadic relationships in food SC (e.g. Mort and Weerawardena, 2006), while other researchers encouraged studies from the dyadic relationships across the SC actors (e.g. Harland, 1996; Rowley, 1997; Wilhelm, 2011; Bellamy et al., 2014). Many authors have called for an examination of the phenomena of food SCM from the network perspective at the three levels of the focal actor, dyad and network (e.g. Omta, 2002; Fearne, 1998; Van Der Vorst, 2006b; Qorri, et al., 2018). There were few authors who studied the links between sustainability and innovation for better business performance in food SCs. In addition, very few have examined it in developing countries (e.g. Luo, et al., 2018; Petljak et al., 2018). In addition, there is also a lack of research on SCM from the perspective of retailers (Petljak et al., 2018). Hence, the researcher argues that there is a need to understand SOI in SCM from the network perspective to understand how innovative actors form their relationships and network for better resources and activities across the food SC.

Table 2.7, provides example research on the network perspective for SCM, it highlights the authors, research type, the research context and the key themes used in these studies.

Table 2.7: Example Research on the Network Perspective for SCM (Author's own work)

Author, Year	Title	Journal	Research Type/Method	Empirical Context/ Country	Unit of Analysis/ Phenomenon	Key Themes under Research
(Harland, 1996)	Supply chain management: relationships, chains and networks	British Journal of Management	Empirical research Mixed methods	Automotive	Dyad level	SCM, networks, actors, resources, activities, supply relationships, network performance, chain performance, relationship performance.
(Rowley, 1997)	Moving beyond dyadic ties: A network theory of stakeholder influences	Academy of Management Review	LR	N/A	Network level	Network, actor, dyadic relationships, stakeholder, network structure, focal actor, density and centrality.
(Jarosz, 2000)	Understanding agri-food networks as social relations	Agriculture and human values	Qualitative	Agri-food/ USA	Agri-food networks	Actor, relationship, network, social performance, sustainable, resilience, trust and cooperation.
(Mort and Weerawarden, 2006)	Networking capability and international entrepreneurship: How networks function in Australian born global firms	International Marketing Review	Qualitative Case study	Born global firms/ Australia	Network level	Network, entrepreneurship, networking capabilities
(Roseira et al., 2010)	Managing interdependencies in supplier networks	Industrial Marketing Management	Qualitative Case study	Manufacturers	Supplier interdependencies at focal actor and direct dyad level	SC, resources, activities, actors, innovation; actor and direct dyad level
(Lusch et al., 2010)	Service, value networks and learning	Journal of the Academy of Marketing Science	Conceptual	N/A	SCM	SCM, innovation, value-creation, activities, resources
(Wilhelm, 2011)	Managing coopetition through horizontal supply chain relations: Linking dyadic and network levels of analysis	Journal of Operations Management	Qualitative Case study	Automobile industries/ Japan and Germany	Dyad level Triad level	Buyer-supplier dyads in supply networks, horizontal supply chain relations.
(Miemczyk et al., 2012)	Sustainable purchasing and supply management: a structured literature review	Supply Chain Management: An	Systematic LR	N/A	Actor, dyad direct and indirect and	Sustainable purchasing, supply management, sustainability, SC, resources, activities

	of definitions and measures at the dyad, chain and network levels	International Journal			extended network level	
(Bellamy et al., 2014)	The influence of supply network structure on firm innovation	Journal of Operations Management	Quantitative	Electronics industry	Actor level	Actors, supply network accessibility, supply network interconnectedness, dyad, and innovation
(Pathak et al., 2014)	Toward a structural view of co-opetition in supply networks	Journal of Operations Management	LR	N/A	Inter-firm relationships	Supply network, co-opetition (competition and cooperation), dyad and network level
(Sayed and Sunjka, 2016)	Investigating and evaluating the influence of supply chain structure on supply chain risk	South African Journal of Industrial Engineering	Qualitative	SMEs (South Africa) steel and engineering companies	SCS influence SCR	SC, SC structure (SCS), actor, resources, activities, SC risk (SCR)
(León-Bravo et al., 2017)	Collaboration for sustainability in the food supply chain: A multi-stage study in Italy	Sustainability	Qualitative (multiple case study)	Italy	the company with activities in a certain FSC stage	Sustainability, innovation, network, resources, actors, relationships, collaboration, food SC, SSC, sustainability performance,
(De Vargas Mores et al., 2018)	Sustainability and innovation in the Brazilian supply chain of green plastic	Journal of Cleaner Production	Qualitative	Brazilian petrochemical company (Green Plastic)	Supply network	SOI, SSCM, collaboration, focal actor, innovation, supply network
(Neutzling et al., 2018)	Linking sustainability-oriented innovation to supply chain relationship integration	Journal of Cleaner Production	Qualitative	Brazilian focal companies (Braskem and Mercur)	Inter-organizational relationships	SOI, relationship, product innovation, organizational innovation, environmental, social and economic performance, resources, activities
(Petljak et al., 2018)	Green supply chain management in food retailing: survey-based evidence in Croatia	Supply Chain Management: International Journal	Quantitative	Food retailers in Croatian	Actor level	Green SCM, environmental and economic performance, activities
(Harsanto and Permana, 2019)	Understanding SOI using network perspective in Asia Pacific and ASEAN: a systematic review	Journal of ASEAN Studies	Systematic LR	Asia Pacific and ASEAN	SOI and network perspective	SOI, network perspective: actor, dyad and network level; environmental, social and economic sustainability, eco-innovation, innovation

2.4.2 Entrepreneurship Perspective

2.4.2.1 Entrepreneurship Concept and Definitions

An entrepreneur has no exact definition (Dorado, 2006). An initial attempt to define an entrepreneur, Cantillon (1755) stated that “*an entrepreneur is someone who establishes an enterprise*” (Spulber, 2009, p. 187). According to Cantillon (1755), described an entrepreneur as a risk taker and decision maker (Kilby, 1971). “Entrepreneur” means “taking the initiative to bridge,” as originated by the French. Sandberg et al (2013, p. 229) defines an entrepreneur “*as a person who is able to combine resources with business opportunities in pursuit of value creation.*” Entrepreneurs are also described as a catalyst for economic change and they seize opportunities (Deakins and Freel, 2012).

Entrepreneurship has substantially been recognized as the engine which drives the society and economy (Carree and Thurik, 2000; Anderson et al., 2006; Chell and Karataş-Özkan, 2014; Zvavahera et al., 2018). Hisrich and Peters (1989) explained entrepreneurship as a process to create something new with value, considering required effort, time and resources, any risks and reward of personal and financial satisfaction. Entrepreneurship is described as a ‘dynamic process of vision, change and creation’ as well as creating and implementing new ideas and solutions (Kuratko and Hodgetts, 2004). Even though entrepreneurship is not a new concept; the interest in entrepreneurship has grown extensively to research over the past decade, as it has been claimed to be a significant advantage in surviving in a competitive market (Pacheco et al., 2010; Kuratko and Morris, 2013).

The theory of entrepreneurship has developed throughout the years as entrepreneurship has been viewed from different angles by field researchers and experts. For example, an important role entrepreneurs undergo is risk, based on the perspective of Risk Bearing Theory of Knight (1921 and 1942). While, the theory of Schumpeter (1949) expressed the function of entrepreneurship is innovation such as innovation of new product, process, technology and new markets, leading to an affect in the economy. Whereas, McClelland (1961) in the ‘need of achievement theory’ argued that entrepreneurship fundamentally relies on motivation. Literature discusses that entrepreneurship is a method to create value, continuous innovation as well as opportunity recognition (Gerlach, 2003; Kuratko and Morris, 2013; Kuratko, 2017; Barusman and Romli, 2019).

Prior research pointed out that the association linking new knowledge and economic growth is entrepreneurship (Audretsch and Keilbach 2007; Kuratko et al., 2014; Nason et al., 2015). Several authors have argued entrepreneurs achieve innovation at different levels (e.g. March and Yagüe, 1997; Cliff et al., 2006; Koellinger, 2008; Nason et al., 2015). Previous researchers expressed if an entrepreneur is innovative they are likely to be more successful than a less innovative entrepreneur

is (e.g. Kropp et al., 2006; Sandberg et al., 2013; Bosma et al., 2010; Nason et al., 2015). As entrepreneurship developed throughout the years, it is not only an innovative person who starts up a business but it includes many different types. These includes: intrapreneurs who are ‘dreamers who do’, innovative people employed within an organization (Pinchot, 1985); corporate entrepreneurship (CE), which is entrepreneurial behavior associated with organizations and the activities they are engaged in (Meyer, 2009); entrepreneurial HR who embrace entrepreneurial thinking and push themselves to take risks and to be innovative (Medcof and Song, 2013).

Table 2.8 below features a sample of example definitions of entrepreneurship and entrepreneur found in the literature.

Table 2.8: Example Definitions of Entrepreneurship and Entrepreneur (Author’s own work).

Author, Year	Definition
(Schumpeter, 1949)	Entrepreneurs pursue to use innovation to gain strategic advantage
(Kilby, 1971)	Entrepreneur is a risk taker and decision maker
(Miller, 2003)	Entrepreneur usually acts on a valuable opportunity and is compelled by a distinct motivation.
(Kropp et al., 2006)	Entrepreneurs should be innovative in order to be more successful
(Sandberg et al., 2013, p. 229)	“Entrepreneur is a person who is able to combine resources with business opportunities in pursuit of value creation.”
(Jay and Gerard, 2015)	It is when focal actors can establish actor network and become entrepreneurs for better linking innovation to sustainability.
(Tidd and Bessant, 2015 p. 6)	“Entrepreneurs are risk-takers, but they calculate the costs of taking a bright idea forward against the potential gains if they succeed in doing something different – especially if that involves upstaging the players already in the game.”
(Thornton, 1999)	Entrepreneurship is the creation of new organizations, implying a particular degree of size and innovation; this creation exists as a context-dependent, social and economic process.
(Anderson et al., 2006)	Entrepreneurship is a method to create value, continuous innovation as well as opportunity recognition
(Audretsch and Keilbach 2007).	Entrepreneurship is the association linking new knowledge and economic growth
(Rebernik and Bradac, 2011)	Entrepreneurship is the basis of competitiveness
(Sarasvathy and Venkataraman, 2011)	Entrepreneurship as a technique of human action.
(Ross, 2011)	Entrepreneurship is a process where organizations search, discover and exploit opportunities by being innovative

Hockerts and Wüstenhagen (2010) suggested that corporate entrepreneurs and entrepreneurs have an associated influence, which stimulates the sustainable transformation of industries, were each one moves the transformation further. There are four main stages of this transformation (e.g. Hockerts and Wüstenhagen, 2010; Lee and Jay, 2015; Jay and Gerard, 2015): (1) start-ups based on sustainability introduced the sustainability innovation to the market. As early growth of the start-up

unfolds, some market incumbents may apply these sustainability innovations. (2) Another start-up based on sustainability emerges as the transformation of the market in regard to sustainability continues. (3) The entrepreneurs of the start-ups are now more business-like and may have professional investors. (4) The maturity of entrepreneurship based on sustainability reaches the mass-market as corporate entrepreneurs; they find market potential as well as threats from start-ups and existing organizations that have intrapreneurs. Hence, entrepreneurs, corporate entrepreneurs and intrapreneurs have strength and weaknesses to drive or hinder SOI (Jay and Gerard, 2015).

Therefore, it is important to understand how focal actors as CE can establish their actor network and become CE at different SC levels for better linking of their innovation to sustainability performance (Lee and Jay, 2015; Jay and Gerard, 2015). For the purpose of this research corporate entrepreneurship (CE), intrapreneurs, and entrepreneurial HR are considered to understand how these actors build their enterprise of innovation in interaction with other SC actors. There has been little research to examine the impact of entrepreneurship on SOI in the food SC, especially at the actor, dyad and network levels in order to have greater sustainability performance for SC actors (Dean and McMullen, 2007; Paloviita, 2009). Hence, for the purpose of this study, the concept of entrepreneurship in SCM is understood as shown below:

“Entrepreneurship is the process of creating value by devoting the necessary time and effort and innovation, where the components of CE, intrapreneurs and entrepreneurial HR are applied at three levels: focal actor, dyadic relationship and chain network for better innovation activities with a focus on SOI across the food SC.” (Author’s own definition).

2.4.2.2 Entrepreneurship High-order Themes

2.4.2.2.1 Corporate Entrepreneurship

Originally, entrepreneurial initiatives were recognized in established organizations to stimulate innovation and firm growth (Chandler 1962; Miles and Snow, 1978). Years passed until corporate entrepreneurship (CE) was addressed (Sharma and Chrisman, 1999; Nason et al., 2015). At the present time, the importance of entrepreneurship in organizations has rapidly increased as well as how entrepreneurial initiatives develop in established organizations (Nason et al., 2015). Hence, CE describes entrepreneurial behavior associated with large firms and the activities they are engaged in (Birkinshaw, 1997; Meyer, 2009). While some scholars argue that CE arises in organizations of all sizes (Lubatkin et al., 2006).

Previous research has pointed to the need to apply CE to all organization sizes and it is more applicable in well-established ones (Meyer, 2009; Nason et al., 2015). Some activities CE engages in are renewal activities, domain redefinition and strategic entrepreneurship (Corbett et al., 2013;

Nason et al., 2015). CE processes may vary in organizations depending on their size. CE in large organizations is usually introduced to successfully deal with size-based limitations to growth and change. Large organizations have substantial resources and routines and they can donate resources to non-financial goals; however, they usually have a great deal of pressure in terms of financial performance from investors, administration and path dependencies, which could limit entrepreneurial activity (Nason et al., 2015). When CE initiatives are implemented in large organizations, they are able to select between concentrating on entrepreneurial activity in a specific sector or spreading entrepreneurial activity through the organization (Birkinshaw, 1997; Meyer, 2009). Prior research has highlighted the importance of contingencies on CE activities and the role of managers (Hornsby et al., 2002, 2009; Nason et al., 2015). These CE activities could be used to develop human capital by means of producing novel knowledge or by transferring knowledge from other actors in the chain (Hornsby et al., 2009). Some benefits of CE as actors are supporting innovation, enhancing knowledge, updating strategies and increasing the profitability of the SC actors (Garrett and Covin, 2007). Top managers are trained for more responsibilities by experience in innovative internal initiatives (Birkinshaw, 1997). In order to retain competitiveness and achieve goals, these actors need to engage in sustained entrepreneurial efforts (Nason et al., 2015).

SC actors of all types and sizes are being challenged by global reality demanding courage, risk-taking, entrepreneurial leadership and innovation (Kuratko and Morris, 2013). These actors rely on CE to develop and nurture innovative competitive advantages (Nason et al., 2015) and are usually seen as dynamic and flexible entities ready to exploit new business opportunities (Kuratko et al., 2012). If CE is ‘managed correctly’, it allows future pursuit of entrepreneurial initiatives (Garrett and Covin, 2007; Kuratko, 2017). Although entrepreneurship and innovation are flaunted as important strategies for an actor to succeed, most organizations are not implementing corporate innovation successfully (Kuratko et al., 2014). Furthermore, CE should structure themselves for an intrapreneurial environment as this influences positive intrapreneurial engagements (Orchard et al., 2018). Bagheri (2017) argues that it is important that CE motivates their employees to be innovative, to explore, experiment, create and implement new ideas; in addition, Fontana and Musa (2017) discuss recognizing an opportunity and seizing it with an innovative idea. An intrapreneurial environment structured by CE that provides resources, allows mistakes and failures, has multidisciplinary teams and organizational boundaries (organizations’ policies and structure), and it provides time for innovative experimentation (Menzel et al., 2007; Vargas-Halabi et al., 2017; Orchard et al., 2018; Stollberger et al., 2019). An entrepreneurial actor goes through stages in order

to implement an innovative idea. These stages are considering, adopting, launching and managing a new idea (Nason et al., 2015), they depend on their policies and regulations.

The internal culture of an actor is the way all its employees behave, feel and reflect on their work in their organization. If positive this may lead to motivated employees hence to a successful chain actor (Omta, 2002; Luqmani et al., 2017; Orchard et al., 2018). External culture such as national culture, political views, economy, trade and government laws, have an impact on an actor, hence they need to cope with these external cultures to build their organization and their internal culture.

In conclusion, CE has been highlighted to be important for organizations (Kuratko et al., 2012; Nason et al., 2015); however, there has been little research on the impact of CE on SOI and especially along the SC actors (Paloviita, 2009; Klewitz and Hansen, 2014). Prior empirical research has examined this impact with no in-depth analysis on SOI in SC, nor the empirical context in the present research (e.g. Klewitz and Hansen, 2014; Jay and Gerard, 2015; Rueda et al., 2017; Behnam et al., 2018). Hence, in the present research, the concept of CE refers to medium-large organizations where the SC actors can apply innovative activities to be competitive. The term CE is a high-order theme in the entrepreneurship perspective.

2.4.2.2.2 Intrapreneurship

The term intrapreneurship was coined by Pinchot and Pinchot (1978) as employee engagement within their organization where employees think innovatively and they might be or might not be encouraged by their organization to be innovative. *“Intrapreneurship is a term that describes the innovation practice within an organization through which employees undertake new business activities and pursue different opportunities”* (Baruah and Ward, 2014, p. 811). Intrapreneurship is being adopted to outline particular strategies and action plans to help integrate substantial employee contributions (Mohanty, 2006). Intrapreneurship is being innovative in order to help organization transformation into business value (Ping et al., 2010). Intrapreneurship also denotes a method of organizing massive businesses to contribute to society (Pinchot, 1985). Intrapreneurial research developed further by highlighting entrepreneurship at the organization level in order to be viewed as the organization's ability to be innovative, compete and take risks (Miller, 1983). Scholars propose that intrapreneurship influences the economic and organizational growth of an organization and that intrapreneurship should be regarded fundamentally as an activity-oriented notion which drives the organization's technologies, products, processes, operations or services in new directions (Antoncic and Hisrich, 2003; Bysted, 2013).

Van Der Sijde et al., (2013, p.29) suggested that there is a “*significant difference between organizations in which the management shows an interest in intrapreneurship and those who do not*”. Intrapreneurship has been associated with entrepreneurship (e.g. Baruah and Ward, 2014) and the entrepreneurial orientations of an organization (Anu, 2007). Authors have explained intrapreneurship as entrepreneurship in an organization (Antoncic and Hisrich, 2003; Ping et al., 2010). According to Bosma et al. (2010) intrapreneurship shares several behavioral characteristics with entrepreneurship, hence it is a type of entrepreneurship. Veronica et al. (2013) described intrapreneurship as ‘domestic entrepreneurs’ since they work towards the interest of their organization and yet focus on creativity and innovation. However, there are some differences that have been highlighted between intrapreneurship and entrepreneurship (Morris and Kuratko, 2002; Baruah and Ward, 2014). First, entrepreneurs own their intellectual rights, unlike intrapreneurs where the organization owns their intellectual rights. Second, for start-up entrepreneurship, the entrepreneur takes the risks and is responsible; however, for intrapreneurs their organization takes the risk and responsibility. Third, entrepreneurs depend on their own resources, whereas intrapreneurs use their organizations’ resources, hence the innovative strategies by the organization drive them to take risks. Finally, intrapreneurs depend on their organizations’ management policies and structure whereas entrepreneurs do not.

Hence, there are several benefits from actors adopting intrapreneurship (Paloviita, 2009; Baruah and Ward, 2014). Actors that develop intrapreneurship can implement innovation processes, leading to innovative processes, services, products and performance outcomes (Veronica et al., 2013). When actors structure their values parallel to intrapreneurial activities, they will have a greater possibility of higher profitability and growth (Antoncic, 2007). Organizational complexities can be addressed when an actor adopts intrapreneurship (Baruah and Ward, 2014). Furthermore, an important factor in intrapreneurship are the intrapreneurs, in an intrapreneurial climate, who are innovators that work on designing and creating new products, services and ideas. Actors that are serious about adopting intrapreneurship should include in their policy rewards and benefits in order to highlight noteworthy successes and to motivate future innovative work (Li and Zhang, 2011; Razavi and Ab Aziz, 2017; Orchard et al., 2018). Goffee and Jones (2007, p.5) expand on this by arguing, “*you must make sure your culture celebrates clever ideas*”. It was noticed in previous research (e.g. Benitez-Amado et al., 2010; Steward et al., 2010) that there was a need to investigate more the applications of the term intrapreneurship, specifically the role of intrapreneurs across the SC actors. Previous research has also called for more studies on the support of intrapreneurs in SOI (e.g. Jay and Gerard, 2015).

2.4.2.2.3 Entrepreneurial HR

Human Resource (HR) is the backbone of every organization (Khan et al., 2013, p. 179). Entrepreneurial HR are the HR managers that embrace entrepreneurial thinking and push themselves to take risks and to be innovative (Medcof and Song, 2013). Most HR managers understand the overall business context; hence they play a key role in firms such as operationalizing responsibilities, team organization, training, performance indicators, teamwork, and relationships (Menon, 2012). Management of HR is known to be a major driver of success in the retail industry within the SC (Miller, 2006; Grünhagen et al., 2014). Entrepreneurial thinking is a skill that can be applied in one's job. This is where some characteristics entrepreneurial HR managers have are the dedication and motivation to be up to date with the latest trends in HR, they are innovative, take risks, they have good communication skills, they are good decision makers, they motivate and lead their employees, and they understand the whole context of their business (Gómez-Cedeño et al., 2015).

HRM and SCM are playing a significant role in the organization performance (Agyabeng-Mensah et al., 2020). *"Therefore, human resource and supply chain management has evolved to play an integrated supporting role in the creation of the value chain system of an organization"* (Khan et al., 2013, p. 179). The importance of HRM and SCM is acknowledged as a means of competitive advantage in industries, therefore integrating HRM and SCM allows firms to establish an innovative strategy and hence enhance their performance (Khan et al., 2013; Gómez-Cedeño et al., 2015). The few studies that have examined the relationship between HRM and SCM were focused on marketing processes, operational systems, resource efficiency, customer service, manufacturing and cost reduction (Giunipero et al., 2008; Shub and Stonebraker, 2009; Fisher et al., 2010). There is evidence of a positive link between HRM practices and the achievements of the SCM (Othman and Ghani, 2008; Pandey et al., 2012; Nils-Ole Hohenstein and Hartmann, 2014). Consequently, a majority of businesses have introduced and invested in HR within their workforce, who are needed for the success and effectiveness of the SC (Khan, 2011).

Gómez-Cedeño et al. (2015) expanded the model of Smith-Doerflein et al. (2011), which suggests an association between SCM and HRM (Figure 2.12). The action of HR managers and the employees of an actor are the success of SCM, where HRM plays a major role for operationalizing responsibilities and network relationships in the SC (Lengnick-Hall and Lengnick-Hall, 2013).

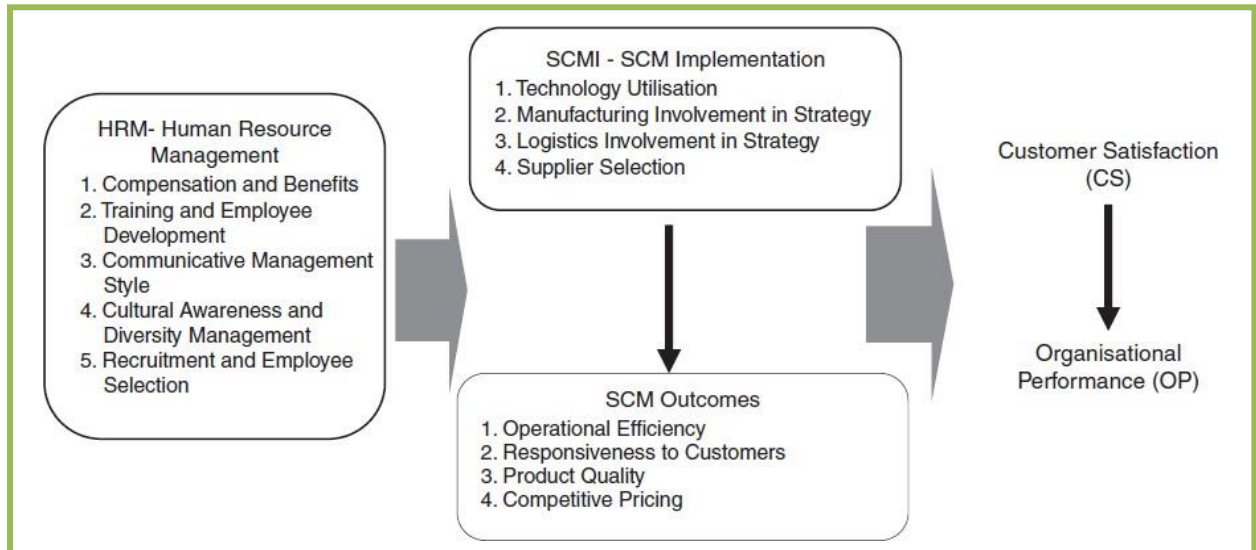


Figure 2.12: The Relationship between HRM and SCM (Smith-Doerflein et al., 2011)

Some HRM practices linked to the SC performance are team organization, training, teamwork and flexible job descriptions (Menon, 2012). Actors are said to be more effective if they are concerned about implementing and developing their HR, for instance, by training their employees, relying on teamwork and trust among employees and suppliers (Gowen and Tallon, 2003; Othman and Ghani, 2008). Therefore, the HRM presents cultural awareness and diversity management and employee selection (Gómez-Cedeño et al., 2015) to support practices for implementing the SC, i.e. utilizing technologies and supplier selection; then there are the outcomes of SCM after the implementations, i.e. operational efficiency and competitive pricing (Smith-Doerflein et al., 2011; Gómez-Cedeño et al., 2015). The success of SCM contributes to better business performance, competitiveness, improved financial performance, customer satisfaction and market share growth.

Several authors have suggested that organizational implementation barriers have limited the efficiency of SCM practices and could be enhanced by HRM (e.g. Leopold et al., 1999; Gowen and Tallon, 2003; Boxall and Purcell, 2011; Nils-Ole Hohenstein and Hartmann, 2014). There is a gap in the literature in regards to examining the relationship between HRM and SCM (Lengnick-Hall et al., 2009; Lengnick-Hall et al., 2013), and how the actors in the SC benefit from HRM (Nils-Ole Hohenstein and Hartmann, 2014). HR managers are key factors for a successful SC and an improved actor performance. Despite this, SC actors usually implement HRM at the focal actor level; hence there is a need to understand HRM at all SC levels to have a greater involvement of all the SC actors and enhanced overall outcomes (Gómez-Cedeño et al., 2015).

HRM is related to entrepreneurial activities (Medcof and Song, 2013; Grünhagen et al., 2014; Gómez-Cedeño et al., 2015); these activities and practices connected with HRM, i.e. recycling, sustainable products and reusing, on the actor performance is a key topic in research (Bowen and Ostroff, 2004; Boxall and Purcell, 2008). Since HRM deals with issues related to organization development, performance management, employee motivation, training, safety, compensation, sustainability and much more (Leopold et al., 1999; Boxall and Purcell, 2008; Khan et al., 2013; Gómez-Cedeño et al., 2015), they have a great understanding of the innovations that are implemented at their actor level that achieve high sustainability in environmental, social and economic terms. They also have knowledge about their relationship with other actors across the food SC at the actor, dyad and network levels. Research on SCs emphasizes the possible benefits from collaboration and integration between the actors across the SC, for example cooperation innovative strategies, information sharing between the chain actors and HR activities (Niezen et al., 2007; Smith-Doerflein et al., 2011; Gómez-Cedeño et al., 2015). Hence, studying the role of HR as entrepreneurs (intrapreneurs) helps to understand the phenomenon of SOI. Therefore, the empirical work is to be conducted from the perspectives of Jordanian food retailers with HR managers and different management departments in order to understand the phenomenon of SOI in food SC in Jordanian food retailers.

2.4.2.3 Entrepreneurship Perspective for SCM

In previous research, many studies have concluded that it would be desirable to see more entrepreneurial approaches to analyzing SCs (e.g. Miemczyk et al., 2012; Jay and Gerard, 2015; Gómez-Cedeño et al., 2015; Namagembe et al., 2017; Li and Holsapple, 2018). Jay and Gerard (2015), suggested that future researchers to further examine the interaction and intersection of entrepreneurs, corporate entrepreneurs and intrapreneurs with the reality of SOI. This analysis can allow new researchers to develop rich understandings of how SC actors integrate the operations and activities between the focal actor as a corporate entrepreneur and other actors across the SC (e.g. Miemczyk et al., 2012; Roscoe et al., 2015; Gómez-Cedeño et al., 2015). This will lead to better connecting of economic growth across them and bring contributions in terms of new knowledge to all actors (Kuratko et al., 2014; Nason et al., 2015). The focal actor can be innovative and achieve innovation at different levels, including actor, dyad and network level (e.g. Nason et al., 2015; Roscoe et al., 2015). According to Johnsen (2011), actors will face conditions of innovation uncertainty where they need to be keen to reach the wider supply network rather than actors in the direct relationship. Table 2.9 provides example research on the entrepreneurship perspective for SCM, it highlights authors, research type, the research context and the key themes in these studies.

Table 2.9: Example Research on the Entrepreneurship Perspective for SCM (Author's own work)

Author, Year	Title	Journal	Research Type/Method	Empirical Context/ Country	Unit of Analysis/ Phenomenon	Key Themes under Research
(Gerlach, 2003)	Sustainable entrepreneurship and innovation	Corporate Social Responsibility and Env. Management	Systematic LR	N/A	Sustainable entrepreneurship	Sustainable entrepreneurship, innovations, sustainable development, ecopreneurship, social entrepreneurship, environmental and social sustainability
(Benitez-Amado et al., 2010)	Information technology enabled intrapreneurship culture and firm performance	Industrial Management and Data Systems	Quantitative	Spanish firms	Relationships among two types of IT resources	Technology resources, intrapreneurship, culture firm performance, innovation
(Medcof and Song, 2013)	Exploration, exploitation and human resource management practices in cooperative and entrepreneurial HR configurations	The International Journal of Human Resource Management	Mix Method	University in China	Intra- and extra-departmental leaderships	HRM practices, Entrepreneurial HR, leadership, organizational processes, innovation
(Steward et al., 2010)	Exploring Supply Managers' Intrapreneurial Ability and Relationship Quality	Journal of Business-to-Business Marketing	Quantitative	SCM Institute/ researcher's university	Firm-level	Coordination, collaboration, intra-preneurial ability, supply management, buyer supplier relationships, supplier performance, risk-taking, innovation, resources
(Ross, 2011)	Entrepreneurial behavior in agri-food supply chains: the role of SC partners	Journal on Chain and Network Science	Quantitative	Food industry	Entrepreneurial performance in SCM	Supply chains, entrepreneurship,
(Shepherd and Patzelt, 2011)	The New Field of Sustainable Entrepreneurship: Studying Entrepreneurial Action Linking "What is to be Sustained" With "What is to be Developed"	Entrepreneurship Theory and Practice	Conceptual framework	N/A	Sustainable entrepreneurship	Sustainable entrepreneurship, sustainable development, innovation, sustainability
(Pandey et al., 2012)	Exploring the role of HR practices in supply chain	Journal of Advances in Management Research	Quantitative	Automobile component manufacturing in India	Organization (actor)	HR practices, SC integration, relationships, information sharing

(Khan et al., 2013)	The impact of HRM practices on supply chain management success in SME	LogForum	Quantitative	Manufacturing/ service sectors in Pakistan	Relationships	HRM practices, SCM, SMEs
(Gómez-Cedeño et al., 2015)	Impact of human resources on supply chain management and performance	Industrial Management and Data Systems	Quantitative	Multi-industries/ Spain	Relationships	HR, SCM, organizational performance, customer satisfaction
(Nason et al., 2015)	The role of organizational size in the heterogeneous nature of corporate entrepreneurship	Small Business Economics	Systematic LR	N/A	CE size based differences	Entrepreneurship, resources, Corporate entrepreneurship
(Luqmani et al., 2017)	Factors behind sustainable business innovation: The case of a global carpet manufacturing company	Environmental innovation and societal transitions	Qualitative (interviews, observations)	A global carpet manufacturing company	Co-innovation process	Entrepreneurship, intrapreneurship, SOI, innovation, Net-Works, sustainable business, environmental sustainability
(Namagamba et al., 2017)	Enviropreneurial orientation in SME supply chains: construct measurement development	World Journal of Entrepreneurship, Management and Sustainable Development	Quantitative	Ugandan SME manufacturing firms	The firm (actor)	Entrepreneurship, Environmental Sustainability, SMEs, Supply chain, risk-taking, innovation
(Li and Holsapple, 2018)	Bring Entrepreneurship into Supply Chain Partner Networks: The Influence on Best-value Supply Chains	Journal of Strategic Innovation and Sustainability	Conceptual framework and propositions	Best-value supply chain	Entrepreneurial supply chain partner network	Entrepreneurship, SC, network, relationships, partners, relational learning, relational trust, relational integration
(Barusman and Romli, 2019)	Optimization of Red Chili Supply Chain through the Development of Entrepreneurship Institutions in Lampung Province	Review of Integrative Business and Economics Research	Qualitative	Three markets in Bandar Lampung,	Optimization of chili supply Chain management	Entrepreneurship, SC, dyad, network, collaboration, food red chilies
(Agyabeng-Mensah et al., 2020)	Examining the influence of internal green supply chain practices, green human resource management and supply chain environmental cooperation on firm performance	Supply Chain Management: An International Journal	Quantitative	Manufacturing firms (food, beverage/alcohol, textiles, agrochemical and plastics)	Manufacturing companies (actor)	SC, environmental sustainability, HR, firm performance, collaboration

2.4.3 Innovation Perspective

2.4.3.1 Innovation Concept and Definitions

Innovation in SCs is *“the creation of new combinations. These new combinations can be a new product, a new technology for an existing application, a new application of a technology, the development, or opening of new markets, or the introduction of new organizational forms or strategies to improve results. This means that an innovation can be not only a new product, but a new production process, a far-reaching re-organization of production and distribution, or even an improved way to achieve innovations, by means of venture capitalism”* (Omta, 2002, p. 73).

Innovation is essential for organizations to stay competitive and compete in the market (Cappellesso and Thomé, 2019); especially innovation that leads to sustainability (Klewitz and Hansen, 2011; Shan et al., 2020). Identifying a market opportunity might be an innovation for an entrepreneur (Williams, 2006). *“Innovation needs entrepreneurship skills and innovation is a major trait of an entrepreneur”* (Hsieh and Wu, 2019, p. 135). Innovations with a focus on environmental improvements are *“changes in technology and practices which reduce the current level of negative impact on the environment”* (Parker et al., 2009, p. 3).

Lundvall (1992) suggested that innovation consists of four different domains: product, process, organizational and market innovation (Figure 2.13).

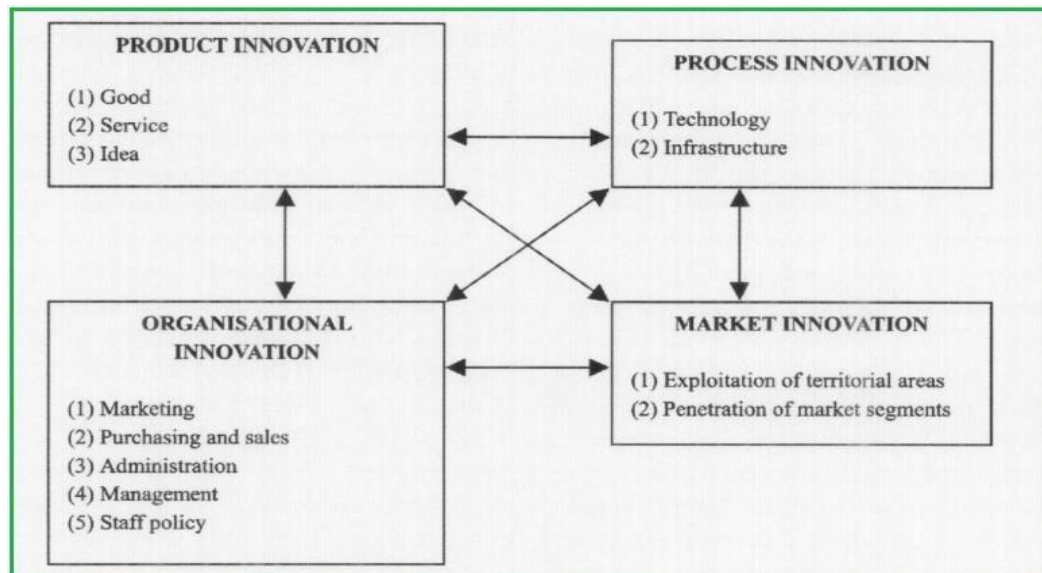


Figure 2.13: Domains of Innovation (Lundvall, 1992, p. 42).

As seen in Figure 2.13, product innovation may be a new good, service or idea. Product innovation is linked to changes in process, organizational and market innovation. Process innovation may be adapting present production lines or new technologies or infrastructures. Process innovation is linked to changes in product, organizational and market innovation. Organizational innovation may be marketing, purchasing and sales, administration, management, and staff policy. Organizational innovation is linked to changes in product, process and market innovation. Market innovation may be the exploitation of territorial areas or penetration of market segments. Market innovation is linked to changes in product, process and organizational innovation. Omta (2002) suggests a further domain named institutional innovation that goes beyond individual companies, they are new, beneficial and genuinely change the norms of the organization. Howell and Higgins (1990) introduces risk-taking as a key factor in innovation as all business innovative activities are a risk. According to Knight (1921) and Hall et al. (2008), risk-taking has been employed in relation to the entrepreneurial implications of sustainable development where the social and environmental domain indicates more uncertainties in different business contexts. Table 2.10 below features a sample of example definitions of innovation found in the literature analyzed.

Table 2.10: Example Definitions of Innovation (Author's own work)

(Author, Year)	Definition
(Schumpeter, 1949)	Innovation is five classifications: “new products, new methods of production, new source of supply, the exploitation of new markets and new ways to organize business.”
(Howell and Higgins, 1990)	Innovators have common characteristics with entrepreneurs, such as a high tolerance of ambiguity, risk-taking propensity, persistence, and self-efficacy.
(Lundvall's, 1992)	Innovation is an ongoing process of leaving, searching and exploring which results in new products, techniques, forms of organization and new markets.
(Aija, 2005)	Innovation is the combination of gathering knowledge, directed to an organization's growth and financial performance.
(Vidil and Marvillet, 2005)	Innovation may be classified as incremental, radical, or disruptive, depending upon whether it originates within, or outside, the mainstream, and whether it renders an incumbent technology (or process) obsolete.
(Jay and Gerard, 2015, p. 14)	“Innovation as the process encompassing the ideation, development, and diffusion of a solution to any existing problem.”
(Tidd and Bessant, 2015 p. 15)	“the successful exploitation of new ideas”
(Aggarwal and Hsu, 2016)	To facilitate the greatest potential value creation, innovation is created in links that integrate contrasting knowledge and assets.
(Kulchina, 2016)	Innovation is the main objective for entrepreneurs to create more value.

Food SCs induce innovation, either adapted or invented, including product, information technology, process, transportation and standards and systems (Croom, 2001; Trienekens et al., 2003; Leat and Revoredo-Giha, 2013; Rueda et al., 2017). An effective way to generate sustainable practices with technology in the food SC does not build on a completely “new” set of skills. Instead, efforts to

create more sustainable practices contribute to the continuous improvement capabilities of a business (Hamprecht et al., 2005; Shah et al., 2017) and how innovative they are. Though innovation is significant in an organization's survival, it can be systematic according to its nature or even unplanned or hectic (Toftoy and Chatterjee, 2004). The applications of innovation have a key focus on products supplied to uncertain markets and different processes attached to sustainable SC activities (Miemczyk et al., 2012; Narasimhan and Narayanan, 2013). Managing innovation can also be a challenge for organizations, some barriers may be employee resilience, poor project management, internal culture, and accepting change (Stermann, 2000). There are some aspects to consider in order to be able to manage innovation: to *“build competence, build via networking, build a capability for innovation, focus innovation in key strategic directions, and build dynamic capability”* (Bessant, 2019, p. 4).

There is a need for in-depth analysis on innovation in the SCM regarding actor's product and process and the risk taken to better organize these innovations for several market segments (Dean and McMullen, 2007; Paloviita, 2009; Klewitz and Hansen, 2014; Roscoe et al., 2015). There has been little research to examine the impact of innovation on SOI in a food SC, especially at the actor, dyad and network levels in order to have a greater sustainability performance (Dean and McMullen, 2007; Paloviita, 2009). Drawing on the discussion and definitions above on the innovation perspective, therefore, the research understands the concept of innovation in SCM, as:

“Innovation is a combination of product, process and organizational objectives, which is managed at the three levels of the focal actor, dyadic relationship and chain network for better sustainability activities with a focus on SOI across the food SC.”
(Author's own definition).

2.4.3.2 Innovation High-order Themes

2.4.3.2.1 Product Innovation

Product innovation is engaged with *“developing new products, staying competitive and seizing market opportunities, responding to external demands, competing in niche markets, capabilities and competencies, and engaging in ecopreneurship”* (Klewitz and Hansen, 2014, p. 11). Product innovation includes replacing raw materials with sustainable ones, in addition to sustainable product features and/or energy saving properties (e.g. Blay-Palmer and Donald, 2006; Bos-Brouwers, 2010). Jay and Gerard (2015, p. 20) stated product innovations concerned with sustainability *“are significant improvements of the environmental and/or social performance of existing goods and services (i.e., an existing product– its composition, design, operation, quality and/or function – is changed in an incremental or radical way), or the development of new goods/services with better environmental and/or social performance.”*

For enterprises to be able to compete in a competitive market they should be innovative such as being able to respond to different market demands (Jenkins, 2009). Enterprises are continuously trying to develop their capability to be innovative in order to maintain competitive advantage compared to their competitors; as innovation allows them to develop and execute efficient strategies and processes leading to innovative products (Al-kalouti et al., 2020). Enterprises can seize opportunities in the market by applying environmental product innovation such as by product differentiation (e.g. Bianchi and Noci, 1998; Martín-Tapia et al., 2010). Enterprises could respond to environmental aspects for example by deciding on raw materials and product design (Biondi et al., 2002). A possibility for enterprises as chain actors to improve their environmental performance is when they are pressured from the SC for instance product innovation, therefore, these actors demonstrate their suitability as a supplier (Pesonen, 2001; Martín-Tapia et al., 2010). Establishing “green core competences” is considered to be necessary for environmental product innovation (Chen, 2008). To attain an environmental product design the actor should search for innovative methods such as life-cycle analysis to improve the life-cycle of a product; this helps stay competitive as well as meeting future environmental regulations (Klewitz and Hansen, 2014). Actors should also consider applying eco-design, which is concerned with designing products and/or practices for sustainability such as energy saving properties, recyclability and eco-friendly materials (Hitchens et al., 2003; Klewitz and Hansen, 2014), as well as considering eco-labelling which is labelling products into environmental categories such as organic and recyclable (Klewitz and Hansen, 2014).

Product innovation also consists of the packaging systems and materials such as the aseptic packaging technology, which allowed refrigerated distribution and storage and enabled the development of the cold SC (Abdelkafi and Pero, 2018). Packaging materials that are environmentally friendly are important for chain actors to consider such as recyclable and biodegradable packaging (Abdelkafi and Pero, 2018). The organizations’ customers are typically involved in product innovation (Jay and Gerard, 2015); Nidumolu et al., (2009, p. 9) stated, “*to design sustainable products, companies have to understand consumer concerns and carefully examine product life cycles. They must learn to combine marketing skills with their expertise in scaling up raw-materials supplies and distribution. As they move into markets that lie beyond their traditional expertise, they have to team up with nongovernmental organizations.*” Some authors (e.g. Blay-Palmer and Donald, 2006; Klewitz and Hansen, 2014) argued that organic products are an area of innovation practice that organizations should consider, e.g. in terms of using raw materials from organic farming, organic cotton and organic food, as this is better for the environment.

2.4.3.2.2 Process Innovation

Process innovation is when an enhancement of a product is made without changing the final product significantly (Ashford and Hall, 2011a). Jay and Gerard (2015, p. 20) pointed out that process innovations concerned with sustainability “*might be the introduction of sustainability criteria in procurement policies, the design and implementation of more resource efficient, less polluting and/or safer production processes, etc.*” Process innovation consists of “*economic benefits, response to external pressures and regulatory changes, adoption of new technologies, pollution prevention, recycling, waste management, resource efficiency as well as capabilities and competencies*” (Klewitz and Hansen, 2014, p. 13). Thus, by saving cost, for example in their production processes, enterprises can gain economic benefits (e.g. Gombault and Versteeg, 1999; Bos-Brouwers, 2010). Enterprises have an advantage of being innovative in their procedures especially when externally pressured or when they are expected to improve their regulations by working towards eco-efficient and cleaner production such as managing energy usage and handling waste. Hence, through eco-efficient practices, SC actors can enhance their environmental performance and attain economic benefits (Klewitz and Hansen, 2014), as well as support towards radical process and eventually product innovations (Michelsen and Fet, 2010). Adopting environmentally friendly technologies and gaining economic benefits is related to cleaner production and therefore associated to eco-efficiency (Bianchi and Noci, 1998). In process innovation, environmental management is considered such as being able to respond to chain pressures, enhancing environmental performance and/or improving communication (Pesonen, 2001). Freight transportation via trailer truck-sized containers has reduced the time and cost needed to pack and transport products; efficient transportation networks and distribution channels taken reduces time and cost, improve delivery and the availability of products (Abdelkafi and Pero, 2018).

2.4.3.2.3 Risk Taking

Knight (1933) argued entrepreneurs took risk to achieve an opportunity they recognized in the market. However, recent years have revealed that risk may create significant failure. The understanding of “lone hero” is associated to the risk an entrepreneur takes (Warren, 2005). Facing various risks alone may be challenging for entrepreneurs such as financial risks and different risks generated by an unsustainable structure of the economy. For instance, carbon waste generated by the production and distribution system of the global economy is damaging the environment (Hillman, 2004).

Prior research in the entrepreneurship field has shed light on understanding how sustainable development may be achieved (e.g. Potocan and Mulej, 2003). For example, Knight’s (1921) work

on risk has associated the strategic and entrepreneurial implications of sustainable development (Hall et al., 2008), hence the environmental and social aspects point out uncertainties. Pacheco et al. (2010) argued some entrepreneurs are attentive to markets and may support the allocation of environmental resources and practices. Focal actors are more likely to implement innovation-oriented product development despite the risks and uncertainty (Kamath and Liker, 1990; Lii and Kuo, 2016), and focal suppliers have a greater tendency to cultivate new products when they work with innovation-oriented actors (Klewitz and Hansen, 2014).

2.4.3.2.4 Organizational Innovation

Ashford and Hall (2011b, p. 287) defined organizational innovation as “*novel changes in and among various organizational aspects of an enterprise’s functions, such as R&D, product development, marketing, environmental and governmental affairs, industrial relations, worker health and safety, and customer and community relations.*” It has been acknowledged that innovation is not only developing or adopting technologies but similarly re-organizing and applying new business routines, relations, marketing and internal organization (Anzola-Román et al., 2018). Adopting only technological innovations is inadequate to keep up with competition hence organizations would benefit more if they complemented organizational innovation since they would be more systematic and difficult to replicate. This would therefore be a source of competitive advantage (Martin-Rios and Parga, 2016). Based on literature, organizational innovation enhances creativity and flexibility and thus enables the growth of product and process innovations (Mothe and Nguyen-Thi, 2010; Sapprasert and Clausen, 2012; Anzola-Román et al., 2018). It is generally acknowledged that organizational innovation is an enterprise-level type of innovation in management initiatives (Oke et al., 2007). The widest known definition of organizational innovation in empirical research is “*the introduction of a new organizational method in the business practices, the organization of the workplace or the external relations of the firm*” (OECD and Eurostat, 2005, p. 51).

Consequently, research on organizational innovation is relatively inadequate but is growing steadily (Sapprasert and Clausen, 2012; Anzola-Román et al., 2018). It has been acknowledged in prior literature that organizational innovation is a support for technological innovation in the context of a source of competitive advantage (Martin-Rios and Parga, 2016; Anzola-Román et al., 2018). From the time when Schumpeter (1934) introduced the idea of innovation, it has been broadly recognized that between the different forms of innovation there are complementarities. Several scholars have emphasized on the significance of implementing product, process and organizational innovation, since they influence each other in order to integrate new opportunities and ideas into the market

(Tidd and Bessant, 2005; Sapprasert and Clausen, 2012). Anzola-Román et al. (2018) underlined the significance of implementing organizational innovation to increase the generation of product and process innovations. They concluded *“that managers should not focus exclusively on generating and implementing technological innovation but on combining these efforts with new-to-the-firm management activities, associated with new ways of organizing the workplace and the decision making processes, with new methods of coordinating activities and with changes regarding the management of the external relations of the firm”* (Anzola-Román et al., 2018, p. 245).

Organizational innovation consists of innovation practices, which include activities such as the engagement in externally sourced innovation practices, development of internal R&D activities, environmental policy, environmental management accounting, local sourcing, stakeholder management, organizational structures, sustainability vision, employee development and training, code of conduct, employee engagement in sustainability and health and safety issues (Larson, 2000; Lee and Klassen, 2008; Jenkins, 2009; Mazzanti and Zoboli, 2009; Bos-Brouwers, 2010; Anzola-Román et al., 2018). Hence, actors consider that achieving specific certificates regarding environmental performance is in response to pressure from other actors in the SC. This supports the focal actors in learning about a specific topic and enhances their communication and knowledge of environmental performance of their organization (Klewitz and Hansen, 2014).

2.4.3.3 Innovation Perspective for SCM

Actors can reach innovation in order to benefit from know-how, technology and knowledge that may be distributed across other actors during product and process innovation (Miemczyk et al., 2012; Narasimhan and Narayanan, 2013). This requires developing strong ties with strategic suppliers and/or buyers at the focal actor, dyadic relationship and network levels for a SC (Cousins et al., 2011). For example, the transfer of knowledge on product quality, packaging, storage and transportation issues between suppliers and other actors (e.g. buyers and service providers) informs drivers of innovation, leading those SC members to cooperate on new solutions to technical problems in the market (Cousins et al., 2011; Perols et al., 2013; Rueda et al., 2017). As different innovations are developed and implemented at the actor level and across the SC, the actors will need to be flexible in order to manage challenges they may face to produce the products efficiently to meet the demands of their customers (Liu et al., 2019).

Figure 2.14 illustrates how a focal actor builds strategic and/or non-strategic suppliers for innovation in a SC (Roscoe et al., 2015). Previous researchers (e.g. Beamon, 1998; Croom, 2001; Trienekens et al., 2003; Leat and Revoredo-Giha, 2013; Klewitz and Hansen, 2014) have argued that resources

and activities beyond the boundaries of the focal actor can be reached based on inter-actor relationships along their networks in order to bring more advantages through innovation. These resources and the activities built around them are various processes, information and data, assets and facilities (Martín-Tapia et al., 2010; Klewitz and Hansen, 2014).



Figure 2.14: Focal Actor-Strategic/Non-Strategic Dyads in a Network. (Roscoe et al., 2015, p. 8).

According to Miemczyk et al. (2012) and Narasimhan and Narayanan (2013), research on innovation in the SCM has used the actor or dyad levels of analysis to investigate the innovation concept and very few studies have applied the network level to analyze innovation in the SCM. Innovations in SCs can lead to improvements in the organizations performance by increasing their activities and functions as well as reducing cost (Abdelkafi and Pero, 2018). Hence, there is a need to highlight the importance of innovation in SCs and consequently in SSCM. There is a need to understand how focal actors (i.e. retailers) apply innovations at the focal actor, dyad and network levels for greater sustainability performance in food SC. Table 2.11, provides example research on the innovation perspective for SCM, authors and key themes used in these studies and the research context are highlighted to identify research gaps.

Table 2.11: Example Research on the Innovation Perspective for SCM (Author's own work)

Author, Year	Title	Journal	Research Type/Method	Empirical Context/ Country	Unit of Analysis/ Phenomenon	Key Themes under Research
(Omta, 2002)	Innovation in chains and networks	Journal on Chain and Network Science	Qualitative	Agri-food and Pharmaceutical sectors	Innovation in chain and network structure	Innovation, network, chain, culture, innovation strategy, innovation system, HR development, cooperation, industrial organization theory
(Trienekens et al., 2003)	Innovation Through (International) Food Supply Chain Development: A Research Agenda	International Food and Agribusiness Management Review	Qualitative	International food supply chains/ developing countries	Innovation in international food supply chains	SCM, Industrial Organization theory, Network Theory.
(Klewitz and Hansen, 2014)	Sustainability-oriented innovation of SMEs: a systematic review	Journal of Cleaner Production	Systematic LR	N/A	SOI of SMEs	Product, process and organizational innovation, sustainable entrepreneurship, sustainability, SCM
(Roscoe et al., 2015)	Developing eco-innovations: A three-stage typology of supply networks	Journal of Cleaner Production	Qualitative-grounded theory	Conceptual	Innovation network	Eco-innovation, sustainability, SCM, Natural Resource-Based View, network typology
(Lii and Kuo, 2016)	Innovation-oriented supply chain integration for combined competitiveness and firm performance	International Journal of Production Economics	Quantitative	Electronics industry/ Taiwan	Innovative firm in supply chain	Innovation orientation, supply chain integration, firm performance, SCM, sustainable development
(Rueda et al., 2017)	Corporate investments in supply chain sustainability: Selecting instruments in the agri-food industry	Journal of Cleaner Production	Qualitative	Agri-food sector/developing country	Actor, dyad and network level	Environmental, social and economic sustainability, green supply chain
(Ayoub et al., 2017)	The effect of supply chain integration on technical innovation in Jordan	Benchmarking: An International Journal	Quantitative	Manufacturing companies/ Jordan	Actor and dyad level	Innovation, SCM, sustainability
(Goodman et al., 2017)	Our Collaborative Future: Activities and Roles of Stakeholders in Sustainability-Oriented Innovation	Business Strategy and the Environment	Qualitative	Nine European countries (e.g. organic food retailer, food producer, manufacturer, etc.)	Activities and Roles of Stakeholders in SOI	SOI, SC, product innovation, process innovation, stakeholder theory, social and environmental sustainability

(Anzola-Román et al., 2018)	Organizational innovation, internal R&D and externally sourced innovation practices: Effects on technological innovation outcomes	Journal of Business Research	Quantitative	PITEC database/ Spain	Innovation	Organizational, technological, product and process innovation,
(Behnam et al., 2018)	How should firms reconcile their open innovation capabilities for incorporating external actors in innovations aimed at sustainable development?	Journal of Cleaner Production	Qualitative, multiple-case study	SOI projects at firms/ Italy and Spain	Innovation project	Innovation, sustainability, sustainable development
(Abdelkafi and Pero, 2018)	Supply chain innovation-driven business models: Exploratory analysis and implications for management	Business Process Management Journal	Qualitative	German and Italian companies	Link between SC innovation and business models	SC, innovation, business models, SC innovation (structural/configurational, operational, and revolutionary innovation), technological innovation,
(Tebaldi et al., 2018)	Sustainable Supply Chain and Innovation: A Review of the Recent Literature	Sustainability	Systematic LR	N/A	SSC and innovation	SSC, innovation, sustainable development, eco-innovation, sustainable supply chain innovation (SSCI); process, product, organizational, marketing, technological and resource allocation innovation
(Cappellesso and Thomé, 2019)	Technological innovation in food supply chains: systematic literature review	British Food Journal	Systematic LR	N/A	Technological innovation in food SCs	Food supply chains, Technological innovation, Product and process innovation, Radical and incremental innovation
(Shan et al., 2020)	Influence of Supply Chain Collaborative Innovation on Sustainable Development of Supply Chain: A Study on Chinese Enterprises	Sustainability	Quantitative	Chinese enterprises (various industries)	Innovation on Sustainable development of SC	SC, sustainable development, SSC performance; technology, management and market collaborative innovation

2.4.4 Sustainability Perspective

2.4.4.1 Sustainability Concept and Definitions

“Sustainability is the possibility that humans and other life will flourish on Earth forever. [...] Reducing unsustainability, although critical, will not create sustainability” (Ehrenfeld and Hoffman, 2013, p. 17 and 54). Sustainability has social, economic and environmental dimensions (Figure 2.15), originating from the Triple Bottom Line theory (Seuring and Müller, 2008; Kuhlman and Farrington, 2010). Christopher (2011) argued that for an organization to be sustainable it must carry out the three dimensions and their activities hence remaining viable and profitable.

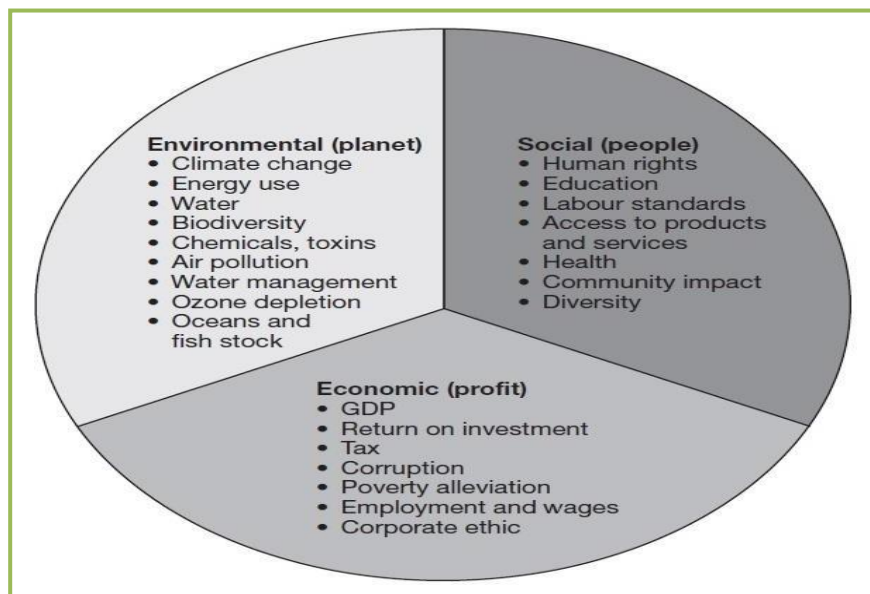


Figure 2.15: Dimensions of Sustainability (Christopher, 2011, p. 242)

As the literature evolved, sustainability has become acknowledged as an innovative and a transformation for generating new products, processes and services that challenge existing practice (Jay and Gerard, 2015). Sustainable SCs have grown dramatically over the last two decades (Tasca et al., 2017; Neutzling et al., 2018). Entrepreneurship is fundamental to innovation and therefore for a sustainable framework (Freel and Harrison, 2006). Sustainability is a way to operationalize corporate social responsibility (Elkington, 1994). The conceptualization of this theory relates to the three dimensions of social, environmental and economic issues that have evolved from the term “standalone” through the notion of social responsibility, and finally the term sustainability (Carter and Easton, 2011). This term is linked to the SCM field as there were scholars (e.g., Carter and Rogers 2008; Gómez-Cedeño et al., 2015) who called for more focus on the interrelationships among topics such as the environment, HRM, safety and high benefits and how they apply to SCM. Table 2.12 below features a sample of example definitions of sustainability.

Table 2.12: Example Definitions of Sustainability (Author’s own work)

(Author, Year)	Definition
(Vos, 2007)	Sustainability covers environmental factors within technologies, organizations, governments, and multilateral institutions.
Kuhlman and Farrington (2010).	Sustainability has three dimensions of social, economic and environmental issues, originating from the Triple Bottom Line theory
(Turan, 2010)	Sustainability consists of three dimensions (social, economic and environmental), but intersecting areas of these dimensions are eco-social, eco-environmental, socio-environmental and eco-socio-environmental
(Collier et al., 2013)	Sustainability emphasizes environmental, social and economic considerations, to increase the quality of life for present-future generations.
CITE from (Jay and Gerard, 2015, p. 56)	Sustainability is as the solution’s “ability to affect positive impact over the product lifecycle, taking into account technical, economic, social, institutional, regulatory and environmental factors.”
Beske and Seuring (2014, p.327)	Sustainability is “the three Bottom Line: environmental, social and economic where SSCM is in a way a “SCM Plus””, with the sustainability criteria.
Rueda, et al. (2017)	Sustainability is a key focus in the food industry and its associated supply chains for several differences such as seasonal nature of products, high levels of market concentrations, health and safety issues and farming society.

According to Carter and Easton (2011), SC actors have started to have a better understanding of how these issues fit together to form the overall sustainability position for the whole SC. This can be applied to different food SC activities (Flint and Golicic, 2009). Different researchers have studied sustainability in SCM and their focus was on how to incorporate sustainability into SCs, however, their empirical research was not conducted on the three sustainability dimensions. Some of these researchers have examined sustainability in food SCs and discussed the effect of the three dimensions, but they have not fully explored these dimensions and have not linked sustainability to innovations. Rueda et al. (2017) highlighted the fact that sustainability in food SCs is adopted by retailers but the focus has been on one link with the production stage. Therefore, there has been little research to examine the impact of sustainability on SOI in a food SC, especially at the actor, dyad and network levels in order to have greater sustainability performance (Flint and Golicic, 2009; Nason et al., 2015; Rueda, et al., 2017; Neutzling et al., 2018).

Drawing on the discussions and definitions above on the sustainability perspective, and to explain the sustainability perspective better, it is necessary to understand the concept of sustainability, as:

“Sustainability is a set of economic, social and environmental criteria, which is managed at the three levels of the focal actor, dyadic relationship and chain network for better sustainability performance with a focus on SOI across the food SC.” (Author’s own definition).

2.4.4.2 Sustainability High-order Themes

2.4.4.2.1 Environmental

Numerous researchers in sustainable entrepreneurship and SC studies are interested in the environmental dimension (Hockerts and Wüstenhagen 2010). Some researchers argue that the ecosystem is the foundation of the environmental system since natural resources, e.g. air and water, are part of our environmental system (Shepherd and Patzelt, 2008, 2011; Slaper and Hall, 2011) and need to be conserved as they are insufficient. Businesses have been concerned with supporting the environmental dimension (Schaper, 2002; Shepherd and Patzelt, 2008, 2011; Petljak et al., 2018).

Wittstruck and Teuteberg (2011) have focused on the environmental aspects of sustainability in the SC by including these aspects as alternative strategies to better market the products and ideas of businesses. Actors in the SC focus on performance characteristics that are linked to environmental performance (Kim et al., 2011), for example: reducing energy demand and substituting fossil fuels (Luqmani et al., 2017). However, improvements in the production and marketing activities for business actors along the food SC, especially enabled by unsustainable mechanization and unplanned collaboration in resource use, raw material enhancement and consumer added value, have led to negative environmental impacts (Luzzini, et al., 2015). These impacts relate to various emissions and pollutants (e.g. water resources, CO₂ levels, machinery usage and soil mineralization) as well as short-term social (e.g. job security and family business) and economic (e.g. profitability) benefits (Tasca et al., 2017). Actors who are CE in the SC should design their products based on environmental-based innovation (Petljak et al., 2018). This is where materials and reductions in product and packaging waste are implemented in their activities and operations, which can lead to improvements in the welfare of the actor's workforce (Tasca et al., 2017).

Actors and their chains are under pressure. Retailers in particular are expected to identify the environmental impact of their processes not only at the actor but also at the dyad and network levels (Jones et al., 2005; Wong et al., 2015; Chkanikova and Mont, 2015; Kirchoff et al., 2016). Hence, this responsibility drives environmental awareness across the chain actors, thus improving the environmental performance across the SC as well as the social and economic performance (Styles et al., 2012; Petljak et al., 2018). Therefore, there is a need for focal actors to collaborate at the dyadic and network levels as a way to serve the needs of the focal actor and other actors along the SC. In particular, finding the right fit between the three dimensions of environmental, social and economic issues is critical for many actors. Thus, once an environmental innovation is undertaken the focal actor should transfer these technologies and processes to other actors so they are able to perform them in their operations (Tasca et al., 2017; Petljak et al., 2018).

2.4.4.2.2 Social

“The social responsibility of business is to increase its profits” (Friedman 1970), this influenced different business techniques then, such as they supposed by conducting activities of product development or job creation they were working towards social development. However, businesses currently interpret social responsibility differently as corporate social responsibility has developed rapidly. For instances, businesses ought to deal with concerns towards the society such as child labor and human rights, since in sustainable entrepreneurship ‘people’ should be sustained (Crals and Vereeck, 2004). However, Spence et al. (2010) discussed that entrepreneurs contribute towards environmental and social domains in sustainable entrepreneurship. A sustainable entrepreneur should produce ‘social cohesion’, which is to achieve society needs (Richomme-Huet and De Freyman, 2011). Thus, sustainable entrepreneurship focuses on the social and environmental aspects on the part of all sustainable entrepreneurs.

In food SCs, actors should be responsible for looking at the social dimension from the perspectives of the chain employees, their customers and the related society where this SC exists (Nason et al., 2015; Rueda, et al., 2017). It is recorded by the United Nations that agri-food SCs employ 40% of the global population (United Nations, 2016). Employees are the core of sustainability development and they are in need of motivation, training, fair labor conditions and benefits (Beske and Seuring, 2014; Nason et al., 2015; Rueda, et al., 2017). According to Rueda, et al. (2017), Tasca et al. (2017) and Petljak et al. (2018), all collaborative actors across their SC are likely to share plans and standards to support multi-level management in terms of fair conditions, safety and health care and sustainable development training. Furthermore, the whole of the society affected or involved by the food supply chain has an impact on the sustainable chain operations (Rueda, et al., 2017). This is where the final product and diverse brands should be attached to value adding for the benefits of the people targeted in the diverse markets and their segments (Richomme-Huet and De Freyman, 2011). The product safety, health and nutritional content of the supplied products should be indicated truthfully for the society (Luo, et al., 2018). Various product options should be provided with different prices based on the income ability of society (Luo, et al., 2018).

2.4.4.2.3 Economic

Almost all sustainable resource issues originate from the economic theme, by the endeavors to get the environmental resources to last as long as possible to support economic development (Solow, 1991). Maintaining the economic setting is very important. The economic dimension of sustainability consists of two aspects: 1) financial performance, such as cost reduction and profits and 2) related to the *“economic interests of external stakeholder, such as a broad-based*

improvement in economic well-being and standard of living” (Sheth et al., 2011, p. 24). When considering these two aspects together, an enterprise can reflect on both the actor’s financial performance as well as its contributions to the community and markets (Choi and Ng, 2011).

The economic theme is related to profit, for example the money made by the entire country, which is known as Gross Domestic Product (GDP). GDP is useful for measuring the amount of economic activity (Kuhlman and Farrington, 2010; Esfahbodi et al., 2016). The task of the economist is to assess the scarcity of resources and meet human aspirations. Eco-efficiency and socio-efficiency are concerned with enhancing economic sustainability (Dyllick and Hockerts 2002; Choi and Ng, 2011). Enterprises that are economically sustainable use programs to attempt to minimize operating costs e.g. reducing environmental impacts and resource intensity (Esfahbodi et al., 2016). The economic dimension has different factors such as return on investment and taxes on both inputs and outputs along the SC (Christopher, 2011). Chain actors consider the life cycle of products to develop their economic dimension, including dyads and networks for better SC efficiency, competitive procurement, efficient packaging and logistics, customer satisfaction and quality, and end of life for costs of take-back and reverse logistics (Hansen and Grosse-Dunker, 2013).

It was argued in previous research (e.g. Hansen and Grosse-Dunker, 2013; Christopher, 2011; Carter and Easton, 2011; Esfahbodi et al., 2016) that there is a need for examination of the applications of the economic dimension for the focal actor and other involved actors in the SC for better evaluation of the sustainability performance for each actor and the overall SC. It is also important that the economic dimension is examined with the applications for the other dimensions: social and environmental and especially their impacts on SOI in food SC for better overall sustainability performance.

Table 2.13 shows different sustainability criteria identified in previous research on SCM.

Table 2.13: Sustainability Criteria in SCM (Adapted from: KhanMohammadi et al., 2018, p. 385)

Sustainability Aspect	Criteria	Description	References
Economic	Cost	Material prices are proportional to market prices. Cost reduction, direct costs, production costs, inventory costs	Amindoust et al. (2012)
	Quality	Improvement programmes, corrective action system, quality awards, number of products returned by customers	Amin and Zhang (2012)
	Technology	Production facilities/capabilities. technological development of suppliers, capacity, development pace of suppliers	Amindoust et al. (2012)
	Culture	Sense of trust, Management's view about future, strategic alignment, top management capabilities, coordination between levels and functions	Golmohammadi and Mellat-Parast (2012)
	On Time Delivery	Coincidence with desired dates, Delays, delivery effectiveness, delivery reliability, lead time	Amin and Zhang (2012)
	Flexibility	Production volume change, short start up time, flexible machinery, time and cost needed to introduce new products	Govindan et al. (2015)
	Geographical Distance	transportation costs	Büyükoğkan and Çifçi (2012)
	Innovative Relations	Introducing new products, introducing new technologies, long-term relations, communication openness	Amin and Zhang (2012)
Environmental	Pollution Production	average volume of air pollutants, water and sewage, solid waste, abandoned hazardous waste materials	Amindoust et al. (2012)
	Green Design	A plan for resource effectiveness, product design with recyclability, design for dangerous material reduction	Bai and Sarkis (2010a)
	Environmental System	environmental certificates like ISO14000, constant supervision, environmental policies, Internal control processes	Govindan, et al., (2013)
	Pollution Control	reconstruction, end controls	Kuo, Wang, and tien (2010)
	Resource Consumption	raw material consumption, energy and water	Zhu and Sarkis (2004)
	Green Image	Percentage of green customers compared to the total number of customers, social responsibility	Amin and Zhang (2012)
	Green Production	use of recycled material green packaging, extra packaging reduction	Shen et al. (2013)
	Clean Technology	green technologies	Amin and Zhang (2012)
Social	Green Material	Green Material that can be reused or renewable	Bai and Sarkis (2010a)
	Using Reverse Logistics	green supply chain, reusing degradable products, closed material recycling cycles	Bai and Sarkis (2010a)
	Stakeholders' Rights and Interests	Supporting the lower-wage class, gender equality, lack of discrimination	Govindan, et al., (2013)
	Fair Human Resource Recruitment	recruitment relations, freedom to have gatherings and bargaining, working hours	Bai and Sarkis (2010b) and Shen et al. (2013)
	Social Responsibility	Capacity making, wage levels, fair trade methods, child labour	Shen et al. (2013) and Amindoust et al. (2012)
	Health and Safety of Human Resources	Physical, mental and social health, healthy sources, food security	Amindoust et al. (2012), and Govindan, et al.,(2013)
	Employee and Customer Satisfaction	Both internal and external customers should be satisfied for long-term.	Shen et al. (2013) and Amin and Zhang (2012)
	Local Development	taking local spaces into consideration	Bai and Sarkis (2010b)
	Sound Pollution	fighting and preventing sound pollution	Shen et al. (2013)
	Discrimination at Workplace	forced labour, freedom to have gatherings and bargaining, working hours, gender equality	Shen et al. (2013) and Amin and Zhang (2012)

2.4.4.3 Sustainability Perspective for SCM

Previous research on sustainability in the SCM has used the dyadic level of analysis, however, examining sustainability at the network level in the SC has been rare (e.g. Carter and Rogers 2008; Flint and Golicic, 2009; Miemczyk et al., 2012; Narasimhan and Narayanan, 2013), especially in Jordan a developing country (e.g. Ayoub et al., 2017). More importantly, there is a need to examine sustainability performance at the economic, social and environmental levels in the SC, which has been rare in prior research (Su et al., 2015; Esfahbodi et al., 2016). In the food SCM, the focal actor should work in an entrepreneurial way in order to create the value of innovation activities, leading to a better sustainability performance (Folkerts and Koehorst, 1998; Yakovleva and Flynn, 2004; Meyer, 2009; Nason et al., 2015). Therefore, there is a need to advance a conceptual framework for sustainable SCs by highlighting the importance of innovation in sustainability across the SC actors (Miemczyk et al., 2012; Boons et al., 2013; Neutzling et al., 2018).

The capability to develop a sustainability strategy is affected by the innovation power of the focal actor and its supply network for a SCM (Van Bommel, 2011; Boons et al., 2013; Pancino et al., 2019). Actors have to deal with risk-based strategies when the innovation management represents a low level of innovation power and deals with strategies of sustainable products when a high level of innovation power is present (Van Bommel, 2011). However, there has been a lack of research on how actors in SSCM can find innovation along the SC with a focus on the supply network for the focal actor (Pagell and Wu, 2009; Roscoe et al., 2015). For example, Awaysheh and Klassen (2010) conducted a study on plant industries and their SCs; they have explained the sustainability performance in SCM at the actor level, where the focal actor engages in sustainable practices across the SC with the intention of improving the focal actor's performance.

Figure 2.16 illustrates how the sustainability perspective (environmental, social, and economic dimensions) is incorporated in SCM, leading to a SSCM and thus enhancing the overall SC sustainability performance.

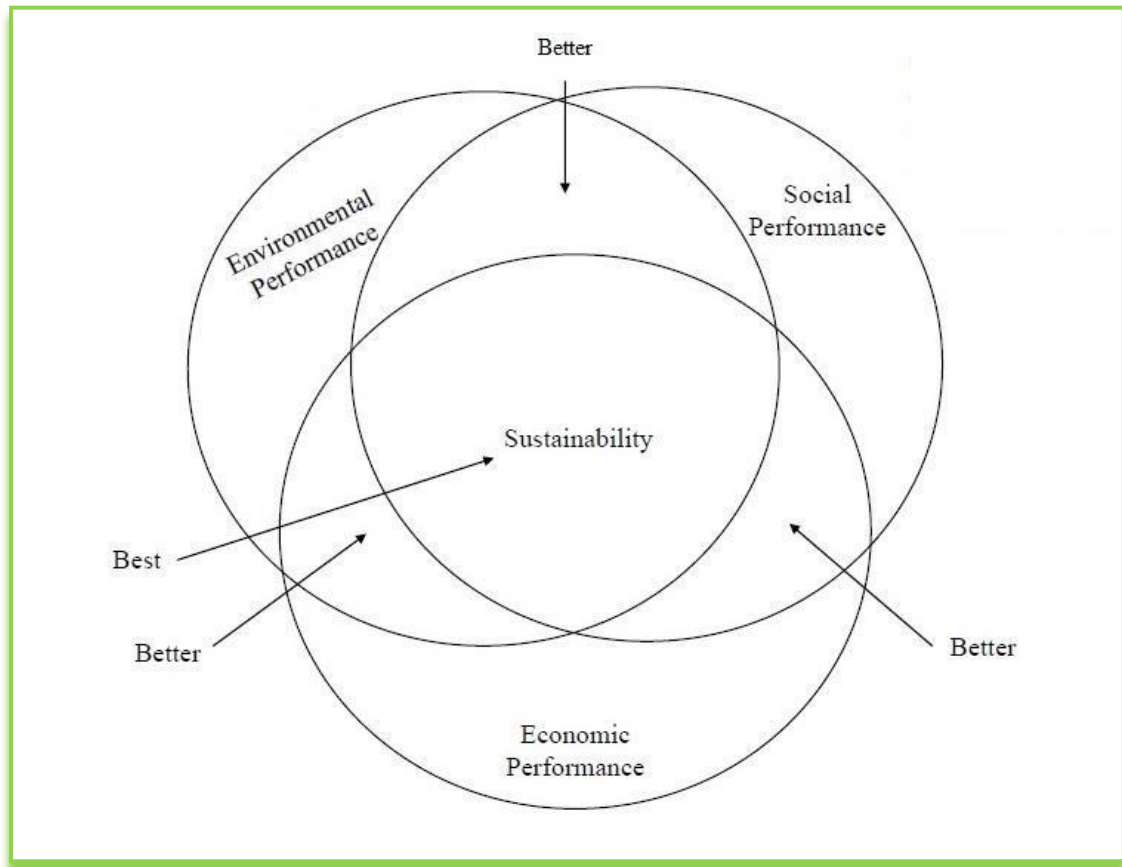


Figure 2.16: Sustainability, SSCM and Sustainability Performance. (Adapted from: Carter and Easton, 2011).

These sustainable practices are related to technologies for manufacturing that reduce emissions and provide products that use fewer raw materials (Trienekens et al., 2003; Awaysheh and Klassen, 2010). This is also related to how this focal actor transfers and receives, for example, product and process innovations to/from other actors along the network of their sustainable SC (Carter and Easton, 2011; Roscoe et al., 2015), leading to environmental issues of reductions in resources and packaging waste (Carter and Easton, 2011; Ahi and Searcy, 2013) and social issues of the welfare of the actor's workforce (Ahi and Searcy, 2013). Hence, there is a need to highlight the importance of sustainability in SCs and consequently in SCM innovations. There is a need to understand how focal actors (i.e. retailers) apply sustainability with different innovations at the focal actor, dyad and network levels for greater sustainability performance in food SC. Thus, this should contribute to understanding SOI in food SCM.

Table 2.14, provides example research on the sustainability perspective for SCM, it highlights the authors, key themes used in these studies and the research context to identify findings and research gaps.

Table 2.14: Example Research on the Sustainability Perspective for SCM (Author's own work)

Author, Year	Title	Journal	Research Type/Method	Empirical Context/ Country	Unit of Analysis/ Phenomenon	Key Themes under Research
(Hamprecht et al., 2005)	Controlling the sustainability of food supply chains	Supply Chain Management: An International Journal	Qualitative	Nestle' 's Food supply chain/ Switzerland	Controlling sustainability in food SC	Environmental and social sustainability; collaboration
(Carter and Rogers, 2008)	A framework of sustainable supply chain management: moving toward new theory	International Journal of Physical Distribution and Logistics Management	Conceptual framework	N/A	SSCM	Environmental, social and economic sustainability, SSCM, resource dependence theory, transaction cost economics, population ecology, resource-based view of the firm
(Kuhlman and Farrington, 2010)	What is sustainability?	Sustainability	Systematic LR	N/A	Sustainability	Environmental, social and economic sustainability; Triple Bottom Line theory
(Choi and Ng, 2011)	Environmental and economic dimensions of sustainability and price effects on consumer responses	Journal of Business Ethics	Quantitative	Floor tile industry	Sustainability impact on consumer response	Environmental and economic sustainability; consumer response, sustainable development
(Carter and Easton, 2011)	Sustainable supply chain management: evolution and future directions	International Journal of Physical Distribution and Logistics Management	Systematic LR	N/A	SSCM	Economic social and environmental sustainability; corporate social responsibility; organizational culture, transparency
(Schaltegger and Burritt, 2014)	Measuring and managing sustainability performance of supply chains	Supply Chain Management: An International Journal	Conceptual framework	N/A	Measuring sustainability performance of SCs	Sustainability, innovation, SOI, supply chains, sustainability performance and management, SSCM, network level
(Adams et al., 2016)	Sustainability-oriented innovation: a systematic review	International Journal of Management Reviews	Systematic LR	N/A	SOI	Environmental, social and economic sustainability; product, process and organizational innovation, SOI, SCM
(Esfahbodi et al., 2016)	Sustainable supply chain management in emerging economies: Trade-offs	International Journal of Production Economics	Quantitative	Manufacturing firms in developing	Environmental SSCM	Environmental and economic sustainability, SSCM, Resource dependence theory

	between environmental and cost performance			countries/ China and Iran		
(Akhavan and Beckmann, 2016)	A configuration of sustainable sourcing and supply management strategies	Journal of Purchasing and Supply Management	Quantitative	Multiple-sectors across OECD Europe, Americas, Asia Pacific and BRICS	Sustainable sourcing and supply management (SustSSM) strategies	Environmental, social and economic sustainability, SC, sustainable sourcing, product innovation, process innovation, focal company; actor, dyad and network level
(Tasca et al., 2017)	Environmental sustainability of agri-food supply chains: An LCA comparison between two alternative forms of production and distribution of endive in northern Italy	Journal of Cleaner Production	Quantitative	Agri-food supply chain/ Italy	Environmental impacts on supply chains	Environmental sustainability, life cycle assessment
(Centobelli et al., 2018)	Environmental sustainability and energy-efficient supply chain management: A review of research trends and proposed guidelines	Energies	Systematic LR	N/A	Environmental sustainability and energy efficiency SCM	SCM, Environmental sustainability, energy efficiency, SSC, innovation, ICTs, vertical and horizontal relationships
(Buhl et al., 2019)	Design thinking for sustainability: Why and how design thinking can foster sustainability-oriented innovation development	Journal of Cleaner Production	Conceptual Framework	N/A	Development of SOI	SC, SOI, internal and external stakeholders, Design Thinking (DT), radical innovation, incremental innovation, risk, Environmental, social and economic sustainability; sustainable development
(Pancino et al., 2019)	Partnering for sustainability in agri-food supply chains: the case of Barilla Sustainable Farming in the Po Valley	Agricultural and Food Economics	Qualitative	Barilla	Partnership and sustainable innovations in food SC	Environmental Sustainability, multi-stakeholder partnership, innovation, agri-food SC, agreements (contracts)
(Melane-Lavado and Álvarez Herranz, 2020)	Cooperation Networks as a Driver of SOI	Sustainability	Quantitative	Spain	Sustainable goals and participation in cooperation networks	SOI, SC, Foreign Direct Investment (FDI), cooperation network, absorptive capacity; Environmental, social and economic sustainability

2.5 Analysis of Key Perspectives: Research Gaps in relation to a Conceptual Framework

The two parts of the present literature review have reviewed prior research in order to explore the undertaken topic with a focus on the phenomenon of SOI in food SC. This research is an attempt to conduct a well-established empirical study in order to capture an in-depth understanding of the food SC of retailers. This will lead to critically examining the phenomenon of SOI holistically. The researcher argues that the scope for the research, SCM is used as a foundational perspective amongst the analyzed theoretical perspectives, the four perspectives (namely network, entrepreneurship, innovation and sustainability), which are incorporated in SCM to examine SOI in the food SC. The empirical work is to be conducted from the perspectives of retailers as CE. Thus, sequenced phases are followed to develop an initial conceptual framework attached to key research questions to guide the data collection and analysis of the present research. These key phases are the identification of high-order themes from the analysis of the four perspectives, exploring key empirical associations from previous research, the identification of specific research gaps to inform the present research questions, and then the construction of an initial conceptual framework for the present research.

2.5.1 Identification of Key perspectives and their High-order Themes

In previous research, there has been disagreements as to which high-order themes should be used by most of the four theoretical perspectives identified to understand SOI in SCM (e.g. Yakovleva and Flynn, 2004; Martindale, 2010; Rueda et al., 2017; Behnam et al., 2018). Furthermore, there has been only limited empirical research on SOI in the food SC that can bring meaningful insights for chain actors and especially the focal actors such as retailers (Omta, 2002; Van Der Vorst, 2006, a, b; 2018; Beske et al., 2014; Aarikka-Stenroos et al., 2014; Luo, et al., 2018).

In Section 2.3, the foundation perspective of SCM was explored and a research gap was identified; there is a need to understand in-depth the phenomenon of SOI in food SC at three levels (actor, dyad and network) from different key perspectives. In section 2.4, key research on the four perspectives (shown in Tables 2.5, 2.7, 2.9, 2.11) was examined as the most relevant theoretical perspectives for SOI in SCM in order to identify specific research gaps and understand the key themes undertaken in the prior empirical and conceptual research. High-order themes are then carefully selected amongst these four perspectives found in prior research. Thus a set of the selected themes are linked to its original perspective (see Sections 2.4.1.2; 2.4.2.2; 2.4.3.2; 2.4.4.2). There was a conceptual overlap between the themes of the four perspectives, which should have been used in integrated empirical research. In fact, there was no conceptual framework that was derived from specific combinations of the high-order themes of the four perspectives, which can be drivers to SOI in food SC. Thus, the current complementary combination constructs a key contribution of the four

perspectives that aids our understanding of the food SC of retailers with SOI as a key phenomenon. This contribution will bring a distinctive insight for analyzing the topic under research and will develop a new conceptual framework for SCM to understand SOI. The following are the high-order themes linked to their key perspectives and supported by relevant sources:

- **Network perspective:** the high-order themes are actor, resources and activities (e.g. Hakansson, 1987; Hakansson and Johanson, 1992; Harland, 1996; Lenney and Easton, 2009; Lusch et al., 2010; Roseira et al., 2010; Miemczyk et al., 2012; De Vargas Mores et al., 2018; Petljak et al., 2018) at the actor, dyad and network levels in the SC.
- **Entrepreneurship perspective:** the high-order themes are corporate entrepreneurship, intrapreneurs, entrepreneurial HR (e.g. Boxall and Purcell, 2008; Bosma et al., 2010; Goffee and Jones, 2007; Medcof and Song, 2013; Baruah and Ward, 2014; Nason et al., 2015; Van Der Sijde et al., 2013; Jay and Gerard, 2015; Gómez-Cedeño et al., 2015; Kuratko, 2017; Luqmani et al., 2017; Li and Holsapple, 2018; Agyabeng-Mensah et al., 2020) at the actor, dyad and network levels in the SC.
- **Innovation perspective:** the high-order themes are product, process and organizational (e.g. Pesonen, 2001; Warren, 2005; Williams, 2006; Hall et al., 2008; Bos-Brouwers, 2010; Martín-Tapia et al., 2010; Klewitz and Hansen, 2014; Beske and Seuring, 2014; Hugos, 2018; Cappellesso and Thomé, 2019) at the actor, dyad and network levels in the SC.
- **Sustainability perspective:** the high-order themes are economic, social and environmental (e.g. Seuring and Müller, 2008; Van Bommel, 2011; Choi and Ng, 2011; Carter and Easton, 2011; Narasimhan and Narayanan, 2013; Ehrenfeld and Hoffman, 2013; Schaltegger and Burritt, 2014; Adams et al., 2016; Esfahbodi et al., 2016; Tasca et al., 2017; Petljak et al., 2018; Neutzling et al., 2018; Buhl et al., 2019) at the actor, dyad and network levels in the SC.

2.5.2 Exploring Key Empirical Associations

Analyzing different empirical research that focused on the applications of the four key perspectives for the SCM, it can be concluded that there is diversity of approaches and findings as to which themes are advanced. This sheds light on the fact that there is a lack of conceptual and empirical research and insights on the phenomenon of SOI in food SC. Thus, this leads to our present research with its focus on SCM as a foundational perspective incorporated with the four perspectives. Prior research can be categorized into the following empirical associations:

- Associations related to the four perspectival themes of network, innovation, entrepreneurship and sustainability in the context SCM (e.g. Christopher and Towill, 2002; Gowen and Tallon, 2003; Bernardes, 2010; Beske and Seuring, 2014; Luzzini et al., 2015; Tasca et al., 2017; Shan et al., 2020). There was an overlap in the perspectival themes, with some studies discussing some of them jointly in the context of SCM without identification of their rooted perspectives. In prior literature, there has been a lack of empirical research on retailers compared to other actors of the SC (Petljak et al., 2018), especially in developing countries (e.g. Neutzling et al., 2018).
- Associations related to the four perspectival themes in the context SOI in SCM (e.g. Klewitz and Hansen, 2014; Jay and Gerard, 2015; Rueda et al., 2017; Behnam et al., 2018; Neutzling et al., 2018; Buhl et al., 2019). There has also been an overlap in the perspectival themes, but they included SOI as one of their themes, which was not highlighted as a key phenomenon. Previous research has not examined the phenomenon in-depth at the three levels of the focal actor, dyad and network, especially in developing countries (e.g. Ayoub et al., 2017). Thus, this research attempts to identify SOI as a key phenomenon in food SC in regard to these high-order themes.

The above empirical associations showed that previous research had examined the perspectival themes for the context of SCM, although this was not in detail. Especially, this was in relation to their association with SOI as it was not presented from a holist approach and the interrelations amongst these high-order themes were subsidiary in the few studies that were found.

2.5.3 Identification of Specific Research Gaps

The purpose of this section is to summarize specific research gaps that shape the enquiry of the present research. These gaps are based on two key aspects. The first aspect, in previous empirical research (e.g. Braziotis et al., 2013; Beske and Seuring, 2014; Luzzini et al., 2015; Tasca et al., 2017; Buhl et al., 2019), the theoretical association between the four perspectives (network, innovation, entrepreneurship and sustainability), SOI and SC performance in food SCM was not established. Furthermore, there were overlaps amongst the high-order themes used by most of the four perspectives to understand SOI in SC (e.g. Yakovleva and Flynn, 2004; Martindale, 2010; Rueda et al., 2017; Behnam et al., 2018; Shan et al., 2020). For example, there were many high-order themes that may have an impact on SOI and an attempt to establish a theoretical link with an individual theme may not have been empirically successful. Furthermore, there has been only

limited empirical research on SOI in the food SC, which can fully include meaningful insights for supply chain members and especially the focal actors (Omta, 2002; Carter and Easton, 2011; Ahi and Searcy, 2013; Beske et al., 2014; Rueda et al., 2017).

In regard the second aspect, in previous methodologies, there was limited research that provided a holistic research designed to analyze SOI in food SCs. The research on SOI in SC was limited to the vertical SC and was not expanded to the focal actor, dyad and network levels to gain more knowledge and insights (Wilhelm, 2011; Bellamy et al., 2014; Pathak et al., 2014). Previous research (e.g. Klewitz and Hansen, 2014; Jay and Gerard, 2015; Neutzling et al., 2018) has called on new researchers to examine the phenomena of SOI linked to SCM from triangulated sources based on well-established sampling strategies. Furthermore, many previous empirical studies (e.g. Revoredo-Giha et al., 2012; Tasca et al., 2017) have conducted their fieldwork in various industries and developed countries; however, there was limited in-depth research on the food industry in developing countries.

Therefore, the present research identifies specific gaps in the undertaken research to be examined. The research provides an attempt to solve these research gaps, which will be used to inform the research questions, conceptual frameworks and thus how the data are collected and analyzed. The following are the key research gaps:

- Limited in-depth conceptual and empirical research on SOI in food SC.
- Limited use of the network perspective on SOI in SCM: the high-order themes of actor, activities and resources linked to SOI at the focal actor, dyad and network levels in the food SC.
- Limited use of the entrepreneurship perspective on SOI in SCM: the high-order themes of corporate entrepreneurship, intrapreneurs and entrepreneurial HR linked to SOI at the focal actor, dyad and network levels in the food SC.
- Limited use of the innovation perspective on SOI in SCM: the high-order themes of product innovation, process innovation and risk taking linked to SOI at the focal actor, dyad and network levels in the food SC.
- Limited use of the sustainability perspective on SOI in SCM: the high-order themes of economic, social and environmental issues linked to SOI at the focal actor, dyad and network levels in the food SC. This is also to understand how SOI is important to form SSCM and in turn enhance sustainability performance.

According to the above discussions, the RQs have been derived (see Chapter 1, Section 1.6.2).

2.5.4 Construction of an Initial Conceptual Framework.

Yin (2003) suggests that when researchers develop research questions and objectives based on existing theories they should build a framework based on those theoretical propositions in order to use as a tool to direct data analysis. Miles et al., (2020) recommend constructing a conceptual framework for clearing and focusing the data collection. This research, therefore, provides an initial conceptual framework in order to examine the enquiry of the research undertaken (Figure 2.17). The theoretical context of this research has been established based on several perspectives: SCM, network, entrepreneurship, innovation and sustainability perspectives. SCM is used as a major theoretical foundation for this research, with the facility to integrate the theoretical perspectives (network, entrepreneurship, innovation and sustainability). The present research aims to contribute to the body of knowledge related to SOI in food SCM supported by the proposed association of these perspectival high-order themes and SOI in food SC. This will be empirically analyzed by demonstrating the empirical insights from the analysis of retailers as innovative entrepreneurs across a food SC. Therefore, key research questions (see Chapter 1, Section 1.6.2) have been produced from the assumption above with a focus on the interrelationships amongst the four perspectives in the SCM perspective.

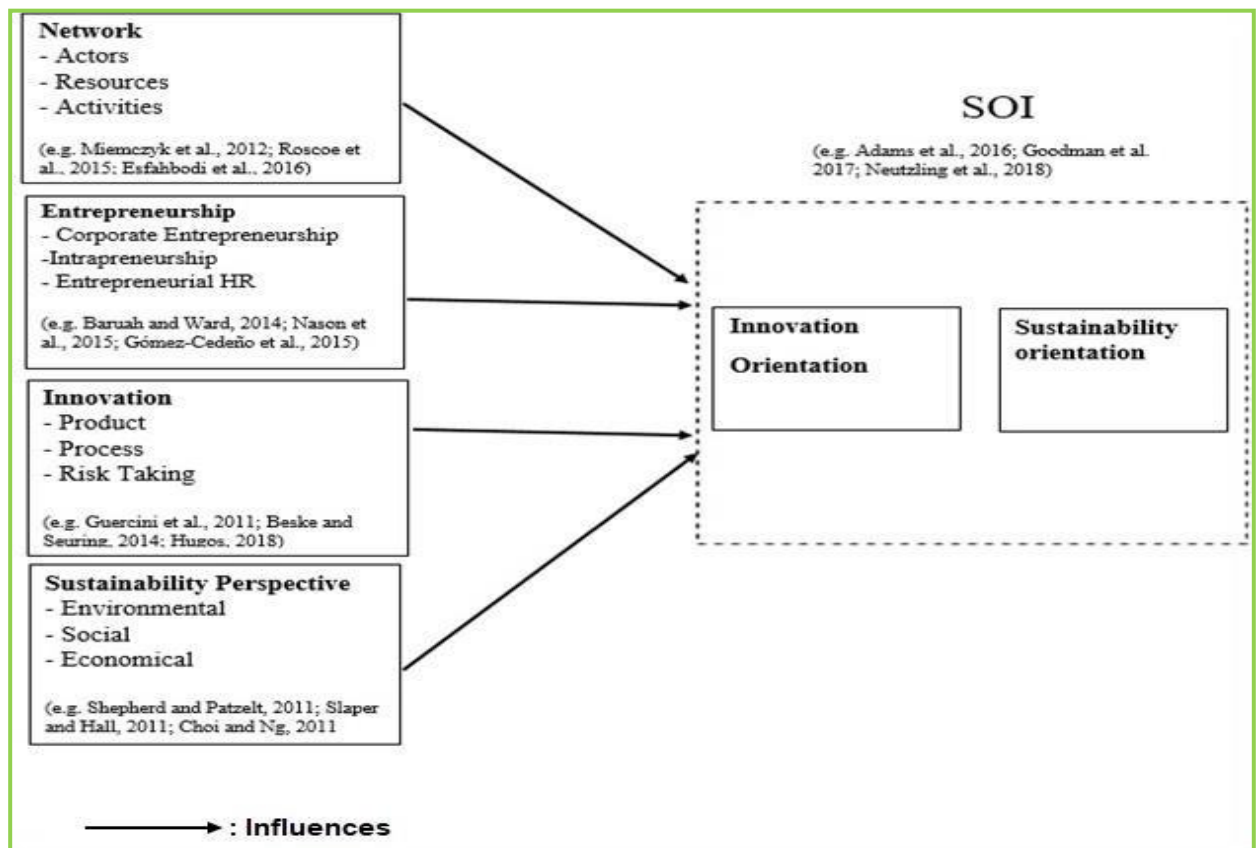


Figure 2.17: An Initial Conceptual Framework for SOI in Food SCM. (Author's own work)

2.6 Conclusion

This chapter has provided a review of the topic and has thus identified research gaps in the body of knowledge related to the research problem. Two key parts, namely the background literature review of SCM and the key theoretical perspectives of network, entrepreneurship, innovation and sustainability, were critically reviewed. The research identifies specific research gaps in our body of knowledge which are increasingly important in the food SC. These research gaps can be described in the form of the research questions in order to focus on the present research and inform data collection and analysis in the next chapters. Therefore, the analysis of the literature review shows there is a lack of research on the phenomenon of SOI in food SCM, which has led the present research to provide an initial conceptual framework as seen in Figure 2.17. This will be used as a data collection and analysis guide linked with the research questions to inform the empirical enquiry of the research undertaken.

The next chapter, Chapter 3, will provide a well-structured methodology to empirically explore and explain the phenomenon and the enquiry of the present research

Chapter Three: Methodology

3.1 Introduction

Research methodology is the procedure used to collect data and information to systematically and logically respond to the research questions and solve the research problem (Eisenhardt, 1989; Bryman and Bell, 2015; Yin, 2018). The research philosophy, approach and methods are addressed and justified in order to accomplish the research objectives, questions and aim.

The aim of this thesis is to critically understand the role of entrepreneurship and HR in supporting Sustainability-Oriented Innovations SOI in SC of food retailers in Jordan. Figure 3.1 illustrates the key concepts of research and how they relate to each other in this methodology (Wilson, 2014). The research philosophy is discussed in **Section 3.2**. The research approach is addressed in **Section 3.3**. In **Section 3.4**, the research methods and strategy are explained, including qualitative methodology and methods, case study strategy and research design. Data collection is discussed in **Section 3.5**. Data analysis is discussed in **Section 3.6**. Triangulation is illustrated in **Section 3.7**. Reliability, validity and trustworthiness are addressed in **Section 3.8** and ethical considerations are explained in **Section 3.9**. A conclusion is provided in **Section 3.10**.

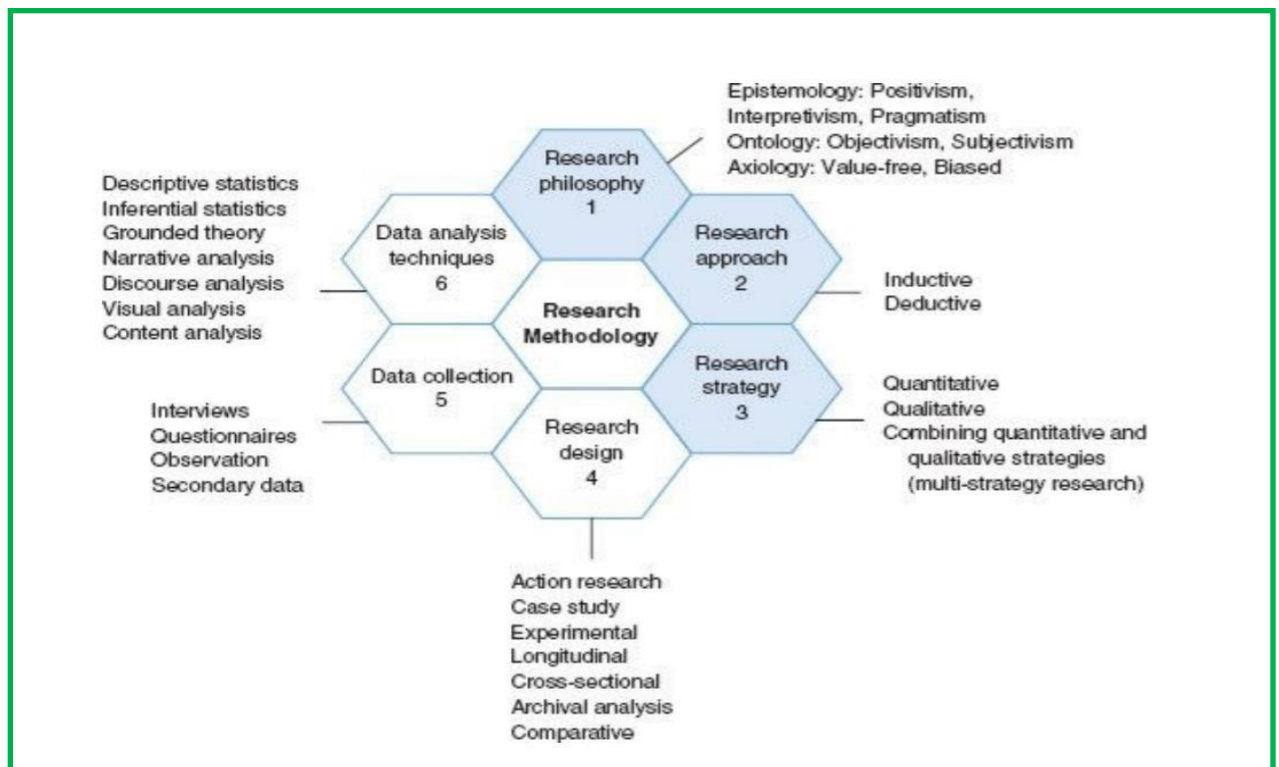


Figure 3.1: Research Methodology- Honeycomb Model (Wilson, 2014, p.672)

3.2 Research Philosophy

The term philosophy presents the development of knowledge and nature of that knowledge in research (Creswell and Poth, 2017). The philosophical paradigm in a research is vital, as it is the *“basic belief system or world view that guides the investigation”* (Guba and Lincoln, 1982, p.105). The growth and understanding of this knowledge is determined by particular assumptions according to our perspective of the world (Guba and Lincoln, 1982; Nowell et al., 2017). Yin (2014) explains that research philosophy is the outline of the stages of data collection, data analysis and conclusions.

There are different types of research philosophy (Table 3.1). Epistemology and ontology are two common types of philosophy used in business and management studies. Interpretivism and positivism are types of epistemology, while constructionism and objectivism are approaches to ontology (Wilson, 2014; Saunders et al., 2019). It is important to first identify the research philosophy in order to select an appropriate research design (Yin, 2014; Saldaña and Omasta, 2016). Researchers apply positivism to represent philosophical conditions that can be separated in research in order to explain unprocessed data collected. More importantly, it is centralized on facts and the world is described as external and objective (Saunders et al., 2012). On the other hand, ontology has two domains of objectivism and constructionism, concerns nature of reality and informs which research design should be applied (Yin, 2014; Saldaña and Omasta, 2016). In research, interpretivism is applied since it is based on a viewpoint that strategy is needed, it respects the differences between the substances of natural sciences and individuals, and therefore requires social scientists to acknowledge the particular significance of social action (Tuli, 2010; Saldaña and Omasta, 2016).

The present research follows interpretivism in order to study a real-world phenomenon in its current context, critically understanding SOI in food SC from the perspective of the retailers. This research involves interactions between people in different real-life situations and different perspectives regarding food SCM. It involves in-depth study in order to provide key conclusions and recommendations based on people behaviors, interactions and beliefs. The phenomenon of SOI in food SC is explored and explained by the researcher while avoiding bias (Yin, 2018). This research follows a qualitative methodology, including an abductive approach (section 3.3) in order to provide new insights and novel contributions or theory.

Table 3.1: Research Philosophies in Business and Management Research (Adapted from: Saunders et al., 2019, p. 144)

Ontology (nature of reality or being)	Epistemology (what constitutes acceptable knowledge)	Axiology (role of values)	Typical methods
Positivism			
Real, external, independent One true reality (universalism) Granular (things) Ordered	Scientific method Observable and measurable facts Law-like generalisations Numbers Causal explanation and prediction as contribution	Value-free research Researcher is detached, neutral and independent of what is researched Researcher maintains objective stance	Typically deductive, highly structured, large samples, measurement, typically quantitative methods of analysis, but a range of data can be analysed
Interpretivism			
Complex, rich Socially constructed through culture and language Multiple meanings, interpretations, realities Flux of processes, experiences, practices	Theories and concepts too simplistic Focus on narratives, stories, perceptions and interpretations New understandings and worldviews as contribution	Value-bound research Researchers are part of what is researched, subjective Researcher interpretations key to contribution Researcher reflexive	Typically inductive. Small samples, in-depth investigations, qualitative methods of analysis, but a range of data can be interpreted

3.3 Research Approach

The establishing of an explicit link between theory and research continues to be a problem for qualitative researchers (Awuzie and McDermott, 2017). The choice of research approaches is vital especially in the structure of a research design, hence it is important to decide which approach to adopt at the primary stage of research, which provides answers to the research questions (Easterby-Smith et al., 2008; Saldaña and Omasta, 2016). Therefore, to link theory and research an abductive approach is considered, which is a mixture of both inductive and deductive (Dubois and Gadde, 2002; Blaikie, 2009; Bryman and Bell, 2015). The abductive approach is “*the reasoning that proceeds from an observation to its possible explanations or better put its most plausible explanations*” (Awuzie and McDermott, 2017, p. 358). An abductive approach is applied in this research, inductive is applied to explore an empirical context to develop theory and deductive is applied partially in order to identify and examine the key themes and initial theoretical links and associations in the literature review (Denzin and Lincoln, 1998; Creswell, 2003; Bryman and Bell, 2015). Lipscomb (2012) stated that for the findings to be regarded as valid and credible from an abductive approach it must be supported by deductive and inductive evidence. Abductive approach is also known as abduction, abductive inference, or retroduction (Coccia, 2018).

Most research applies both induction and deduction since there is an interchange amongst ideas and evidence throughout the stages of research (Dubois and Gadde, 2002; Blaikie, 2009; Grix, 2010). Hence, to overcome the limitations between deductive and inductive approaches an abductive approach is proposed for the present research (Bryman and Bell, 2015). *“Abduction involves the researcher selecting the ‘best’ explanation from competing explanations or interpretations of the data. It highlights the limited ability of researchers to think rationally, in terms of computational reasoning, and acknowledges the importance of cognitive reasoning in theory building”* (Bryman and Bell, 2015, p. 27). Therefore, this requires going back-and-forth between the literature and the social world in the empirical context to gain theoretical concepts (Dubois and Gadde, 2002; Blaikie, 2009; Awuzie and McDermott, 2017). Thus, the suitable approach employed in this research is an abductive approach (Table 3.2) in order to interplay between the literature (i.e. theoretical perspectives of SCM, HRM, network theory, entrepreneurship, innovation and SOI) and the social world in food SCs.

The present research aims to conclude with a conceptual framework and theory building for SOI in food SCM. It is recommended to use inductivism when multi-perspective examination for social context is required (Saldaña and Omasta, 2016). Inductive approach applies interpretivism to explore an empirical context in order to develop a corresponding theory (Creswell, 2003; Tuli, 2010). The inductive method seeks to find implications from observations (Neuman, 1997; Saldaña and Omasta, 2016). The present research needs to understand the meaning people link to events and how they behave and feel toward these events. Accordingly, in this research, the research approach begins with observation of the phenomenon, collecting and analyzing data, examining themes and developing propositions in order to provide a theory (Bryman and Bell, 2015; Saldaña and Omasta, 2016). However, the deductive approach emphasizes developing a hypothesis from current theory and existing theory and providing research strategies; it is carried out from general to specific (Wilson, 2014; Bryman and Bell, 2015). The deduction starts with theory, investigates casual links, and provides generalization (Bryman and Bell, 2015). The present research has less focus on the need to generalize in terms of statistical generalization since the focus is in-depth research; therefore, there is a need to expand theories i.e. analytic generalization (Yin, 2018). Therefore, in this research deductive is applied partially to identify and examine the key themes and initial theoretical links and associations in the literature review (Denzin and Lincoln, 1998; Bryman and Bell, 2015).

Therefore, abductive approach is employed in this research, as a mixture of inductive and some deductive (Denzin and Lincoln, 1998; Bryman and Bell, 2015).

Table 3.2: Research Approach: Deduction, Induction and Abduction (Saunders et al., 2019, p. 153)

	Deduction	Induction	Abduction
Logic	In a deductive inference, when the premises are true, the conclusion must also be true	In an inductive inference, known premises are used to generate untested conclusions	In an abductive inference, known premises are used to generate testable conclusions
Generalisability	Generalising from the general to the specific	Generalising from the specific to the general	Generalising from the interactions between the specific and the general
Use of data	Data collection is used to evaluate propositions or hypotheses related to an existing theory	Data collection is used to explore a phenomenon, identify themes and patterns and create a conceptual framework	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth
Theory	Theory falsification or verification	Theory generation and building	Theory generation or modification; incorporating existing theory where appropriate, to build new theory or modify existing theory

3.4 Research Methods and Strategy

The present research follows qualitative methods and is considered to be interpretivist. This research evaluates socially constructed reality during an interpretation of the phenomenon from the views of participants and builds reality socially and psychologically (Creswell, 2007; Saunders et. al, 2012). Thus, the researcher builds close relationships with participants and ensures to evaluate reality objectively with a distance from the subject to avoid bias (Yilmaz, 2013). However, quantitative research is considered objectivist, since it considers descriptive procedures in social behaviors based on statistical evaluation of static reality (Creswell, 2003; Bryman and Bell, 2015). Quantitative methods provide analysis of dependent and independent factors, measure their relations, and consider the social and psychological phenomena. However, these phenomena should have an objective reality and do not rely on the subjects that are being examined (Neuman, 1997).

Qualitative methods are applied in business and management studies with a focus on context, meaning, interpretation and following from inductive reasoning (Miles and Huberman, 1994; Saunders et. al, 2012). The purpose is to define and understand the phenomenon, SOI in food SC, studied by reaching the participants' experiences in their own words using in-depth studies, interviews and observations (Ritchie et al., 2003). In qualitative research, participants or individuals can clarify how they understand their world and explain their experiences from open-ended questions in interviews (Yilmaz, 2013). Qualitative researchers are able to understand the world from the participants' experiences, hence expanding on theories i.e. reflecting analytic

generalization (Yin, 2018). However, quantitative research is used to achieve a statistical generalizable set of findings, considers deduction that starts with theory and is not able to build on the participants' experiences, feelings and behaviors (Creswell and Poth, 2017). Quantitative researchers select a random and massive sample in order to present their results, which are based on a set of questions and probabilities to achieve a statistical aggregation i.e. statistical generalization (Tuli, 2010; Yin, 2018).

In business and management studies, four research strategies are identified: experiment, action research, survey and case study (Saunders et al., 2012). Experiments consider natural sciences and quantitative comparison to investigate the relations between two variables in research (Creswell and Poth, 2017). Action research examines changes in order to include knowledge from one context to another in research (Yin, 2018). A survey is usually linked to deduction and uses questionnaires to collect data from a random sample for a reason of statistical generalization. Yin (1994, p. 59) defines a case study as an “[...] *empirical inquiry that investigates a contemporary phenomenon within its real-life context and addresses a situation in which the boundaries between phenomenon and context are not clearly evident*”. Hence, in this research, case studies of retailers are conducted in Jordan as a designed strategy for qualitative methods, as discussed in the following section.

Therefore, this present research follows a qualitative method that allows the researchers to examine and evaluate the research issues from the perspective of food retailers in an attempt to understand SOI in food SC. The concept of SOI as a phenomenon of SCM has yet to be empirically evaluated in more detail (e.g. Beske and Seuring, 2014; Adams et al., 2016; Akhavan and Beckmann, 2016; Neutzling et al., 2018). In prior research, there has been little theoretical understanding of how SOI in the food SC can, for instance, offer a potential approach to delivering the required links between innovation orientation and sustainable orientation (e.g. Adams et al., 2016; Shah and Ganji, 2017). In the literature review, there are overlaps amongst the key themes used by most of the theoretical perspectives to understand SOI in SCM, such as network, innovation, entrepreneurship and sustainability (e.g. Yakovleva and Flynn, 2004; Martindale, 2010; Rueda et al., 2017; Behnam et al., 2018). It is important to obtain knowledge associated with the phenomenon to understand the nature of the problem by applying case study strategies of single and/or multiple using techniques of interviews and observations (Patton, 2002; Yin, 2010; Bryman and Bell, 2015). In this research, there was an attempt to provide a conceptual framework associated to the phenomenon.

In the following sections, detailed justifications of this research qualitative methodology including qualitative method, case study strategy and research design are discussed.

3.4.1 Qualitative Methodology and Methods

The present research applies a qualitative methodology in order to provide research methods, qualitative research design and case study strategy for an empirical research context. A number of scholar authors (e.g. Miles and Huberman, 1984; Yin, 1994; Eisenhardt and Graebner, 2007; Saunders et al., 2012; Clarke and Braun, 2013; Wilson, 2014; Miles et al., 2020) are followed to explain this research qualitative methodology and the different aspects related to data collection and analysis and research rigor. This research follows stages of exploratory and explanatory as research methods in order to examine and evaluate the empirical work (Eisenhardt, 1989; Clarke and Braun, 2013; Yin, 2018; Miles et al., 2020). These stages include procedures that focus on the research aim and questions, the unit of analysis, interview techniques, triangulation methods, replication logic, thematic analysis, casual networks and conceptual frameworks. In fact, these stages are carefully established to provide an in-depth and holistic view on this research topic to understand SOI in food SC, from the perspective of the retailers as CE. This research provides an attempt to establish a holistic conceptual framework and managerial recommendations on SOI in food SCM by extending theories and providing key findings.

This present research follows a qualitative method and an abductive approach to study the research topic. The abductive approach is the mixture of both inductive and deductive (section 3.3) (Creswell, 2003; Ritchie et al., 2014).

3.4.2 Case Study Strategy

This research applies a case study strategy. It is defined as the “*analysis of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more methods. The case that is the subject of the inquiry will be an instance of a class of phenomena that provides an analytical frame—an object—within which the study is conducted and which the case illuminates and explicates*” (Thomas, 2011, p. 513). A case study is used to provide an in-depth and holistic understanding of the theoretical and empirical contexts from the exploratory and explanatory stages, concerning key themes from the behaviors, experiences and feelings of the participants (Yin, 2014; Bryman and Bell, 2015). Adopting case studies “*for reasons such as the ability of the case study approach to lead to the development of context-dependent knowledge; and the fact that in the study of human phenomenon, the context-dependent knowledge appears to be the only viable approach, hence rendering epistemic theoretical development ineffective*” (Awuzie and McDermott, 2017, p. 364). In research, case studies can be either single or multiple (Figure 3.2) (Yin, 2003; Yin, 2014).

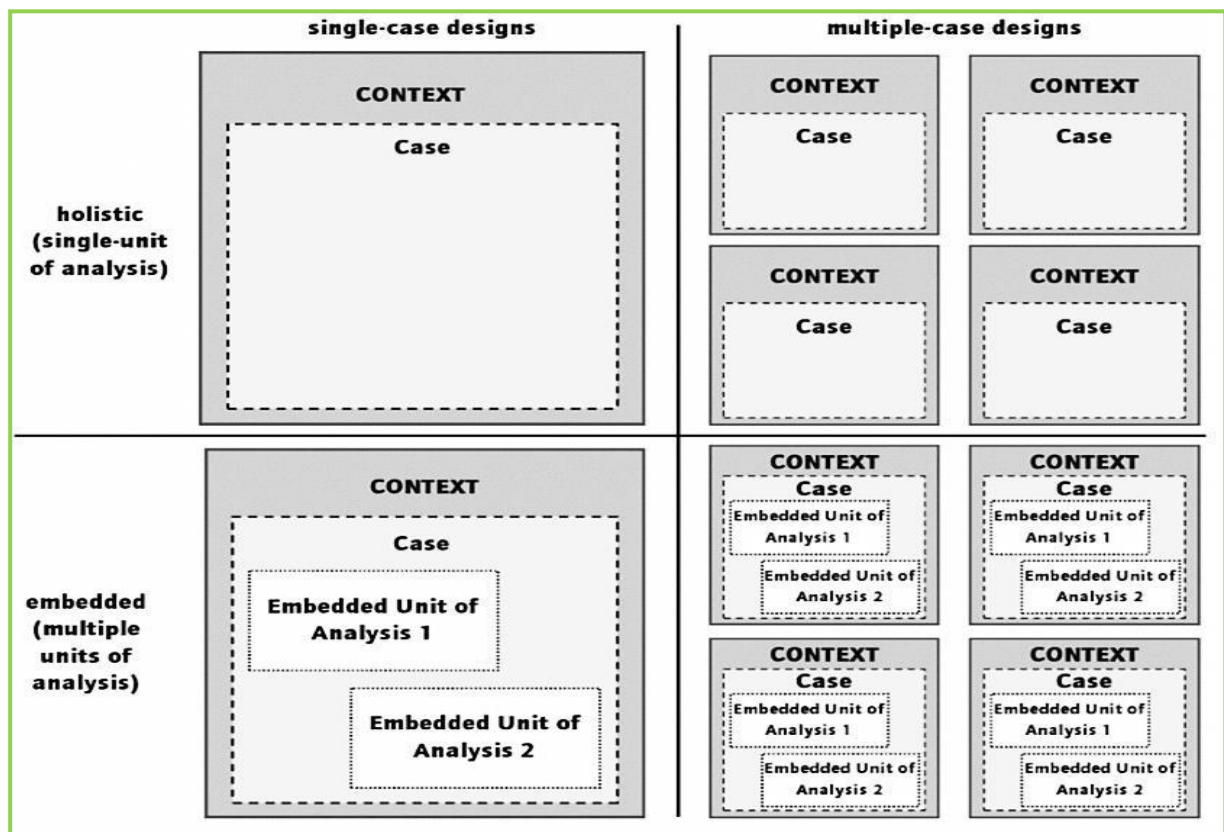


Figure 3.2: Case Study Types (Yin, 2003, p.46)

In research, single cases are applied when the study has a case, which is critical, extreme, longitudinal, typical, unique and based on well-formulated theory (Yin, 2009). Multiple cases are conducted when more findings and in-depth analyses are required for the research topic and both suitable time and resources are available for the research (Saunders et al., 2012). In a multiple-case study, replication logic is followed and propositions are introduced in order to indicate significant findings (Eisenhardt, 1989; Miles, et al., 2020). Conducting multiple case studies compared to single case studies furnishes a stronger foundation for building theory and to guarantee construct validity (Yin, 1994; Yin, 2009; Awuzie and McDermott, 2017). “Using multiple cases to test a range of cross-case propositions assists in boosting the external validity and enhances replicability, both literal and theoretical alike” (Awuzie and McDermott, 2017, p. 364). The appropriate number of cases is four to ten in order to have a suitable research design and holistic views on the topic (Eisenhardt, 1989). Thus, this research uses a multiple-case study as a strategy to study a real-life phenomenon in its context in order to provide holistic views and findings for better research rigor.

In qualitative research, a case study has a set of data types to be collected (Yin, 2018). The first type is exploratory that explains “what” is happening, by undergoing literature reviews and interviews. The second type is descriptive that depends on the development of theory and “how” a phenomenon

takes place. The third type is explanatory that relates to the “why” questions regarding the phenomenon (Yin, 2009) (refer to Chapter 1 for RQs). A suitable unit of analysis is important to be identified based on the research questions (Yin, 2018; Miles et al., 2020). A case study is defined as a holistic case when an organization as a whole is selected as the unit of analysis, however, when an organization requires sub-units of analysis then the case study is defined as an embedded case (Yin, 2014). As the aim of this research is to obtain an in-depth understanding of the role of entrepreneurship and HR in supporting SOI in food SC and provide rich data from a number of SCs of retailers, a multiple-case study is more appropriate for this research (Miles et al., 2020). It will understand empirically the possible associations between the themes: network, entrepreneurship, innovation and sustainability, which is based on examining and evaluating SOI in SCM from the perspective of the retailers as a source of data about their food SCs in a holistic view. Hence, this research includes these types of questions in this qualitative research design to identify key perspectives and their themes from the literature review and refined by expert interviews. Then, the research develops an initial conceptual framework and refines it in order to assist in the description of this research. Finally, this research uses triangulation and replication logic and provides propositions based on multiple cases that are used to explore and examine the phenomenon.

3.4.3 Qualitative Research Design

Research design “*is an action plan for getting from here to there, where here is maybe defined as the initial set of questions to be answered, and there is set of conclusions (answers)*” (Yin, 1994, p. 19). The research design considers the “*research questions, unit of analysis, the initial set of propositions, logic connecting data to propositions and criteria for interpreting the findings, therefore, these are the components of the research design to embody a theory of what is being studied*” (Yin, 1994, p. 20). Hence, the present research has an overall strategy which is the research design, in order to answer the research questions and aim (Saldaña and Omasta, 2016; Yin, 2018). This qualitative research design includes phases as addressed in Figure 3.3.



Figure 3.3: Research Design Phases (Author's own work).

In the literature of SCM there is little evidence of SOI as a phenomenon. It is, however, important to attempt to link the existing evidence with other relevant theories to build an emerging theory or a new theory on SOI in food SCM, from the perspective of the retailers. Therefore, the present research follows a method of analytic generalization, which is based on a prior developed theory to compare the empirical findings of the multiple-case studies conducted (Polit and Beck, 2010; Yin, 2009; Bryman and Bell, 2015; Yin, 2018). Hence, the unit of analysis is the SC of retailers with a focus on the meat SC and dairy SC, specifically beef and yogurt products. Table 3.3 explains this research design phases for a better understanding.

Table 3.3: Research Design Phases (Author's own work).

Phase	Description
Phase 1	The researcher has experience and motivation in the research topic and is interested in understanding SOI in food SC in Jordan. The motivation for this research has been derived from several factors and problems. A majority of the actors of the food SC context are concerned about their innovation and sustainability performance (Adams et al., 2016), thus the researcher is driven to understand SOI in this context. The empirical context has been found to be suitable to the study of retailer SCs (e.g. Trienekens et al., 2003; Shah and Ganji, 2017). The retailers of the food SC consider different strategies, HR, sustainable entrepreneurship, policies, regulations, innovation and business networks in order to enhance their sustainability performance (Beske et al., 2014; Shah and Ganji, 2017). The interest is in Jordan since this country further expands SOI in food SC due to the international and national food retailers' remarkable increase in the last 10 years and challenges they face (MITS, 2018). In Jordan, SC is similar to food retailer SCs in other countries, mainly in developing regions ((MoA, 2017; MITS, 2018). Both beef and yoghurt SCs are chosen, as the two products are highly demanded and are linked to various levels of SOI, which is in need for further improvements. Hence, it is fundamental to examine innovative activities across the SCs, which enhances sustainability performance, and to understand how and why they implement SOI across the food SC.
Phase 2	The literature was critically examined in the identified field of this research, which led to research gaps being identified (Beske and Seuring, 2014; Bellamy et al., 2014; Adams et al., 2016; Neutzling et al., 2018). This was to understand SOI in food SC, from the perspective of the retailers. In the light of the research gaps, research questions were generated in order to find any possible association between perspectives of SCM, SOI, network, entrepreneurship, innovation and sustainability , thus developing an initial conceptual framework associated with these perspectives. RO1 is achieved from the literature review.
Phase 3	To conduct expert interviews in order to refine the initial conceptual framework , which helps to understand the phenomenon and clarify the key themes in the framework (Yin, 2018) SOI in SCM. Data is collected and analyzed at this stage; next, a group of key themes is clarified and associated to refine the initial framework, which is proposed for the multiple-case study. This contributes to refining the initial framework generated from the literature review and to also refine the case study protocol-questions. This provides support for RO1.
Phase 4	To examine and refine the proposed conceptual framework , the multiple-case study is implemented (Bryman and Bell, 2015). This research identifies the case studies are the retailers and the unit of analysis is the SC of retailers including the meat and dairy SCs in the context of the Jordanian food industry. The source of information is from food retailers where primary and secondary data are collected to understand the phenomenon as a whole picture (Saunders et al., 2019). Primary data (e.g. semi-structured interviews as a main source) are collected and analyzed from each individual case based on the key themes and case study protocol. Observations (i.e. participant and non-participant) and secondary data (e.g. documents) are collected and analyzed for each case. Thus, the reason for this stage is to provide a well-structured design for data collection and analysis for the multiple-cases. This phase contributes to answering RQs a,b,c and d.
Phase 5	To present findings for each case study and across the case studies (Eisenhardt 1989; Yin, 2018; Miles et al. (2020). In each individual case, explorations and extracts information related to the research questions and key themes are indicated. A set of themes and sub-themes are produced, new themes emerge, and research quality is enhanced in terms of validity and reliability. In the cross-case study, the qualitative methodology is connected to a new theory; a final conceptual framework is generated by explanations and validating the key themes (SCM, SOI, network, entrepreneurship, innovation and sustainability). A triangulation approach, replication logic, validity, reliability and trustworthiness are followed. This phase contributes to answering RQs a,b,c and d.
Phase 6	Writing up the thesis.

3.5 Data Collection

3.5.1 Research Protocol

The research protocol is a roadmap in multiple-case studies, to collect data while focusing on the research questions and aim (Bryman and bell, 2015; Yin, 2018). This research protocol includes a set of questions and is used in each case (Appendix G). It reflects the research reliability and follows an instrument for this multiple-case study. A case study protocol consists of four stages, which are followed in this research (Figure 3.4) (Yin, 2003):

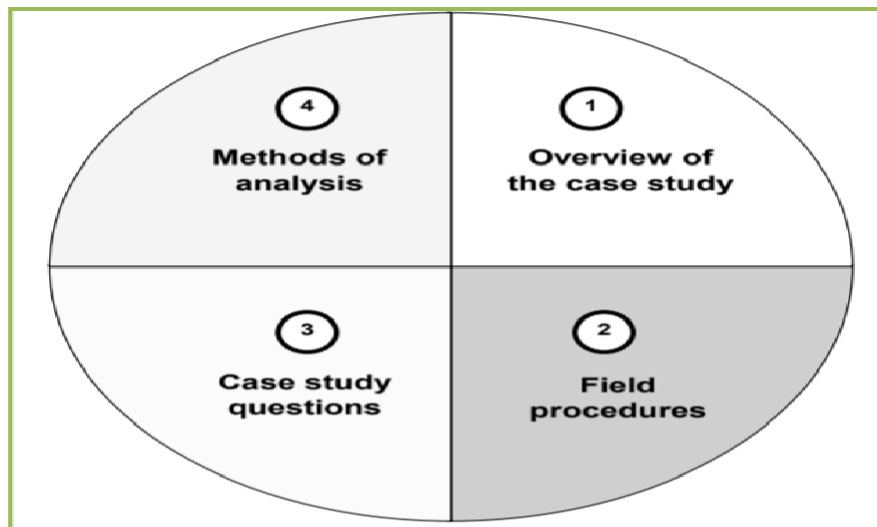


Figure 3.4: Stages of Case Study Protocol (Yin, 2003, p. 69).

Stage 1: An overview of the case study: to shed light on the objective of the cases, questions on the phenomenon (SOI in SCM) related to each case, across cases, interviewees, the whole study, key recommendations and further insights.

Stage 2: Field procedures: fieldwork should be done in natural scenarios and is well designed since the data collected does not consider rigid questionnaires.

Stage 3: Case study questions: to link a set of interview questions with the appropriate research question(s) and objective(s) in order to achieve the research aim of better conclusions.

Stage 4: Methods of analysis: to provide the analysis and report the findings, including the right formats and display for the research findings and extended theory.

Thus, this research protocol includes the agenda (Figure 3.5), an overview of the empirical inquiry and questions to guide the researcher to collect data in order to provide a theory (Yin, 2009).

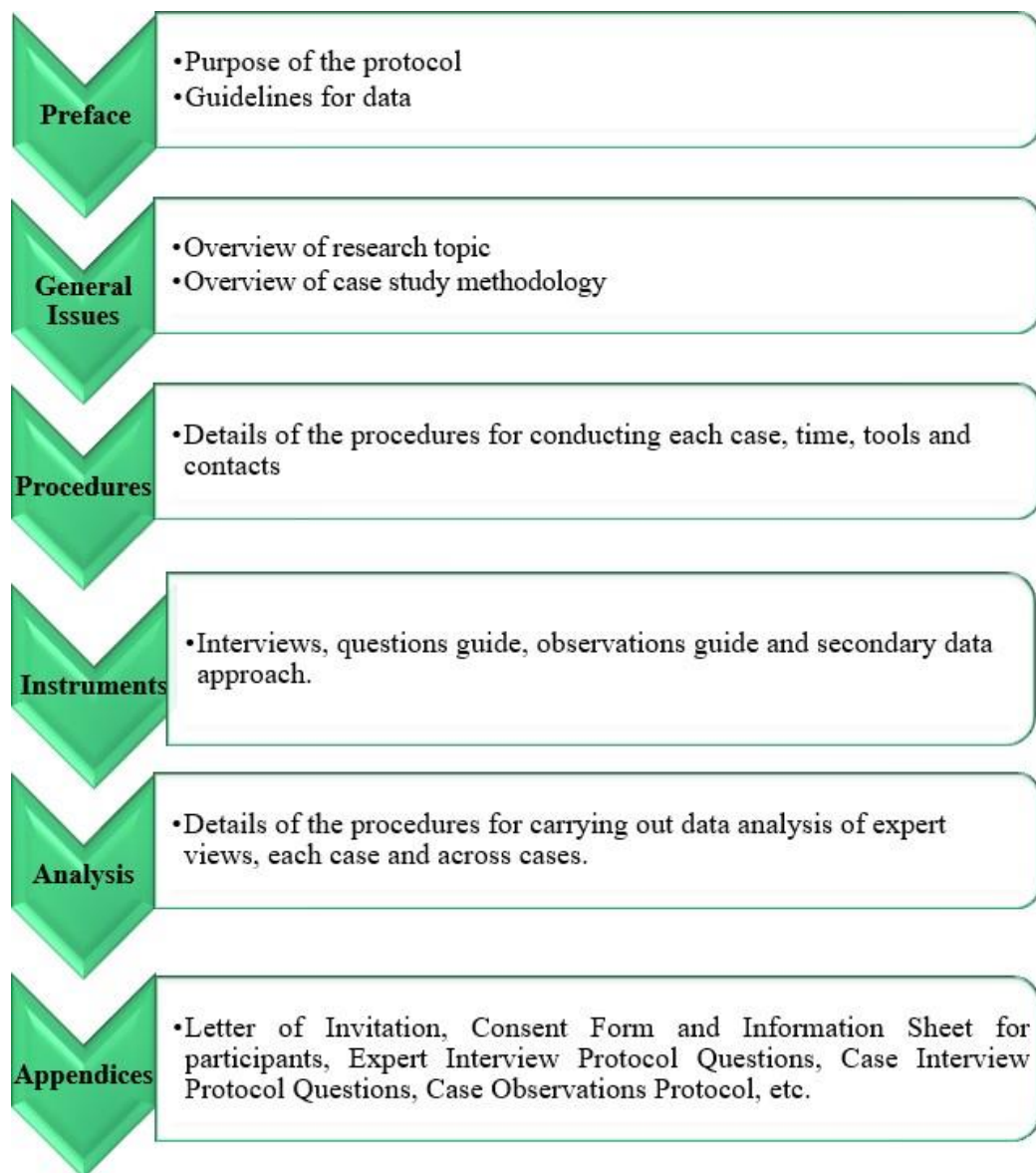


Figure 3.5: Agenda for Case Study Protocol (Author's own work).

3.5.2 Sampling Strategy

In the multiple-case design, the sampling strategy follows literal and theoretical replication (Yin, 1998), where literal replication predicts similar results and theoretical replication predicts different results but for predictable reasons (Yin, 2003). Yin (1998) differentiates between literal replication, where the cases are designed to confirm each other, and theoretical replication, where the cases are designed to cover different theoretical conditions. This research will form analytical generalization based on linking the cases to theoretical propositions (Eisenhardt, 1989; Yin, 2018). The present research underlines the selection of cases as relevance rather than representativeness (Saunders et al., 2012). Sampling continued up until theoretical saturation was reached. Theoretical saturation takes place where “incremental learning is minimal” (Eisenhardt, 1989). The sample population, sample frame, sample techniques, sampling size, time horizon is discussed below.

- *Sample Population and Frame:* The population of medium and large retailers of food SCs in Jordan is approximately 40 (MITS, 2018). The Jordanian food retailing sector has rapidly expanded in the last decades including national and international organizations (MoA, 2018). The large number of these retailers are located in the capital Amman, Jordan, where there are other branches across the country (DoS, 2018). The sampling population of this research is appropriate by selecting six food retailers in Amman; according to Yin (1994), six to ten cases are important to be selected for data saturation and achieving the research aim and questions. The selected cases reflect SCs of retailers including the meat SC and dairy SC as the unit of analysis with established knowledge on this research topic. To evaluate the effectiveness and efficiency of the sampling frame, the frame must be comprehensive by including all of the target population. Food retailers as a data source for their SCs are purposively chosen depending on specific criteria. The research also considers different operating context consisting of the operating domain, geographic location, scale and business model, which are important, dimensions of divergence for retailer SCs (Hofstede, 1991; Amit and Zott, 2001).

The main retailers focused on in this research are three international food retailers and three local food retailers (Table 3.4) because they are believed to be mature in SCM and sustainability. The Jordanian Ministry of Agriculture and Ministry of Industry, Trade and Supply have directed the researcher to an applicable sample pool regarding food retailers working together with the government bodies to implement sustainable initiatives and entrepreneurial practices.

The following criteria were applied for selecting the food retailers:

- a- food retailers that have an established sustainability strategy, aiming for strategically planning sustainable initiatives for the long run;
- b- food retailers that have an established innovation strategy aiming for sustainability, making SOI in SC possible;
- c- food retailers that have implemented entrepreneurial practices and have mature HR;
- d- food retailers that have localized SC operations in Jordan, aiming for sustainable SC;
- e- food retailers that have implemented sustainable initiatives at actor, dyad and/or network level; and
- f- food retailers operating for longer than 10 years.

In total, thirteen food retailers met the above criteria and were approached. An invitation letter and information form explaining the purpose of the research were sent, nine of which agreed to participate. Six food retailers were chosen due to geographic location as well as international and local food retailers to show comprehensiveness in case selection. Hence, three international food retailers and three local food retailers were chosen (Table 3.4).

Table 3.4: Food Retailers focused on in this Research (Author's own work).

Retailer Name	Ownership	Number of Branches	Location
Retailer 1	International	Multi branches	Amman and other governorates
Retailer 2	International	Multi branches	Amman and other governorates
Retailer 3	International	Single branch	Amman
Retailer 4	Local	Multi branches	Amman
Retailer 5	Local	Multi branches	Amman and other governorates
Retailer 6	Local	Single branch	Amman

Some examples of the food retailers' interest and their implementation of sustainability are: energy consumption (fuel and electricity) in the store, free disposable plastic bags distributed at the check-out, paper consumption for commercial publications, greenhouse emissions linked to the consumption of fuel, managing their water usage, raising customer awareness of the need to adopt a well-balanced diet by a wide variety of in-store operations, reducing carbon footprint, reducing and recycling waste, and supporting suppliers in the long-run.

- *Sampling Techniques:* This is a critical part of the whole sampling strategy (Eisenhardt, 1989). Probability sampling and non-probability sampling are two sampling types in research (Bryman and Bell, 2015). Probability sampling indicates that each case has an equal chance from a known population and is connected with a quantitative strategy. Non-probability sampling is linked to the unknown total population frame and is associated with qualitative strategy. Thus, the present research follows non-probability sampling for the undertaken topic. In qualitative research, there are a number of sampling techniques: purposive, snowball, self-selection, convenience and quota (Saunders et al., 2012; Patton, 2015). A purposive sampling strategy is used, with cases intentionally selected for their ability to expose significant information about the phenomenon and the research enquiry (Eisenhardt, 1989; Yin, 2003). A snowball sampling strategy is where the current participant recruits future participants from their colleagues; hence, the sample grows like a 'rolling snowball' (Yin, 2018). A self-selection sampling strategy is based on the researcher's judgement (Eisenhardt, 1989; Yin, 2014). Sampling is applied for the selection of cases, expert interviews, case study interviews, observations and documents. First, purposive

sampling is followed to select a sample of the cases in Jordanian food retailing industry. Second, the research follows purposive sampling to select a sample of participants for the expert interviews. The research follows snowball sampling to select a sample of participants for the first case study interviews, which are based on the criteria supporting the sampling frame (Patton, 2015); for the five other cases, the research follows purposive sampling for the reason of triangulation and replication. Third, the research follows purposive sampling to select a sample of meetings and tours for observations. The techniques used for observations are based on a pre-prepared template as a case observation protocol (Appendix H), developing field notes and building trust (Creswell and Poth, 2017). Fourth, archival records and documents are selected based on self-selection and purposive sampling from the materials and websites to gain understanding of the phenomenon occurs.

- *Sampling size:* qualitative research requires a smaller sample compared to quantitative research (Ritchie et al., 2003). Qualitative research is based on meaning and quality information and not providing statistical generalization (Crouch and McKenzie, 2006). Consequently, analyzing a great sample would require a lot of time and be impractical, hence qualitative research is labor intensive (Crouch and McKenzie, 2006). A potential sample size is identified based on a set of factors (Ritchie et al., 2003, p. 177): “*the heterogeneity of the population; the number of selection criteria; the extent to which 'nesting' of criteria is needed; groups of special interest that require intensive study; multiple samples within one study; types of data collection methods use; and the budget and resources available*”. In the present research, the sample size is identified as six cases in order to have high response rates and replication from the retailers of food SCs. According to Eisenhardt (1989, p.545), “*a number between 4 and 10 cases usually works well in order to generate and expand theory.*” Saunders et al., (2012) recommend having from 5 to 30 interviews in a qualitative case study. Miles et al. (2020) recommend a number of observations and documents based on the number of cases and situations and rely on the judgement of the researcher. The six case studies are divided into six food retailers in Jordan, and in each case five semi-structured interviews are conducted, giving a total of 30 interviews. Three observations are conducted for each case, giving a total of 18 observations including tours, in addition, secondary data of archival records and documents are identified for each case study.
- *Research Time Horizon:* Research design is linked to the research questions of an empirical study that is important to identify how and when the research will be carried out (Miles et

al., 2020). Both cross-sectional and longitudinal studies are types of research approaches in exploratory research (Saunders et al., 2012). Cross-sectional studies compare different population groups at a single point in time and then draws findings from different themes to be fitted into the research frame; on the other hand, in longitudinal studies, samples stay the same over a period of time and takes longer time to be completed (Miles et al., 2020). A cross-sectional study can be single or multiple samples (Saunders et al., 2012). Hence, this present research consists of a single cross-sectional study, since only one sample from the target population is being studied (Eisenhardt, 1989; Ritchie et al., 2003).

3.5.3 Data Collection Strategy

The present research applies both types of data: primary and secondary data. In research, secondary data is information that has been collected and analyzed by others for different reasons other than the current research (Bryman and Bell, 2015). This information could be quantitative or qualitative types and in either soft or hard copies e.g. archival records: organizational records, public files and service records, and documents: formal studies, written reports, news, evaluation and past projects and surveys, including multiple sources such as websites, hard copies, and published materials (Saunders et al., 2012; Ritchie et al., 2014; Bryman and Bell, 2015). Archival records and documentations are considered as sources of evidence for case studies and for triangulation reason (Yin, 2018). Both sources are applied in this research to triangulate the findings from the primary data of interviews and observations.

Primary data is new information gathered especially for the purpose of a present research in order to achieve the research aim (Bryman and Bell, 2015). Methods of primary data vary based on the research aim and questions. Interviews, survey questionnaires, observations, focus groups and other methods are available to collect primary data. In the present research, interviews and observations are the techniques or methods followed by the researcher. Interviews are a major method to collect data from participants in order to answer key enquires in the examined topic (Yin, 2018). On the other hand, observations deal with actions in real time and its purpose is to explore how participants and people act in real situations (Yin, 2009). It is also important to know that observations can be absent or active and used to support the interviews (Saunders et al., 2019). In addition, observation can be selective, time consuming and the researcher's role might create bias (Ritchie et al., 2014). There are three types of interviews: structured, semi-structured and in-depth interviews, which are applied in qualitative research (Yin, 2018). Structured interviews are common in a survey strategy and limit the researcher's ability to generate in-depth data from a case research (Yin, 2018). In-

depth interviews or unstructured are designed without pre-identified questions and thus will produce data ambiguity and will have non-directive style (Saunders et al., 2019). The current research uses semi-structured interviews in order to explore the phenomenon of SOI in SCM generating a new theory expanded on the combined theoretical perspectives and to explain possible associations between themes. Semi-structured interviews as a main source of data in case studies will help to obtain relevant data and close research gaps (e.g. Martindale, 2010; Wilhelm, et al, 2016; Rueda et al., 2017; Behnam et al., 2018; Neutzling, et al., 2018). Observations are also used to reflect a triangulation method for these interviews (Ritchie et al., 2014).

This research follows a successful primary data collection, which is conducted in the context of food supply chain of retailers in Jordan: expert interviews, case study interviews, observations and archival records and documents, as illustrated in the following timeline (Figure 3.6). An invitation letter, participant information form and a consent form for retailers and participants (Appendix B, C, D and E) are sent via email to the retailers' management. By means of a phone call, each retailer is introduced to the research and given a chance to ask for further information. The retailers must sign the consent form before beginning the research. The retailers participating in the research will be confidential; their names will be number coded to ensure anonymity and safety. After approval from the retailers, the researcher conducts the empirical study via face-to-face method.

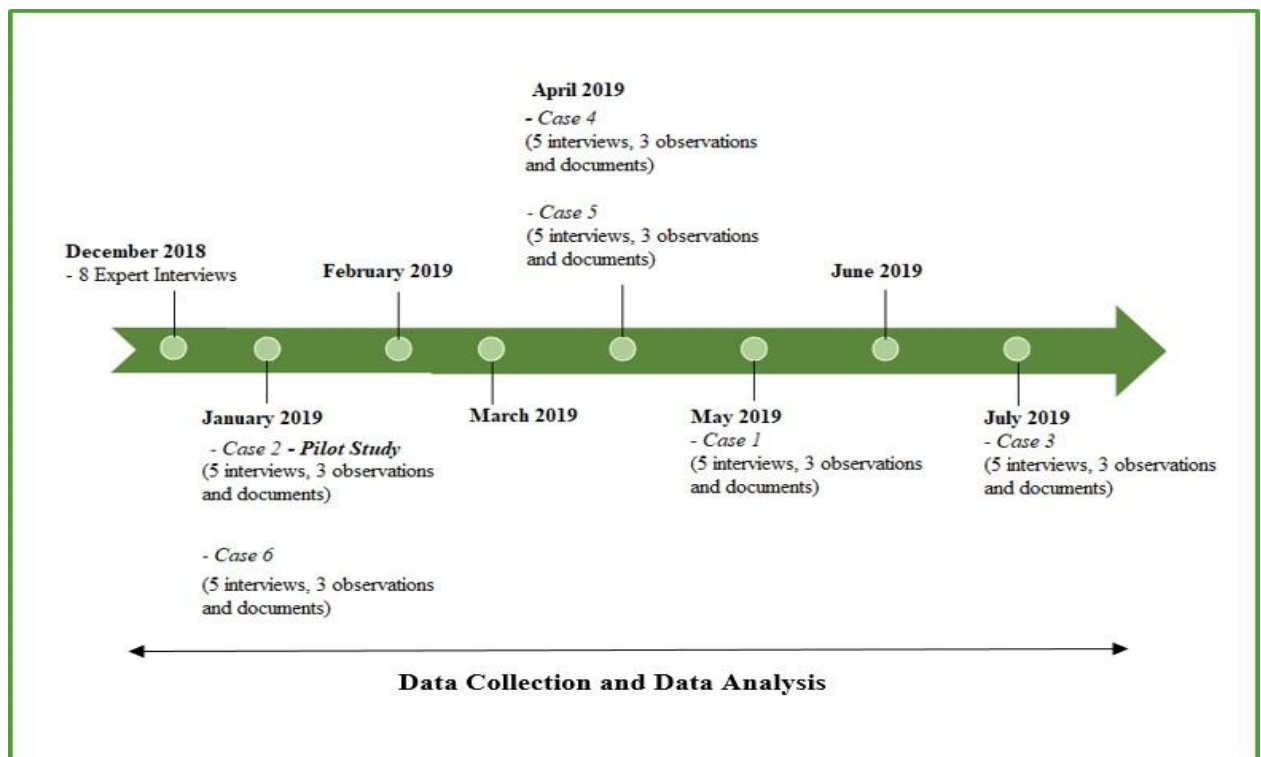


Figure 3.6: Timeline-Data Collection (Author's own work).

In this research, various sources of data are used, hence enhancing the quality of the data and findings for better research rigor (Yin, 2018). Therefore, different types of triangulation are applied, including data, theory and methodological triangulation in qualitative research (see Table 3.9) (Yin, 1994; Patton, 2002; Yin, 2010; Miles et al., 2014). Hence, this research applies data triangulation by using multiple data sources. First, expert interviews and multiple-case studies are conducted in this research. Second, primary (semi-structures interviews and observations) and secondary data (documents) are collected in each case study. Semi-structures interviews are conducted with different types of managers within national and international retailers, including meat and dairy SCs. Observations are conducted with different levels of focal actor (retailer), dyad (direct business relationship) and network (indirect relationship), including a meeting combined with a tour at each level. A set of archival records, including websites information, market reports and other secondary sources are conducted at each case study.

3.5.3.1 Expert Interviews

Expert interviews are an exploratory stage to refine our initial thought on the topic and also conducted to refine the case study protocol- questions (Bryman and Bell, 2015; Yin, 2018). Face-to-face semi-structured interviews are applied in this research with eight experts, six HR managers from the six food retailers of the six cases in Jordan and two academic researchers in the field of food SC. The two academic researchers have knowledge of the phenomenon and research experience in the empirical context leading to better validation from the academic perspective. The semi-structured interviews are based on an expert interview protocol-questions (Appendix F), which consists of open-ended questions to guide the researcher. The result of this expert interview helps the researcher to explore and refine the key themes in the initial conceptual framework (Figure 2.17).

The experts are selected based on purposive sampling (Patton, 2015). With regards to the aims of this research, the experts' experience in food SCM, their aptitude to discuss SOI in food SC and their availability to participate in the empirical inquiries. HR managers were selected as suggested by Khan et al. (2013) that HR and SCM play an important part in creating value in the SC. The academic researchers are selected based on their availability to participate, their experience in food SC and previous empirical work conducted on SOI in food SC in developing countries. Expert interviews were conducted in 2018 (Table 3.5).

Expert contact details were identified. After identifying the interviewees, the following steps were conducted: A) a letter of invitation, participant information form and a consent form (Appendix B, C and D) are sent via email. B) By means of a phone call, each expert is introduced to the research and given a chance to ask for further information. C) When they agree to participate in the interview

a date, time, duration, and location is arranged. D) Before the interview begins the consent form must be signed. E) Each interview of roughly 40-60 minutes is voice recorded and later transcribed (translated if needed from Arabic to English) by the researcher. Some translation was needed from the Arabic language to English language, which was conducted by the researcher whom is bilingual in both languages. It is important to maintain the meaning, significance and integrity of the audio during translation (Bailey, 2008). Throughout the interviews, prompting and probing are applied to clarify specific points and nudge the interviewees if they did not understand a question (Yin, 2018). F) In return, each transcript is sent via email to the expert to validate the content. G) The participants are confidential; their names are number coded. The recordings, scripts and written work are encrypted and saved in a password-protected folder on the researchers' personal networked drive at the researchers' institution on a password protected PC to ensure anonymity and safety; any hard documents are saved in a locked cabinet in a safe place.

Table 3.5: Expert Interviewees (Author's own work).

No.	Location	Interviewee Position	Type of Food Chain
1	UK	Academic Researcher	Meat SC
2	Retailer 1	HR Manager	Meat and Dairy SCs
3	Retailer 2	HR Manager	Meat and Dairy SCs
4	Retailer 3	HR Manager	Meat and Dairy SCs
5	Jordan	Academic Researcher	Meat and Dairy SCs
6	Retailer 4	HR Manager	Meat and Dairy SCs
7	Retailer 5	HR Manager	Meat and Dairy SCs
8	Retailer 6	HR Manager	Meat and Dairy SCs

In this research, the initial conceptual framework works as a guiding process for data collection and analysis in order to provide meaningful findings. This process will then clarify this initial framework, proposing a conceptual framework to be explored and explained in the multiple-case studies. Hence, the research has analyzed the literature for theoretical underpinning in Chapter 2 and then expert interviews are empirically conducted to refine the initial conceptual framework, which will contribute to answering RO1. Expert interviews are to provide better identification of the initial themes, better definition of them and refine the possible association among these themes.

3.5.3.2 Case Study Interviews

In this research, each case is a retailer of SC in the Jordanian food industry. This research has six case studies and five interviews for each case study, giving a total of 30 interviews, which are appropriate to pursue literal and theoretical replications (Eisenhardt, 1989, Yin 1994; Creswell and Poth, 2017; Miles et al., 2020). The case study interviews were conducted in 2019.

The cases are food retailers, and all have sustainability, SOI, business relationships and networks, entrepreneurial roles and innovations. The cases represent replication logic and are wide-ranging based on differentiating criteria such as years of experience, network level (actor, dyad, network), entrepreneurial type (e.g. intrapreneur, entrepreneur, both), innovative technology type, food SC type (meat and dairy) and business level (national and international). The data collection is based on multiple levels that reflect the triangulation technique (Yin, 2010). This is where the unit of analysis is the SC of retailers, including meat and dairy SCs, and the source of information: retailers (as innovative entrepreneurs). Data are collected from different level of management and at SC levels: focal actor (retailers), dyad (direct relationships) and network (indirect relationships) (see section 3.5.3.3). Data are also collected with a focus on the phenomenon SOI in food SCM from themes: network, entrepreneurship, innovation and sustainability. Table 3.6 represents the types of the cases and the interviewees. The choice of cases is based on purposive sampling and the semi-structured interviews are based on snowball and purposive sampling. First, snowball sampling is followed in the pilot case where the researcher threw the first snowball at the HR expert who then recommended managers in this case, case study 2* (Glesne and Peshkin; 1992; Neuman, 2009; Yin, 2014; Patton, 2015). Then after having successful findings from the identified managers in case 2, the purposive sampling is followed in the other cases to reach the same type of managers with the support of their HR experts. These managers are FFM: Fresh Food Manager, PDM: Product Development Manager, SCMr: Supply Chain Manager, HSS: Head of Sustainable Sourcing and HSM: Hygiene and Safety Manager.

Table 3.6: Case Studies and Interviews (Author's own work).

Case no.	Case Study (retailers)	Unit of Analysis	Product of Analysis	Number of Interviews	Interviewee (Source of Data)
1	Retailer 1 (R1)	SC of Retailer	Meat and Dairy SCs (Beef and Yoghurt)	5	FFM1; PDM1; SCMr1; HSS1; HSM1
2*	Retailer 2 (R2)	SC of Retailer	Meat and Dairy SCs (Beef and Yoghurt)	5	FFM2; PDM2; SCMr2; HSS2; HSM2
3	Retailer 3 (R3)	SC of Retailer	Meat and Dairy SCs (Beef and Yoghurt)	5	FFM3; PDM3; SCMr3; HSS3; HSM3
4	Retailer 4 (R4)	SC of Retailer	Meat and Dairy SCs (Beef and Yoghurt)	5	FFM4; PDM4; SCMr4; HSS4; HSM4
5	Retailer 5 (R5)	SC of Retailer	Meat and Dairy SCs (Beef and Yoghurt)	5	FFM5; PDM5; SCMr5; HSS5; HSM5
6	Retailer 6 (R6)	SC of Retailer	Meat and Dairy SCs (Beef and Yoghurt)	5	FFM6; PDM6; SCMr6; HSS6; HSM6

***The case studies are not ordered by date conducted, as they were conducted based on availability.*

The selection of interviewees is based on the relevance of managers and their information to achieve research questions and objectives (Flick, 2009, Yin, 2018). The selected managers are specialized in food SCs and familiar with local and international standards and regulations. They are also involved in innovative and sustainability activities and projects and are engaged in developing and implementing SOI at their retailers. They are also linked to SOI collaboration with other actors along their food SCs and have good understanding of entrepreneurship. The selected managers were recommended by their HR as the most related people to the research topic. Hence, in the present research in order to collect primary data from the interviewees, face-to-face semi-structured interviews are conducted. The interview consists of open-ended questions to guide the researcher; this is based on the case interview protocol-questions (Appendix G).

An overview of the case study protocol is provided to illustrate the empirical inquiry (Figure 3.7).

Information on Interviewees	•Collecting data about the interviewees
Information on Retailers	•Collecting data about the retailers
Case study	•Retailers: source of data: retailers; unit of analysis: supply chain of retailers.
Theme Type 1: Network	•This includes actors, resources and activities. This will contribute in answering RQa.
Theme Type 2: Entrepreneurship	•This includes corporate entrepreneurship, intrapreneurship and entrepreneurial HR. This will contribute in answering RQb & RQc.
Theme Type 3: Innovation	•This includes includes product, process and organizational innovation. This will contribute in answering RQc.
Theme Type 4: Sustainability	•This includes enviornmental, social and economical domains. This will contribute in answering RQd.

Figure 3.7: An overview of the Case Protocol- the empirical inquiry of the case (Author's own work).

Case study interviews were conducted in 2019. Contact details of the managers were identified. After identifying the interviewees, the same steps (A-G) were followed as the Expert Interviews as discussed in section 3.5.3.1.

The multiple case strategy is conducted to understand similarities and differences in the high-order themes of SOI in food SCM (Yin, 2010). This is to explore and explain their links to innovation and in turn to sustainability performance. The main purpose of the key themes of the proposed conceptual framework is to help the researcher collect and analyze data in each case study.

3.5.3.3 Observations

Observation is a data collection method for examining people in a natural situation (Creswell, 2003). The field notes of observations would involve prolonged communications in social situations, expresses the notations observed and obtain the tape recordings (Creswell and Poth, 2017). Since the researcher focused on open-ended questions which were recorded for data collection, observations were also conducted in order to understand and explain the behavior of people in their natural settings (Miles and Huberman, 1994; Patton, 2002). Hence, the researcher studied the phenomenon in its natural setting, where the researcher was a non-participant observer who would observe body behavior and, at times, the researcher was a participant observer who would participate with the participants, i.e. meetings and tours (Patton, 2002; Creswell and Poth, 2017). The observations capture the retailers' innovation and sustainability processes at the retailers and other SC members.

Observations on the food retailers were conducted in 2019 and followed a case observation protocol (Appendix H). This contributed to further information, which complements the interviews as a triangulation tool (Yin, 2003). The researcher undertook three types of observations for each case, which lasted 60 to 90 minutes for each type (Table 3.7). Observations were conducted at all six retailers, including meetings and tours at the actor level (the retailer), the dyad level (retailers with a direct relationship) and the network level (retailers with an indirect relationship). These actors were chosen to be observed to better represent the food SC, creating multiple sources of evidence (Yin, 2018). The researcher undertook participant observation at the actor level, since the researcher had already gained some trust of the participants from the interviews. The other observations were conducted as a non-participant observer at the dyad and network levels, to gain better understanding of the situation in which the phenomenon occurs and their procedures.

Table 3.7: Observations of Case Studies (Author's own work).

Case Study no.	Case Study (Retailer)	Type of Observation	Location of Observation	Whom/What was Observed
1	Retailer 1 (R1)	Participant observer	R1	<i>Actor</i> - Attended a meeting at the Retailer combined with a tour.
		Non-participant observer	Slaughterhouse	<i>Dyad</i> - Attended a meeting at slaughterhouse and a tour with the retailers' representative
		Non-participant observer	Beef Distributor	<i>Network</i> - Attended a meeting with the beef distributor and a tour with the retailers' representative.
2	Retailer 2 (R2)	Participant observer	R2	<i>Actor</i> - Attended a meeting at the Retailer combined with a tour.
		Non-participant observer	Slaughterhouse	<i>Dyad</i> - Attended a meeting at the slaughterhouse and a tour with the retailers' representative.
		Non-participant observer	Beef Packaging	<i>Network</i> - Attended a meeting with the beef packaging and a tour with the retailers' representative.
3	Retailer 3 (R3)	Participant observer	R3	<i>Actor</i> - Attended a meeting at the Retailer combined with a tour.
		Non-participant observer	Slaughterhouse	<i>Dyad</i> - Attended a meeting at slaughterhouse and a tour with the retailers' representative.
		Non-participant observer	Government Body (for Beef)	<i>Network</i> - Attended a meeting with the government body and a tour with the retailers' representative.
4	Retailer 4 (R4)	Participant observer	R4	<i>Actor</i> - Attended a meeting at the Retailer combined with a tour.
		Non-participant observer	Yoghurt industry	<i>Dyad</i> - Attended a meeting at the yoghurt industry and a tour with the retailers' representative.
		Non-participant observer	Yoghurt Distributor	<i>Network</i> - Attended a meeting with the yoghurt distributor and a tour with the retailers' representative.
5	Retailer 5 (R5)	Participant observer	R5	<i>Actor</i> - Attended a meeting at the Retailer combined with a tour.
		Non-participant observer	Yoghurt Industry	<i>Dyad</i> - Attended a meeting at the yoghurt industry and a tour with the retailers' representative.
		Non-participant observer	Government Body (for Yoghurt)	<i>Network</i> - Attended a meeting with the government body and a tour with the retailers' representative.
6	Retailer 6 (R6)	Participant observer	R6	<i>Actor</i> - Attended a meeting at the Retailer combined with a tour.
		Non-participant observer	Yoghurt Industry	<i>Dyad</i> - Attended a meeting at the yoghurt industry and a tour with the retailers' representative.
		Non-participant observer	Yoghurt Packaging	<i>Network</i> - Attended a meeting with the yoghurt packaging and a tour with the retailers' representative.

The research followed four stages for observations: preparing, collecting, analyzing, and writing up the observations (Yin, 2003; Palsson, 2007). First, the preparing stage: the researcher gains ethical consent to observe the participants in their environment, introduces the purpose of the study and gains the trust of the participants. Second, the collecting stage: the researcher begins to observe the participants, but needs to schedule the observations strategically, not to overlook details, and establish trust (Palsson, 2007). Field notes are jotted down as reminders for writing up directly after the observation is over (Atkinson et al., 2001). The researcher needs to take into consideration challenges with the observations, such as handling data, the time gap between the occurrence of an event and recording all the notes, and the time gap between collecting data and writing up (Jackson, 1983; Palsson, 2007). Third, the analyzing stage: reading and becoming familiar with the data to explore themes and identify patterns and relationships, in line with the theoretical perspectives, themes and contextual factors identified from the case study interviews. Finally, the writing stage: writing up the results. The data from the observations during data collection were used to triangulate the primary data in order to validate the findings. Replication logic is followed to investigate the multiple cases of observations for each retailer (Eisenhardt, 1989; Yin, 2018).

According to prior research observing different actors across the SC is beneficial to gain in-depth understanding of their relationships at the actor, dyad and network levels (Harland, 1996; Braziotis et al., 2013; Aarikka-Stenroos et al., 2014). The slaughterhouse, beef distributor, beef packaging, government body (for beef), yoghurt industry, yoghurt distributor, yoghurt packaging, government body (for yoghurt) were chosen since they have had long relationships, share similar concepts of the phenomenon under study, and they are the key actors with the retailers for joint activities (Roth et al., 2008; MITS, 2018).

3.5.3.4 Secondary Data: Archival Records and Documents

The present research collected available archival records and documents in each case study. This contributed to collecting more information, which supports the interviews and observations in order to achieve the research aim and questions. The selection of these documents and archival records is based on meanings, credibility and clarity. Archival records of retailer records, published files and studies, service records, meeting minutes, market reports, types of innovative services and products, HR job descriptions, descriptions of stakeholders, demographic details, and project surveys are identified from the websites for retailers, available hard and soft copies made available by the retailers. Documents of formal studies, news, past projects and surveys are found from international and government websites for sustainability projects and reports. Multiple sources are followed, such

as publications, Amman Chamber of Industry, Jordanian Drug and Food Association, Jordan Department of Statistics, Ministry of Agriculture, Ministry of Industry and Trade, and Jordan Investment Commission. In addition, past surveys are used from Jordan National Census and Jordan Response Plan. Hence, from the data collected, the information chosen was in line with the theoretical perspectives, themes and contextual factors identified from the case study interviews. The secondary data enriches the researchers' understanding in this research describing innovative activities that actors use across the SC to enhance sustainability.

3.5.3.5 Pilot Case Study

The purpose of conducting a pilot case study is to examine the feasibility of the methods chosen in order to provide viable data, to discover any limitations in the case study interview questions, as well as to recognize any inconsistencies before commencing the main research. The pilot study facilitates in rephrasing some of the interview questions, recognizing when probing and prompting are essential to assure quality and depth of the data and it helped in determining the approximate time needed for the actual interviews. It broadens an array of data source and allows the researcher to engage in data to consider correct directions in searching data and asking questions (Yin, 2018).

The pilot case study is R2 in case study 2. This retailer is chosen from the six cases to start with based on the criteria identified in the research design and it is the first available case that signed the consent form and gave access to the researcher to conduct five interviews, three observations and collect archival records in January 2019. The procedures of data collection and analysis followed in this pilot case study are as discussed in this qualitative research design (See Sections 3.5.3 and 3.6). The findings from this pilot case have confirmed the directions of data search with the focus on SOI in food SC of retailers and confirmed the selection of interviews as classified in Table 3.6 and observations at three levels of actor, dyad and network as described in Table 3.7 and archival records. The findings have helped the researcher to rephrase any jargon in the case study questions and supported the researcher to understand better the resources needed such as time, travel, fieldwork durations and technical challenges to conduct the main case studies.

Hence, this pilot case study has generated valuable data and insights and eliminated many doubts and concerns. It has had a focus on capturing the whole experience and reflecting the nature of participant's experience. It also has facilitated the development of coding related to the study inquiry. Thus, the researcher has included it as one of the main studies in the present research (see Chapters 5 and 6 for the key findings and discussion).

3.6 Data Analysis

3.6.1 Data Analysis Strategy

Data analysis in qualitative research to the analysts' role is fundamentally about detecting, defining, categorizing, theorizing, exploring, explaining and mapping (Ritchie et al., 2014; Creswell and Poth, 2017). The analysis methods are to enable procedures that can be different based on the research questions of the undertaken topic (Miles and Huberman, 1994). These analysis methods may be combined to consider several opportunities for data collection and to improve examining of social events and behaviors. In qualitative research, there are a number of data analysis types: thematic analysis, content analysis, phenomenological analysis, ground theory and discourse analysis (Ritchie et al., 2014; Yin, 2018). For example, thematic analysis is one of the common types in qualitative research, which is used to examine data to identify key themes, analyzing scenarios and interpreting pattern of meanings (Miles and Huberman, 1994; Braun and Clarke, 2006).

In qualitative research, one of the vital procedures is theory building, concerning links amongst prior literature, participant's perceptions, observations and common agreements (Eisenhardt, 1989). Building theory from case studies is the frequent overlap between data collection and analysis in research, which allows connection with empirical reality to build a valid theory (Glaser and Strauss, 1967; Eisenhardt, 1989). Consequently, it is important in multiple-case study to carefully apply two phases of analysis: case analysis and cross-cases analysis (Eisenhardt, 1989; Yin, 2018). This is to code and analyze data and also seize the findings that may exist in the data in order to build or extend theories. In the first phase of analysis, within case, the researcher *"allows the unique patterns of each case to emerge and this gives the researcher a rich familiarity with each case which, in turn, accelerates cross-case comparison"* (Eisenhardt, 1989, p. 540). In the second phase of analysis, cross-cases, the researcher is to identify and expand on key themes proposed from existing literature, to look for similarities and differences between cases, which may lead to replication and more understanding and to divide the data by data sources (Eisenhardt, 1989).

The present research follows thematic analysis as a key strategy to analyze this research data. Thematic analysis is similar to content analysis, and also includes more qualitative analysis of meanings of the data in context, hence is embedded in content analysis (e.g. Braun and Clarke, 2006; Nowell et al., 2017). Thematic analysis goes further observable materials to more unstated and tacit themes and thematic structure in qualitative case studies (Braun and Clarke, 2006; Nowell et al., 2017). According to Holton (1988), the founder of thematic analysis, this material 'themata' and these tacit preferences for certain types of notions are shared in groups, deprived of conscious recognition of them. Braun and Clarke (2006) and Nowell et al. (2017), point out that researchers

apply thematic analysis when using a variety of theories and epistemological approaches in order to clarify the particular nature of a specific group's conceptualization of the phenomenon being studied. Thematic analysis is a qualitative analytic method for *"identifying, analyzing, and reporting patterns (themes) within data. It minimally organizes and describes your data set in (rich) detail. However, frequently it goes further than this, and interprets various aspects of the research topic"* (Braun and Clarke, 2006, p. 6). It shows which themes are significant in the description of the phenomenon being studied (Daly et al., 1997; Nowell et al., 2017). *"A theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set"* (Braun and Clarke, 2006, p. 10). The final findings should highlight the most significant patterns of meanings existing in the dataset; such patterns include symbolic, affective, and cognitive dimensions (Bazeley and Jackson, 2013; Saldaña and Omasta, 2016; Terry et al., 2017). This research uses analysis triangulation to ensure the quality of the findings, using different techniques e.g. building themes and contextual factors, quotations as providing evidence for interpretations to avoid bias, case matrices, network model, explanation building and pattern matching (Yin, 1994; Miles and Huberman, 1994; Nowell et al., 2017; Miles et al., 2020). NVivo is used to help the researcher in order to organize, store and retrieve the research data (Bazeley and Jackson, 2013).

This research follows various phases of data analysis (e.g. Braun and Clarke, 2006; Ritchie et al., 2014; Terry et al., 2017; Miles et al., 2020). In the expert interviews, thematic analysis is conducted in order to group and verify themes from the collected data in order to refine the thoughts on the research topic. More importantly, the initial conceptual framework is refined based on key findings related to building refined themes, key quotations and a proposition. Findings of expert interviews are reported in Chapter 4. In the multiple-case studies, thematic analysis is followed with each case and across cases. Triangulated data analysis is followed based on two stages. First, an exploratory stage for each case is applied based on building themes and contextual factors (codes), categorizing, descriptions and quotations (Saldaña and Omasta, 2016); findings of each case are reported in Chapter 5. Second, an explanatory stage across cases is applied based on matrices, case networks, building explanation and pattern matching; findings and discussion of across cases are reported in Chapter 6.

The data analysis phases followed in this research are summarized in Table 3.8.

Table 3.8: Phases of Data Analysis in the Present Research (Author's own work).

Phase	Data Analysis
Key perspectives and association (Chapter 4)	Expert Interviews: first the literature review is used to identify the initial conceptual framework by expanding on theoretical perspectives: network, entrepreneurship, innovation and sustainability in relation to the phenomenon SOI in SCM. Then, the data analyzed from the expert interviews (semi-structured interviews) will assist in refining the initial conceptual framework , proposing it as an instrument for data collection and analysis for the next phase, multiple-case study.
Individual case study analysis (Chapter 5)	<p>Each case is analyzed in order to examine the proposed conceptual framework in each case, where the researcher applies the following steps:</p> <p>Semi-Structured Interviews (main source of primary data)</p> <ul style="list-style-type: none"> -To transcribe, translate (if needed), read, re-read and write down initial ideas. -To generate initial codes (coding features/identifying themes across the entire data set). -To clarify themes and search for emerged themes (turning codes into potential themes and gathering all relevant data into each potential theme). -To review the themes and identify sub-themes (checking if themes work with coded extracts and the entire data set at actor, dyad and network levels). -To define the themes and categorize sub-themes (contextual factors) (refining the specifics of each theme and the overall story the analysis tells; also generating clear names and definitions for each theme, including contextual factors and description) (see Tables 5.2, 5.3, 5.4 and 5.5). -To select representative quotations from interviewees as vivid examples. Case-Checklist matrices were generated to display a summary of each interviewees' response related to the contextual factors for each key theme (Appendices I-N). <p>Observations</p> <ul style="list-style-type: none"> - Reading/re-reading, writing down ideas (the identified themes and contextual factors). -Checking if observed themes and contextual factors work with coded extracts and the entire data set in line with the interview findings, which are displayed in the case-checklist matrices (Appendices I-N). -Forming a representative summary (table) including findings at actor, dyad and network. <p>Archival Records and Documents</p> <ul style="list-style-type: none"> -Reviewing the identified materials and searching for extracts that agree/disagree with the interview findings, which are displayed in the case-checklist matrices. A representative summary (table) is provided for key secondary data findings.
Cross-case study analysis (Chapter 6)	<p>Cross-case analysis is applied in order to explain and contrast the six cases in order to refine the proposed conceptual framework. The research applies the following steps:</p> <ul style="list-style-type: none"> - Analysis assessments are done by comparing codes between the six food retailers across all the cases, using the checklist matrices generated in Chapter 5. -Explanatory matrices are to allow comparing and contracting of the clarified themes and contextual factors, using a case ordered effect matrix and a cases ordered predictor-outcome matrix. - Network model is created for mapping individual themes and their associations for each perspective to capture the storyline of the phenomenon SOI in SCM. -Providing evidence and replication throughout all the cases to examine the proposed association of the key themes, using aggregated network model. -Identifying a set of propositions to summarize key conclusions on the phenomena and the key associations. -Pattern matching is applied across cases in order to provide a final conceptual framework and expanding the perspectives to theory building approach on SOI in food SCM. -See Chapter 6, Section 6.1 for detailed key stages of analyzing cross cases.

3.6.2 NVivo Software

NVivo is a computer software for qualitative data analysis; it is designed for qualitative researchers with rich data that need to be analyzed. NVivo software is used to help the researcher to organize, store and retrieve the research data, as well as to support in coding, building of themes and sub-themes, word frequency and visualization (Bazeley and Jackson, 2013; Miles et al., 2020).

NVivo 12 Pro software was selected to help in the data management for coding, categorizing and visualization, which supported the thematic analysis in this research. NVivo was selected for different reasons: the researcher had skills in using the program, which is useful in data analysis and quicker than the manual analysis; it managed the interview transcripts that had a large volume of text data; it allowed for providing a thorough data analysis process for the six cases in the present research. However, the final decisions about how to code the data are based on the interpretations of the researcher (Bazeley and Jackson, 2013).

The following steps were followed: first, the transcripts of the semi-structured interviews were uploaded in NVivo software. Second, the uploaded interviews were read and re-read, writing down initial codes. This step helped in turning codes into potential themes and gathering all relevant data into each potential theme linked to a key concept. Third, the themes and their contextual factors (sub-themes) were identified based on the support from deductive coding relevant to key themes informed by the literature review and from inductive coding relevant to newly emerged themes from the interview transcripts (See Table 3.8-Phases of Data Analysis). Fourth, creating each theme and sub-theme is based on the researcher's interpretations. In NVivo each theme is called a node and each sub-theme is called a sub-node. These nodes and sub-nodes are linked to the codes of each key concept (perspectives: network, entrepreneurship, innovation and sustainability). Fifth, all the interview transcripts followed the same analysis process until there was no new development of nodes and sub-nodes. Finally, this process supported the findings in Chapters 4 and 5 with evidence, which are the representative quotations and the display of nodes and sub-nodes for each contextual factor and theme. Appendices S and T shows examples of data display from NVivo for the use of this research.

3.7 Triangulation

Triangulation is the combination of different methods, different perspectives and study groups in exploring and explaining a phenomenon (Flick, 2009). Triangulation is viewed as a method to uncover deeper meanings in the data and key conclusions by applying theory, methodological, investigator and data triangulation types (Denzin, 1973; Patton, 2002). The purpose of undertaking triangulation is enriching, refuting, confirming and explaining the research findings and minimizing research bias (Carvalho and White, 1997). Thus, this research follows triangulation methods as follows in Table 3.9:

Table 3.9: Methods of Triangulation in the Present Research (Author's own work).

Type	Description
Theory Triangulation	Four theoretical perspectives (network, entrepreneurship, innovation and sustainability) are used to interpret the data in the present research. These perspectives have helped the researcher to develop an initial conceptual framework of pre-identified themes to guide data collection and analysis in order to provide a vivid theoretical conclusion on the phenomenon SOI in food SCM.
Methodological Triangulation	Both expert interviews and multiple case studies are conducted in this research. In the multiple-case study, individual case studies and cross case studies are conducted. This type of triangulation has helped the researcher to identify similar findings where consistency is checked from the conclusions of these multiple methods.
Investigator Triangulation	The main investigator is the researcher who conducted the whole study. However, a number of evaluators are used for the evaluation of key findings and conclusions. For the key conclusion and final conceptual framework, two academic researchers from Jordan, that are not in the research sample are reached to verify the final conceptual framework and key findings of this research.
Data Triangulation	<p>This involves different sources of information for data collection and analysis. Both primary (semi-structured interviews and observations) and secondary data (literature review and archival records) are collected to explore and explain SOI in food SC.</p> <p>Data collection triangulation:</p> <ul style="list-style-type: none">-In the interviews, data is collected from different types of interviewees (expert interviews: HR managers and academic researchers; case interviews: five different managers at national and international types of retailers).-In the observations, data are collected from each case, using two types of observations and at three levels: actor (participant observation), dyad (non-participant observation), and network (non-participant observation). In addition, both a meeting and a tour are used in each observation.-Both archival records and documents from the retailers' records and websites and also governmental and international sources are used. <p>Data analysis triangulation: a combination of methods in data analysis is applied to reach findings and conclusions. First, a literature review was analyzed and initial framework was identified in Chapter 2. Second, expert interviews are analyzed and a proposed framework is identified in Chapter 4. Third, analyses of both within case (Chapter 5) and across cases are conducted and a final framework is identified in Chapter 6. Fourth, pilot case study is analyzed in this research. Overall, data is analyzed at three levels of actor, dyad and network within case and across cases. Thematic analysis method is applied in this research using coding, categorizing, quotations, matrices, network models, explanations, pattern matching and key conclusions.</p>

3.8 Reliability, Validity and Trustworthiness

In qualitative research, construct validity, internal validity, external validity and reliability are used to ensure the quality of empirical research and its rigor conclusions (Yin, 1994; Nowell et al., 2017); these are followed in the present research (Table 3.10). Trustworthiness is a method to persuade the reader that the research analysis and findings are acceptable, useful and worthy of attention (Lincoln and Guba, 1985; Nowell et al., 2017); this is followed in the present research (Table 3.11).

Construct Validity: “identifying correct operational measures for the concepts being studied” (Yin, 2018, p.42). This type is applied throughout data collection. This includes multiple sources of evidence from both primary and secondary data, chain of evidence from case study interviews, expert interviews, actual time of observations and case study protocol for data collection, and key informants among the interviewee are asked to review the draft reports of findings and conclusions.

Internal validity: “seeking to establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships” (Yin, 2018, p. 42). Internal validity is applied in data analysis phase to find the theoretical explanations for why the association between the key themes exists within and across cases.

External Validity: “showing whether and how a case study’s findings can be generalized” (Yin, 2018, p.42). The research uses replication logic in multiple case studies; it attempts to provide an analytical generalization i.e. a new conceptual framework is a key contribution. External validity is applied in the research design phase.

Reliability: “Demonstrating that the operations of a study- such as its data collection procedures- can be repeated, with the same results” (Yin, 2018, p.42). The research uses expert interview protocol (Appendix F), case study protocol (Appendix G) and case observation protocol (Appendix H) for all the six cases, therefore developed a case study database. Hence, reliability is applied in the data collection phase.

Table 3.10: Research Quality Control (Adapted from Yin, 2018).

Tests	Case Tactic	When	Action taken during the research
Construct Validity	Multiple sources of evidence	Data Collection	Building trust with interviewees. Interviews, observations, archival records and documents are used.
	Establish chain of evidence	Data Collection	Eight experts and five different managers and 18 observations at actor, dyad and network levels. Interviews are voice recorded and later transcribed and notes during observations and from document analysis are also made and transcribed. All are saved into the researchers' database.
	Key informants	Data Collection	It uses key participants among the interviewees to review the draft report of each case.
Internal Validity	Pattern matching	Data Analysis	Across the cases' patterns are identified. Data analysis triangulation is used.
	Explanation building	Data Analysis	Links and associations between themes are identified. Key propositions are developed.
External Validity	Replication logic in multiple-case studies	Research Design	Replication logic is used in and amongst the six cases to investigate them. A final conceptual framework as a key theoretical contribution.
Reliability	Research protocol	Data Collection	The research uses expert interview protocol-questions for the eight experts (Appendix F), case study/interviews protocol-questions for the six cases (Appendix G) and case observation protocol for the six cases (Appendix H),
	Develop case study database	Data Collection	Key themes of four perspectives used to guide data collection. Interview and observation transcripts, notes, and useful archival records and documents are saved into the researchers' database. External review: final case report was verified by uninvolved academic researchers.

Trustworthiness: has four main components: credibility, transferability, dependability and confirmability (Bryman and Bell, 2015; Nowell et al., 2017). Credibility concerns the fit between the participants' viewpoints and the researcher's interpretation and representation of them; a few techniques for credibility is data collection triangulation, prolonged engagement, persistent observation and participant and an external check (Tobin and Begley, 2004; Nowell et al., 2017). Transferability refers to the transfer of the findings to other context or settings, hence it is the researchers responsibility to provide detailed descriptions (Bryman and Bell, 2015; Nowell et al., 2017). Dependability addresses the reliability and consistency of the research findings as well as a clear, logical and traceable research process which is documented to allow future researchers to follow this process (Nowell et al., 2017). Confirmability addresses the interpretations and findings of the researcher are derived clearly from the data where the researcher demonstrates how the conclusions have been reached (Bryman and Bell, 2015; Nowell et al., 2017). They are applied in the present research as shown below (Table 3.11).

Table 3.11: Trustworthiness (Author's own work).

Trustworthiness		
Components	Action taken during the research	When
Credibility	Data Collection Triangulation	<ul style="list-style-type: none"> -Data is collected from different types of interviewees - In the interviews, data is collected from national and international types of retailers. -In the observations, data are collected from each case, using two types of observations and at three levels, in addition, both a meeting and a tour are used in each observation. -Both archival records and documents from the retailers' records and websites and governmental and international sources are used. (See Section 3.7, Table 3.9)
	Prolonged Engagement	-Researcher spent adequate time with the participants in their work culture to gain better understanding of their values, behaviors and relationships.
	Persistent observation	-Researcher conducted observations for each case using two types of observations and at three levels, in addition, both a meeting and a tour are used in each observation. The observations followed the Case Observations Protocol (Appendix H).
	Participant and External check	<ul style="list-style-type: none"> - Participant check: participant checks their transcribed transcript - External check: For the key conclusion and final conceptual framework, two academic researchers from Jordan, who are not in the research sample are reached to verify the final conceptual framework and key findings of this research.
Transferability	Providing detailed description	The researcher provided detailed description of the findings and discussion.
Dependability	Create an audit trail	The researcher documented a clear, logical and traceable research process (Chapter 3).
Confirmability	Triangulation	For the methods of triangulation in the present research see Table 3.9
	Reflexivity	The researcher documented her reflections throughout the research (Appendix R)

3.9 Ethical Considerations

This research gained ethical approval from the Research Ethics Committee at the University of Northampton based on completing the required documents and conditions in 2018. The researcher successfully completed two courses on Research Ethics: Good Research Practice and Research Integrity Social and Behavioral Sciences in 2018.

Following the ethical guidelines and procedures at the University of Northampton, an invitation letter, information form and consent forms were sent to all retailers, experts and participants (Appendix B-E) (Miller et al., 2012). Retailers, experts and participants chose voluntarily to be a part of the study and signed the consent form. The researcher informed the participants in advance to the interview that anytime during the interview they could ask to stop and withdraw from the interview (Ritchie et al., 2014). It is then all participants received an email after their interviews thanking them for participating, for their time and for sharing their experiences. Interviews were voice recorded with the permission of the participant. The researcher transcribed all the interviews and emailed them back to the participants for any feedback. Lastly, the retailers, experts and participants are confidential; their names are not written, instead number coded (Miller et al., 2012). The recordings, scripts, and written work are encrypted and saved.

3.10 Conclusion

In the present research, the aim is to critically understand the role of entrepreneurship and HR in supporting SOI in SC from the perspective of food retailers in Jordan. It is empirically to understand and examine the potential association between the perspectives (SCM, network, entrepreneurship, innovation and sustainability) in order to establish a holistic understanding of how focal actors at actor, dyad and network levels across the food SC implement SOI to enhance sustainability performance.

This research follows interpretivist views and abductive approach in order to study the phenomenon, SOI in food SC, in its original context. It applies a qualitative method, using multiple-case study strategy. This requires going back-and-forth between the literature and the social world in the empirical context to gain theoretical concepts and to provide conclusions with a theory on SOI in food SCM, hence analytic generalization is a concern (Awuzie and McDermott, 2017; Yin, 2018).

This research has two stages of exploratory and explanatory research. First, expert interviews are used to clarify the initial conceptual framework and to explore and refine the themes, providing a proposed conceptual framework. Second, a multiple-case study is used to explore and explain the topic and examine the proposed conceptual framework, where the unit of analysis is the SC of retailer. A total of eight expert interviews, 30 case study interviews, 18 case observations and archival records and documents across six food retailers is conducted in the empirical context of food SC in Jordan. This qualitative research applies thematic analysis to generate findings from each case and across cases, providing a final conceptual framework for SOI in food SCM.

The next Chapters 4, 5 and 6, will provide the findings from the expert interviews, findings from each case study and findings and discussion on the multiple-case study.

Chapter Four: Expert Interview Findings, Discussions and Proposed Conceptual Framework

4.1 Introduction

This chapter presents the exploratory stage of the expert interviews. The experts are six HR managers from the six retailers and two academic researchers. *“Human resource (HR) and supply chain management (SCM) has evolved to play an integrated supporting role in the creation of the value chain system of an organization”* (Khan et al., 2013, p. 179). Hence, the expert interviews were conducted with eight experts who are involved in food SC, especially their experiences, practices and viewpoints on network, entrepreneurship, innovation and sustainability. The findings found from the expert semi-structured interviews were conducted and analyzed in December 2018. Based on the literature review, in Chapter 2, an initial conceptual framework (see Figure 2.17) was constructed in order to examine the research enquiry. Thus, this is important to identify themes and their contextual factors emerging from the data collected and their analysis (Miles et al., 2020).

This expert interview stage consists of four main purposes. Firstly, to understand the role of HR in food SC of retailers. Secondly, this allowed the researcher to better understand, especially from the perspective of HR managers, the four key theoretical perspectives (network, entrepreneurship, innovation and sustainability) towards SOI in food SCM and refine the perspectives' themes. Thirdly, to identify any emerging themes and potential contextual factors that could be grouped into new themes. Finally, to provide a proposed conceptual framework (Figure 4.2) that will be used as an instrument with the case study protocol (Appendix G). The proposed framework supported in refining the questions' content for both the case study interviews and observations in the case study protocol. Therefore, this process increased the research quality and more importantly increased this research's reliability.

This chapter provides a background of the experts in **Section 4.2**, followed by the findings and discussions on SOI in food SCM as the research phenomenon in **Section 4.3** and key insights from the theoretical perspectives on SOI in food SCM in **Section 4.4**. Followed by the role of HR in **Section 4.5**. The development of the proposed conceptual framework is discussed in **Section 4.6**. Finally, a summary is provided in **Section 4.7**.

4.2 Background of Experts

This section includes key information about the expert interviewees (Table 4.1) and discusses their understanding of food SCM. Eight expert interviews were conducted with six HR managers from the six food retailers and two academic researchers in the field of food SC, one based in Jordan and the other in the UK. Semi-structured interviews were conducted in 2018 based on the Expert Interview Protocol-Questions (Appendix F), which lasted roughly 40-60 minutes.

Table 4.1: Experts Background (Author's own work).

Characteristics	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8
Retailer	Retailer 1 (R1)	Retailer 2 (R2)	Retailer 3 (R3)	Retailer 4 (R4)	Retailer 5 (R5)	Retailer 6 (R6)	N/A	N/A
Job Title	HR manager (HRm1)	HR manager (HRm2)	HR manager (HRm3)	HR manager (HRm4)	HR manager (HRm5)	HR manager (HRm6)	Researcher based in Jordan (AR1)	Researcher based in the UK (AR2)
Age	35-45	45-55	25-35	25-35	25-35	25-35	35-45	35-45
Gender	Female	Male	Male	Male	Male	Male	Male	Female
Education Level	MSc	BSc	BSc	MSc	BSc	BSc	PhD	MPhil
Country of Education	UK	Jordan	Jordan	USA	Jordan	Jordan	UK	UK
Years of Experience	15	27	11	11	10	12	17	14
Year Retailer Established	2000-2006	1990-1996	2000-2006	2000-2006	2000-2006	2000-2006	N/A	N/A
Ownership of Retailer	International	International	International	Local	Local	Local	N/A	N/A
Location of HQ Retailer	Amman	Amman	Amman	Amman	Amman	Amman	N/A	N/A
Number of Branches	20+	15-20	1-5	6-10	15-20	1-5	N/A	N/A
Type of Food Supply chain	Meat and Dairy	Meat and Dairy	Meat and Dairy	Meat and Dairy	Meat and Dairy	Meat and Dairy	Meat and Dairy	Meat

*All experts = 8 Expert Interviewees

*All HR = 6 HR Experts

*All AR = 2 Academic Researchers

The experts interviewed all have university degrees, i.e. BSc, MSc, MPhil and PhD and 10-30 years of experience in food SC. The six experts from the food retailers' work in their main headquarters located in Amman, Jordan; and were able to provide information on both meat and dairy SCs. The academic researcher based in the UK provided information on the meat SC while the academic researcher based in Jordan provided information on both meat and dairy SCs. From the six retailers, three are international and three are local food retailers, with branches in Amman and other governorates across Jordan.

4.3 SOI in Food SCM

▪ Food Supply Chain Management (SCM)

In these interviews, the experts played an important role in highlighting their awareness of food SCM, this contributed in answering the research questions based on their knowledge and empirical experience. All the expert interviewees strongly agree that food SCM is a network of organizations that manage the total flow of materials between buyers and suppliers by performing different processes and activities in order to produce products and services for the final customer. As supported by HRm5 who stated, *“Supply chain is to manage a supply of quantities of required products that we should receive and manage with selected suppliers. Also, to ensure we share different activities and resources with mutual benefits.”* Some experts discussed the significance of building relationships and trust in order to achieve collaboration and cooperation in the food SC, as explained, *“When managing products between suppliers and buyers, it is important to build trust, relationships, cooperation and collaboration with these different organizations in order to have successful business relationships as well as satisfied customers”* (HRm2).

The findings suggest that the majority of the experts agreed that sustainability is an important concept in food SCM. Some of the experts’ emphasized the importance of enhancing sustainability by means of innovation, as explained *“Food SCM it is a network of interacted relationships between different buyers and sellers that jointly manage product, information and financial flow for better innovative solution and sustainability development in this risky industry”* (AR1). While other experts’ highlighted environmental, economic and social sustainability, which can be understood from the comment *“SCM is all about understanding traceability of a product between us and other organizations as a technological solution to increase our economic benefits and business continuity. It is also about managing how to deal with environmental aspects as well as our employees”* (HRm1). A few experts claimed that entrepreneurship is a significant issue in SCM. In consistence with this, one of the experts said, *“I consider food SCM as how each department thinks like entrepreneurs about our products and processes that will link us with our partners in our meat and dairy chain; for example, our fresh food manager has been utilizing advanced inventory management systems with our packaging supplier and our meat trader”* (HRm4).

The overall experts showed sufficient understanding of what food SCM is in terms of the total flow of materials from suppliers to the end customers, including the focal retailers as key innovative entrepreneurs across the SC actors. As well as keeping up with the latest challenges and trends in the markets and the importance of network, entrepreneurship, innovation and sustainability.

- Sustainability-Oriented Innovation (SOI)

The experts highlighted their awareness of SOI in food SCM in the interviews. All the expert interviewees strongly agree that SOI is enhancing products or services innovatively in order to create environmental and social value as well as economic values for their food SCs. As supported by HRm3 said, “*Sustainability is becoming an essential part of our business strategy. Trying to conserve resources, cost saving and helping our employees and communities.*” From an academic researcher perspective, AR2 who explained, “*The concept of SOI is to create products innovatively to generate environmental, social and economic value.*”

Based on the results found, the experts presented sufficient understanding of SOI in food SC. Therefore, the key findings from the experts lead this research to focus on what innovations are implemented in order to create and enhance sustainability at the actor, dyad and network levels.

4.4 Insights on SOI in Food SCM

This section provides the findings of the expert interviews in order to compare and contrast their responses to refine the initial conceptual framework and the case interview protocol- questions. This supported the researcher to capture preliminary insights from the four theoretical perspectives: network, entrepreneurship, innovation and sustainability as well as to explore the phenomenon and the inquiry under investigation. A visualization using NVivo is shown below (Figure 4.1) of the nodes and sub-nodes for each theoretical perspective for all the expert interviews.

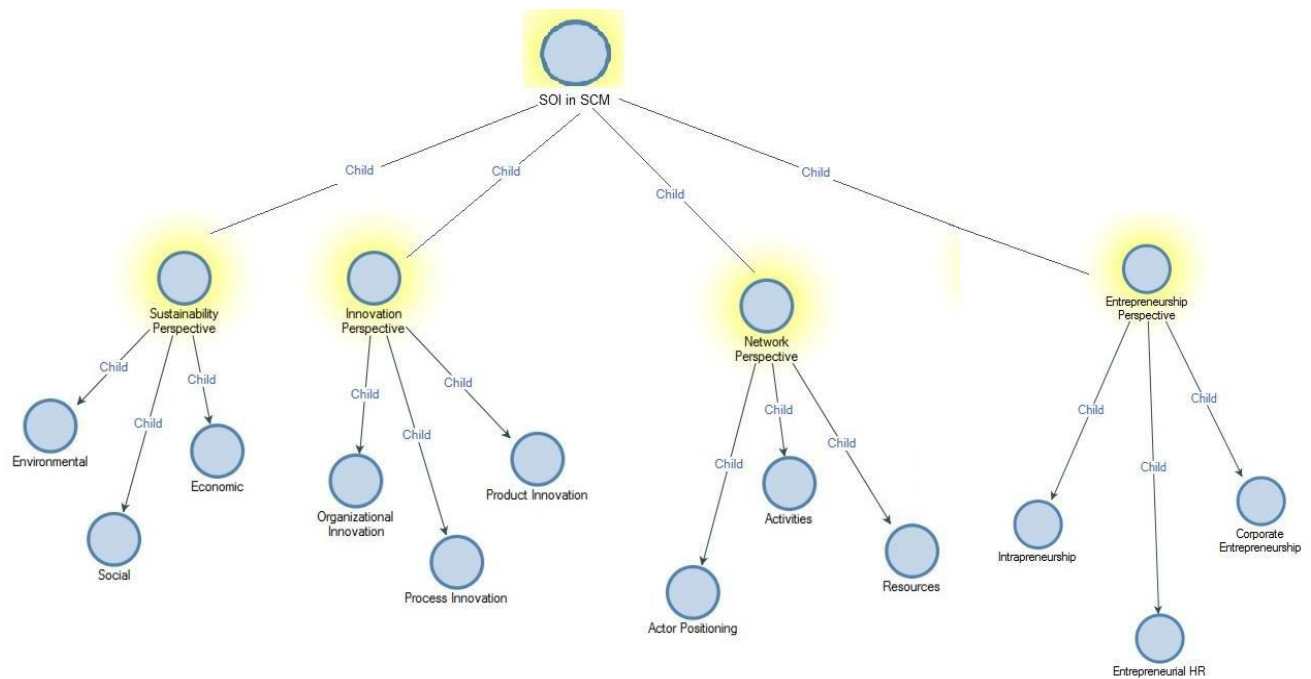


Figure 4.1: NVivo: Nodes for the Four Theoretical Perspectives

4.4.1 Network

The experts provided relevant discussions on the concept of network based on their knowledge and empirical experiences. They highlighted the significance of implementing network strategies, either actor positioning, activities and resources. From an academic researcher perspective, AR1 who explained, *“Network is a set of relationships, which are direct and indirect between different actors in the chain where they share resources and activities.”* As HRm3 supported this, *“We try to play a good role within our network. Our position is linked to our reputation, where we provide initiatives on several issues such as product developments, required certificates, etc.”*

The majority of the experts discussed the importance of the activities they share within their organization and other actors in the food SC. As confirmed by HRm4, *“We have several different activities we conduct in our organization such as staff support and training. We have activities we conduct with our partners such as agreements, transfer of products, etc. and also activities with other members, like the government bodies, in the SC such as information exchange, certificates, regulations, etc.”* Several experts discussed that a majority of their activities conducted at either the actor, dyad and network level revolves around sustainability either social, environmental or economic. As highlighted by HRm6, *“I believe that most of our activities we implement are concerned with the environment, our staff and society as a whole and also has to do with all the economic issues happening in Jordan. We have more activities concerning these concepts within our organization compared with our partners and other members in the chain.”*

Most of the experts highlighted the significance of the resources they need in order to implement the activities at all three levels: the retailers, their actor dyads and networks. In consistence with this, HRm1 said, *“Within our organization, we have several different resources to achieve our activities better such as financial resources. We have resources between our partners such as informational resources and also resources with the other companies in the chain such as meeting facilities with government bodies concerning our certificates, inspections, regulations, etc.”* Most of the experts discussed that they need plenty of resources at all three levels when considering sustainability. HRm5 supported this, *“In my opinion we need sufficient resources in our organization in order to implement activities about the environment, our staff as well as the economic issues in Jordan. Unfortunately, I believe we need more resources with our partners and others in the supply chain when dealing with sustainability, as resources are vital.”*

Based on these findings, it was found that all the experts strongly believe that their organizations implement networks in food SCs at all three levels. Where network is clustered into three key

themes, actor positioning, activities and resources. The data suggest that most of the experts emphasized about the importance of conducting activities concerned with sustainability at all three levels and that they need sufficient resources in order to implement them. It was also found that they do not have enough resources at the dyad and network levels to implement activities concerning innovation and sustainability. In addition, they suggested that it is the responsibility of the focal retailers to be innovative and encourage other actors in their supply chains to better collaborate for adding value for all actors with a focus on end-customers as well as enhancing sustainability performance.

4.4.2 Entrepreneurship

Based on their knowledge and empirical experiences, the experts provided relevant discussions on the concept of entrepreneurship. They emphasized the significance of applying entrepreneurship (either the organization, its employees and/or its HR) at their retailers to be successful and to overcome challenges. In consistence with this, HRm6 said, *“I believe that entrepreneurship is important within our organization. Thinking like an entrepreneur and entrepreneurial behavior helps in coming up with innovative ideas and leads to a successful business.”* From an academic researcher perspective who supported this, *“Entrepreneurship is not only for new start-ups but can exist within any organization, by means of employees as intrapreneurs or the organization itself as corporate entrepreneurship. Where the entrepreneurial mindset in food industry can assist in different ways, from computerized systems such as integrating inventory management systems, to cold transportation of products, and other activities across the food supply chain”* (AR2).

A majority of the HR managers believe that their organization implements entrepreneurship. As confirmed by HRm4, *“Our organization, Retailer 4, encourages and motivates us to come up with innovative ideas that can benefit the organization particularly sustainability performance.”* The experts agree that their organization is responsible for providing the adequate resources and support for implementing an innovative idea provided by their employees and that the organization takes the risk to implement it. As highlighted by HRm5, *“When any of our employees initiates an innovative idea, they notify the organization, then our organization goes through a process of studying the idea and checking if it will benefit us and if it is within the financial budget and if the resources are available. If the idea is accepted and they decide to implement it, the organization is taking the risk and not the employee.”* A few experts commented on different challenges that hold back the organization in being entrepreneurial such as culture, as mentioned by HRm3, *“One of our core challenges is the cultural differences, between our Jordanian cultures compared to our other branches abroad; [...].”*

Almost all of the experts agreed that it is important to have intrapreneurs in an organization, as suggested by HRm3, *“I believe it is important for our employees to think like entrepreneurs within our organization, to ‘think outside of the box’ and come up with something innovative.”* Several experts understand that if they do build an innovative idea that they must abide by the organizations’ policies and structure. In consistence with this, HRm1 said, *“Even when we do receive emails motivating us to build innovative ideas, we need to follow the organizations’ policies and structure, for example, the yogurt display, social events, minimizing our carbon footprint, etc.”* Most of the experts discussed the use of the organizations’ resource, as explained: *“In one of our meetings, we were told to utilize the companies’ resources such as to attend the sustainable international training related to our rewarded ideas and that it is covered by the companies’ budget”* (HRm5).

All the HR managers strongly agreed that they understand the overall business context regarding the factors affecting their business from different aspects including how and why decisions are made in order to achieve their business goals. As confirmed by HRm6, *“We understand our entire business environment and we play a key role in our organization, R6, such as training, job description, time in which we recruit new employees, performance indicators, operationalizing responsibilities, building relationships and much more.”* Several experts discussed that it is important for HR to think entrepreneurially and make good decisions. As confirmed, *“I realized, a few weeks ago in our meeting, that due to one of our HR team members who made a really good decision for one of our projects for the environment and she really did ‘think outside of the box’ that the project was a complete success.”* (HRm3). From an academic researcher perspective who highlighted, *“In the latest literature several authors in peer-reviewed journals explained that SCM and HR combined is important in helping create value chain.”* (ARI). Some of the experts discussed the importance of entrepreneurship at the three levels, actor, dyad and network, in order to enhance SOI. As confirmed, *“I believe it is important for us to be entrepreneurial at our organization, as well as our suppliers and other organizations in the supply chain in order to be more innovative and increase sustainability performance”* (HRm2).

Based on these results, the data suggests that entrepreneurship plays a big role in organizations, in terms of enhancing SOI by means of creativity and innovation. Where entrepreneurship is clustered into three key themes, CE, intrapreneurship and entrepreneurial HR. A new concept, culture, emerged from the findings; it will be discussed further in the case interviews to get a better understanding of how it affects developing an entrepreneurial mindset. Most of the experts have identified that these three themes have orientation to SOI at the three levels: actor, dyad and network.

4.4.3 Innovation

The experts provided relevant discussion on the concept of innovation based on their knowledge and empirical experience. They emphasized the significance of innovation at their retailer to be successful in enhancing their food SCs. In consistence with this, HRm5 said, *“I believe that our innovative ideas are what keeps us thriving in our competitive market and seizing market opportunities.”* From an academic researcher perspective who supported this, *“From my own experience, I believe organizations can utilize their creativity, uniqueness and innovativeness to compete in the competitive market. For example, the organizations capability to respond quickly to all types of demands in the market” (AR1).*

All the HR managers believe that innovation is an essential in their organization and that their organization is innovative at a level. As confirmed by HRm3, *“Innovation is how we differentiate our organization in this competitive market and by having a good R&D team that helps keep an eye out for any new market opportunities.”* From an academic researcher perspective who stated, *“I believe that some organizations across the supply chain have limited understanding and implementation of innovation while other organizations are advanced” (AR2).*

Most of the experts agreed that product innovation is important for the organization to survive in the market and responding to demand, as suggested by HRm4, *“I believe our yogurt product differentiation is innovative since our competitors do not have a big variety of organic products like us. However, our customer demand for these products is very high so we target specific costumers. These products are offered at an acceptable price and in return we encourage and support our suppliers to be environmentally friendly.”* Some of the experts believe when they are pressured from their chain it is an opportunity for them to improve their sustainability performance, as highlighted by HRm5, *“With everything going on in our economy and our competitive market, we are pressured from the supply chain to improve our environmental performance through product innovation, for example, product design.”*

Several experts discussed that it is highly important to implement process innovation in an organization in order to attain economic benefits and improve their environmental performance. As HRm1 discussed, *“We always try to be up-to-date with all the new trends and technologies locally and internationally. I believe adopting new innovative technologies, such as installing LED lights was a great decision as we improved our environmental performance as well as cut our costs.”* Some of the expert interviewees highlighted their response to external pressures and regulatory changes. In consistence with this, HRm6, *“When there are external pressures we try to respond*

quickly, wisely and innovatively. When we receive regulations from government bodies we need to begin the process of implementing them.”

Almost all of the experts highlighted the importance of engaging employees in developing a sustainable business by means of providing training and organizational development schemes. In consistence with this, HRm4 said, *“Last week we had trainings discussing different things we have in our organization for sustainability and how important it is. These types of trainings are provided regularly for all employees and during the trainings they motivate us to come up with something innovative that would help our environment or even cut our costs and in return they give us a reward.”* All the experts agreed that health and safety issues are a significant aspect to be implemented properly in an organization, as suggested by HRm1, *“Our organization structures regulations on health and safety issues. As an international retailer we have regulations on health and safety issues and quality certificates from both the Jordanian government bodies and our international HQ.”* HRm2 suggested that *“We believe that risks can happen within any organization and this is well recognized by most of us in our controlling procedures as our fresh food products are perishable and sensitive.”* From an academic researcher perspective who stated *“Really our concern is more about our organizations when implementing innovative solutions and products. It is all about how the organization or other chain actors structure and manage the procedures of taking risks when implementing different innovations”* (AR1).

Based on the findings, innovation is essential for food chain actors to implement in order to survive in the existing and future markets and succeed; hence, when an actor utilizes its innovativeness either their product innovation or process innovation they in turn enhance SOI. While some experts have confirmed an emerged theme, which is organizational innovation that should be integrated into the organization. Organizational innovation will be elaborated in the case study discussion in order to consider it as one of the high ordered themes based on the findings to understand the phenomenon of SOI. Therefore, the key findings from the experts lead this research to focus on these three as key themes of innovation (product, process and organizational innovation) which affect innovation orientation in order to enhance SOI overall.

4.4.4 Sustainability

Based on their knowledge and empirical experiences, the experts provided discussions on sustainability. They highlighted the significance of implementing sustainability, either environmental, economic or social. As explained by HRm2, *“Our organization cares about the environment and we try to implement innovative ideas that help our environment like solar panels. Implementing solar panels just at our main branch cut our costs a lot; imagine when we implement solar panels across all our branches how much we would save.”* A few HR interviewees discussed their relationships with recycling companies, as stated by HRm5, *“We established a relationship with a recycling company where they provided us with bins to divide our recyclable waste for them to pick up, since in Jordan we have no municipal recycling offered.”* From a researcher perspective who stated, *“In my opinion, sustainability is about the three dimensions, economic, environmental and social, they interact and work together and for an organization to succeed in implementing sustainability it should implement all three dimensions together not separately (AR2).”*

Most of the experts discussed that they stay up-to-date with innovative ideas that minimize their cost, by planning and attending trainings and conference, as clarified by HRm3, *“We keep up with what is going on with our competitors and if they have something that helps minimize cost, we try to implement it also.”* Most of the experts discussed the importance of the economic issues and business growth in the Jordanian context: *“Due to the economic issues in Jordan, we are always promoting our products aggressively to recover from the decrease in sales. We are also increasing our variety of products especially beef and other meat (HRm6).”* A few experts discussed how they utilize their advanced systems, such as procurement system, to investigate the economic factors and growth on a weekly basis, as expressed by HRm2, *“We have a good procurement system to search for the best supplier, e.g. meat and yogurt, which reflect on the price on our consumers.”*

Some of the experts noted that their organization arranges social events for its employees. As noted by HRm1, *“We have every few months a social event, either trips, football tournaments, birthdays, and much more events for our employees cross all our branches. R1 really tries to arrange fun activities and events for its employees to take part of as a big family.”* Some experts underlined the importance of implementing a butcher school at the organization, which can be understood from the comment, *“We created a butchery school, especially for anyone that cannot find a job. They attend for three months, receive a certificate, and are employed at our organization” (HRm6).*

Based on the results found, all the experts strongly believe their organization implements different levels of sustainability. Where sustainability is clustered into three key themes, environmental, social and economic. Some of the experts have identified that these three themes of sustainability have orientation to SOI at the three levels: actor, dyad and network.

4.5 Role of HR

Based on the findings of the expert interviews, it was found that HR engage in supply chain practices to develop a robust organizational culture in order to achieve sustainable goals efficiently and enhance the performance of the retailer. In consistence with this, HRm2 stated, *“Us, the HR, work on providing a good business culture to achieve our goals involving sustainability.”* HR has a strategic role in creating and engaging different strategies which focus on sustainability (environmental, social and economic dimensions) within the retailer as well as across the supply chain with both dyad and network levels. As discussed by HRm1, *“We, the HR department, work on developing strategies which involve sustainability, some of these strategies are for R1 and we have other strategies when working with our chain actors.”*

HR develop policies to enhance the knowledge of employees on different sustainability activities such as reducing the retailer’s carbon footprint hence enhancing their sustainability performance. As stated by HRm4, *“Here at R4, our HR work on different ways to bring awareness to our employees on sustainability and different activities we can apply to minimize our carbon footprint.”* HR play an important role in motivating employees to achieve the goals of the retailer and to be innovative as well as motivating employees of different actors across the chain involving their mutual goals. As highlighted by HRm3, *“We always encourage our employees to be innovative and to accomplish our goals. We also encourage our chain actors to accomplish our mutual goals.”*

4.6 Development of Proposed Conceptual Framework

4.6.1 Key Findings from Expert Interviews

From the literature review, four theoretical perspectives: network, entrepreneurship, innovation and sustainability were identified to explore and examine deeper SOI in SCM as suggested by several authors (e.g. Hansen et al., 2009; Lengnick-Hall et al., 2013; Beske and Seuring, 2014; Rueda et al., 2017; De Vargas Mores et al., 2018; Neutzling et al., 2018). In addition to possible themes for each perspective were identified. Depending on these perspectives and themes, an expert interview protocol-questions were built. The purpose of conducting the expert interviews was to refine the use of these perspectives and their identified key themes. The output of the expert interviews is that the theoretical perspectives are important in order to understand SOI in food SCM. As well as

confirming, introducing and even removing any themes. This will shed the light on some possible contextual factors that will be explored and explained in the case study analysis.

After conducting the expert interviews, emerged concepts were revealed as important factors for the food retailers in Jordan. These are organizational innovation and business culture. On the other hand, the experts suggested to reconsider the concept of risk taking as it may be evolved in different perspectives such as innovation and/or entrepreneurship. For the concept of *organizational innovation*, a majority of the experts discussed the importance of implementing training and development schemes for employees, health and safety issues, environmental policy, local sourcing, organizational structures, sustainability vision, code of conduct, stakeholder management, which is in line with prior research (e.g. Mazzanti and Zoboli, 2009; Bos-Brouwers, 2010; Klewitz and Hansen, 2014; Anzola-Román et al., 2018). Therefore, when an organization utilizes its innovativeness, they in turn enhance SOI. Hence, this concept is considered as one of the themes for the innovation perceptive. For the concept of *risk-taking*, it was also revealed that it should not be clustered as a theme under innovation but as a possible contextual dimension. Different degrees of risk was shown in the expert interviews that could be studied from entrepreneurship and/or innovation perspectives. Further exploration and examination of risk-taking is conducted in the cross-case analysis for better clarification. For the concept of *business culture*, it was also found that culture is a challenge for food retailers in Jordan that it holds them back from being entrepreneurial. Business culture will be explored and examined in the case study interviews to get a better understanding of how it affects developing entrepreneurial tendency and mindset.

Table 4.2 illustrates representative quotations found from the expert interviews based on the key themes of each theoretical perspective. It also includes authors from the literature that support the themes.

Table 4.2: Key Themes and Representative Quotations from Expert Interviews (Author's own work)

Perspective	Key Themes	Representative Quotations	Supporting Authors from Empirical Studies
Network	-Actor Positioning -Activities -Resources	AR2 said, <i>"Network is a set of business relationships either direct or indirect between different actors in the chain where they share resources and activities."</i>	(Hakansson,1987;Harland, 1996; Miemczyk et al., 2012; Roscoe et al., 2015; Petljak et al., 2018)
Entrepreneurship	-Corporate Entrepreneurship (CE) -Intrapreneurship -Entrepreneurial HR	HRm4 said, <i>"I believe it is important for our organization to be entrepreneurial. [...]"</i> HRm6 said, <i>"I think it's important for employees in our organization to think like entrepreneurs and develop something innovative."</i> HRm1 said, <i>"[...] since our HR team members understand the entire business environment and try to make good decisions, the completion of our projects are successful."</i>	(Veronica et al., 2013; Baruah and Ward, 2014; Nason et al., 2015; Gómez-Cedeño et al., 2015; Luqmani et al., 2017))
Innovation	-Product Innovation -Process Innovation -Organizational Innovation	HRm3 said, <i>"We are always pressured from our chain to enhance our environmental performance through product innovation. We respond quickly and innovatively. [...] We provide training for our employees in developing a sustainable business."</i>	(Bos-Brouwers, 2010; Martín-Tapia et al.,2010; Klewitz and Hansen,2014; Beske and Seuring, 2014; Hugos, 2018)
Sustainability	-Environmental -Social -Economic	HRm2 said, <i>"We always try to implement innovative projects, such as LED lights, that concern the environment and cut our costs [...]. Yes, we occasionally have social events for the staff like field trips, company dinners, etc."</i>	(Shepherd and Patzelt, 2011;Esfahbodi, et al., 2016; Tasca et al.,2017; Petljak et al., 2018; Neutzling et al., 2018)

4.6.2 Proposed Conceptual Framework

Based on the key findings of the expert interviews, the researcher revisits the initial conceptual framework (Figure 2.17), to refine it. Hence, a conceptual framework is proposed as illustrated in Figure 4.2. This framework proposes, firstly, that themes of entrepreneurship perspective should be devoted to integrating network perspective at actor, dyad and network levels to have orientation to SOI in SCM. This will provide a more holistic understanding of how innovation perspective is linked to sustainability perspective to understand SOI in food SCM. Retailers, as focal actors, play a key role in the food SC; they should apply corporate entrepreneurship, intrapreneurship and entrepreneurial HR. It would be worthwhile to examine how the involvement of the focal actors as corporate entrepreneurs effect the development of focal actor positioning, their activities and their resources at the actor, dyad and network levels. Secondly, our approach in considering the themes of entrepreneurship with the network perspective is to have progressive effects on SOI, with regards to innovation and sustainability perspectives. Hence, the focal actor should implement product, process and organizational innovation in order to enhance environmental, social, and economic sustainability performance.

Drawing from the above, the themes are confirmed from the findings based on the expert interviews, which have refined the initial conceptual framework, by either integrating or removing themes. This assisted the researcher to restructure the perspectives in a different order as well as to reconstruct the themes by better linking the identified perspectives. SCM remains the foundational perspective and the four other perspectives are incorporated in the SCM to critically explore and explain the phenomenon, SOI in food SC, in a holistic view. One of the themes for innovation was removed which was risk-taking, however, it may be reconsidered in the case study analysis. Another high-order theme was integrated which was the concept of organizational innovation. In addition, the concept of business culture was highlighted to be considered in the case study analysis. The experts were given the initial conceptual framework after the questions were completed in order to get their insights; their suggestions were in line with their previous answers. The refined framework confirms some of the contingencies that have previously been discussed in the literature; nevertheless, it adds new insights in terms of SOI in food SC. Further examining the key perspectives contribution to SOI in SCM in each case (Chapter 5) and validating them across cases (Chapter 6) will be conducted in the case study stage.

Having identified the themes from the literature review then refined in the expert interviews, in this stage of the research it has contributed in answering RO1. Another purpose of the expert interviews was to refine the case interview protocol-questions and to capture preliminary insights to be considered in the case study interviews. Some refinements conducted was adding and removing some questions, removing any jargon words, decreasing the number of questions and better structuring the order of the questions (Appendix G). It also helped in identifying good probing and prompting questions. More insights will be provided in the multiple-case study findings to fully answer all the RQs. The proposed conceptual framework will be used for data collection and analysis. The unit of analysis in this research remains the same, which is the food SC of retailers including the meat and dairy SCs, specifically beef and yogurt products. Hence, this research provides the following key proposition:

The theoretical perspectives: network, entrepreneurship, innovation and sustainability, have an orientation to SOI in regards to innovation orientation and sustainability orientation in food SCM.

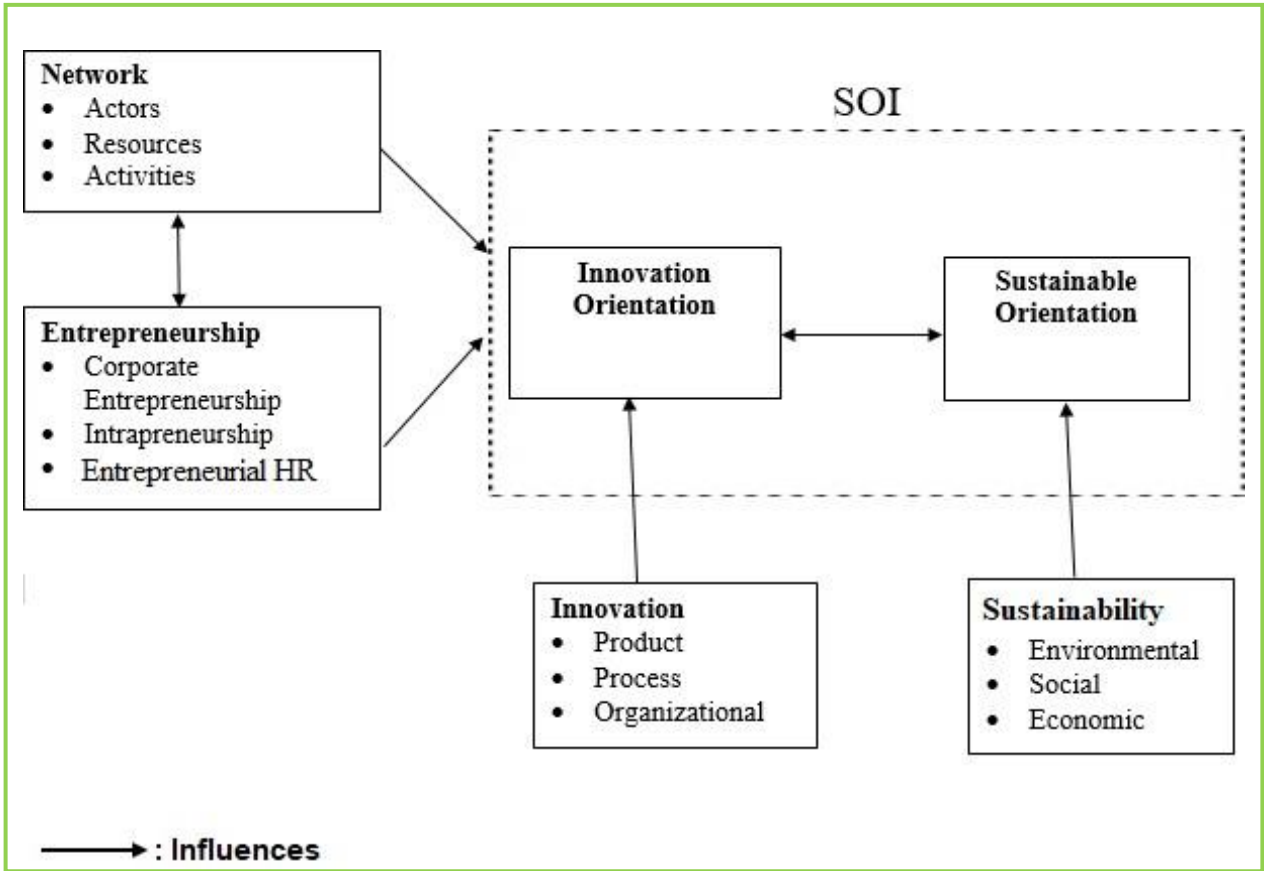


Figure 4.2: Proposed Conceptual Framework (Author’s own work).

4.7 Conclusion

This chapter provided the findings and discussions from eight experts on SOI in food SC as the research phenomenon. The key insights from the theoretical perspectives on SOI in food SCM were explored and addressed. Finally, the proposed conceptual framework was illustrated as an instrument for data collection and analysis for the multiple case studies.

The next chapter provides a description of the six cases individually as well as the findings of the fieldwork: semi-structured interviews, observations and secondary data.

Chapter Five: Case Study Analysis and Findings

5.1 Introduction

The first stage of data collection was conducting the expert interviews with six HR managers and two academic researchers (Chapter 4) to refine the initial conceptual framework (Figure 2.17, Chapter 2) and to refine the case study protocol- questions (Appendix G). This has led to a proposed conceptual framework (Figure 4.2, Chapter 4), which was constructed based on the findings of the expert interviews; this framework was then used as an instrument with the case study protocol to conduct the six case studies.

This chapter presents the findings of each of the six case studies conducted in Jordan and are presented from the data collected (Table 5.1) throughout 2019. The interviewees' own words and opinion were used in this chapter, in order to capture their experiences, perceptions, believes and behavior of the phenomena. The findings from these case studies are divided into three phases using triangulation. The first, are the findings from the semi-structured interviews (based on case interview protocol-questions; Appendix G), the second, the findings from the observations at actor, dyad and network levels (based on case observation protocol; Appendix H). Finally, the analysis of the archival records and document data, which were collected from several different resources.

The purpose of this exploratory stage is to provide findings for each case study in order to support the researcher to capture preliminary insights and to explore the phenomena of SOI in food SC and examine the proposed conceptual framework. This chapter provides the contextual factors (codes) and their descriptions for each theme related to each theoretical perspective in **Section 5.2**. This is followed by the findings of each case study from semi-structured interviews, observations and archival records and documents in **Section 5.3**. Finally, a conclusion is provided in **Section 5.4**.

Table 5.1: Data collected for Case Studies (Author's own work).

Case No.	*Date	Interviews	Observations	Secondary Data
Case 1	MAY 2019	FFM1	<i>Actor-</i> Meeting and tour	<i>Documents:</i> From website of the retailer, Government websites of sustainability projects and reports. <i>Archival Records:</i> Retailer project surveys, market reports and meeting minutes.
		PDM1	<i>Dyad-</i> Meeting and tour at a slaughterhouse	
		SCMr1	<i>Network-</i> Meeting and tour at a beef distributor	
Case 2	JANUARY 2019	HSS1		<i>Documents:</i> From website of the retailer, Government websites of sustainability projects and reports. <i>Archival Records:</i> Types of services and products, demographic details, market reports and meeting minutes.
		HSM1		
Case 3	JANUARY 2019	FFM2	<i>Actor-</i> Meeting and tour	<i>Documents:</i> From website of the retailer, Government websites of sustainability projects and reports. <i>Archival Records:</i> Types of services and products, demographic details, market reports and meeting minutes.
		PDM2	<i>Dyad-</i> Meeting and tour at a slaughterhouse	
		SCMr2	<i>Network-</i> Meeting and tour at a beef packaging	
Case 4	JULY 2019	HSS2		<i>Documents:</i> From website of the retailer, Government websites of sustainability projects and reports and Jordanian Drug and Food Association website. <i>Archival Records:</i> Retailer project surveys, description of stakeholders and demographic details.
		HSM2		
Case 5	APRIL 2019	FFM3	<i>Actor-</i> Meeting and tour	<i>Documents:</i> From website of the retailer, Government websites of sustainability projects and reports. <i>Archival Records:</i> Retailer project surveys, financial records, description of stakeholders and meeting minutes.
		PDM3	<i>Dyad-</i> Meeting and tour at a yoghurt industry	
		SCMr3	<i>Network-</i> Meeting and tour at a yoghurt distributor	
Case 6	APRIL 2019	HSS3		<i>Documents:</i> From website of the retailer, Government websites of sustainability projects and reports. <i>Archival Records:</i> Financial records, description of stakeholders, market reports and meeting minutes.
		HSM3		
Case 7	JANUARY 2019	FFM4	<i>Actor-</i> Meeting and tour	<i>Documents:</i> From website of the retailer, Government websites of sustainability projects and reports. <i>Archival Records:</i> Financial records, market reports and meeting minutes.
		PDM4	<i>Dyad-</i> Meeting and tour at a yoghurt industry	
		SCMr4	<i>Network-</i> Meeting and tour at a yoghurt packaging	
Case 8	JANUARY 2019	HSS4		<i>Documents:</i> From website of the retailer, Government websites of sustainability projects and reports. <i>Archival Records:</i> Financial records, market reports and meeting minutes.
		HSM4		

*The case studies are not ordered by date conducted, as they were conducted based on availability.

FFM: Fresh Food Manager

PDM: Product Development Manager

SCMr: Supply Chain Manager

HSS: Head of Sustainable Sourcing

HSM: Hygiene and Safety Manager

5.2 Contextual Factors (Codes) and Descriptions for High-Order Themes

The researcher considered several implications in the process of developing contextual factors (codes) such as the interpretation of the interviews' transcripts and the researcher's way of organizing and categorizing the data collected. See Figure 5.1 for an illustration of the Key Perspectives for SOI in food SCM.

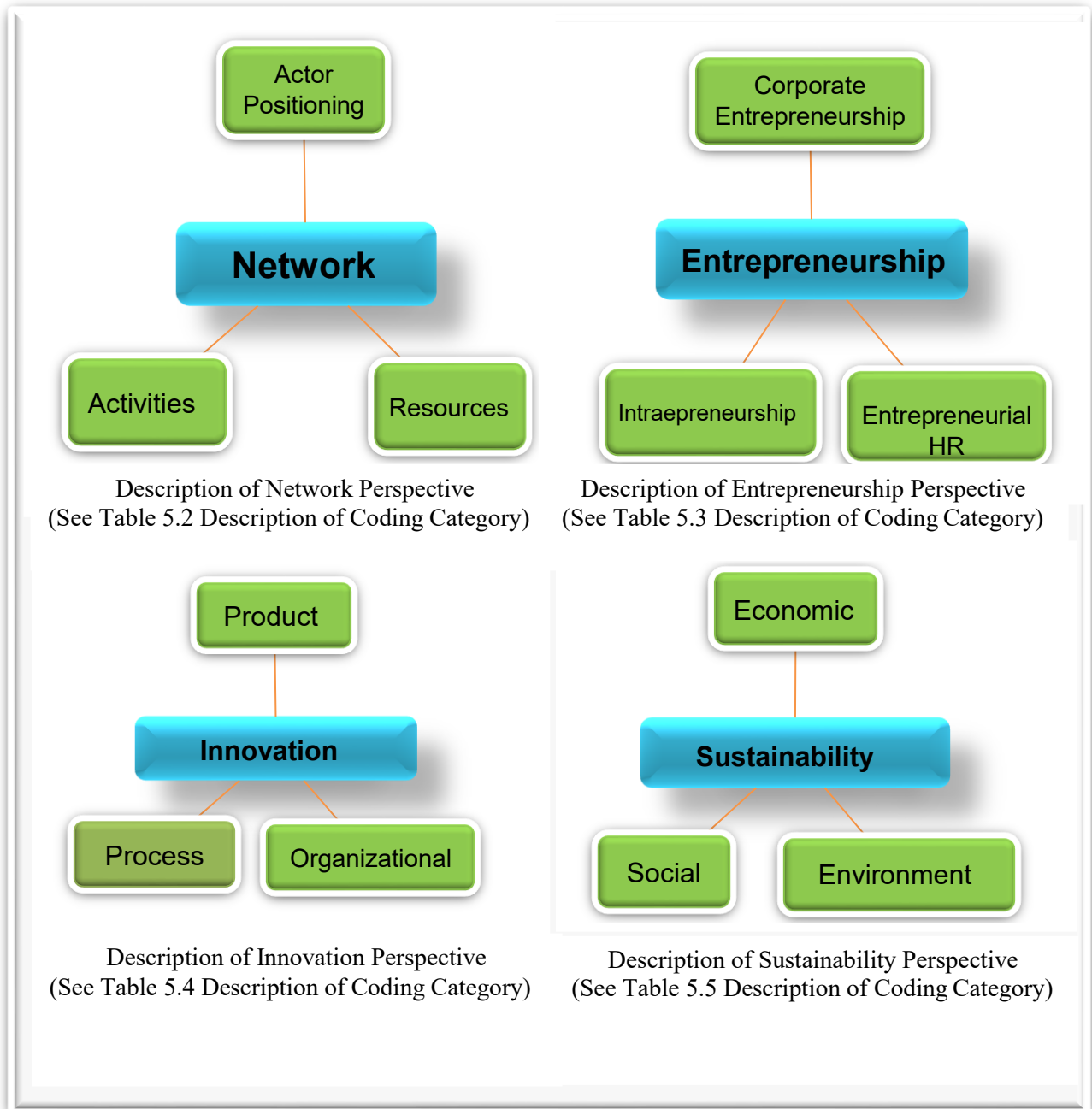


Figure 5.1: Illustration of Key Perspectives for SOI in Food SCM (Author's own work).

The following tables are the contextual factors (codes) and their descriptions found for each theme for each theoretical perspective across all cases: network (Table 5.2), entrepreneurship (Table 5.3), innovation (Table 5.4), and sustainability (Table 5.5) contributing to understand SOI in SCM in-depth. Productive data collection supplemented with effective analysis led to rich findings for each case study based on a selection of views by the interviewees, observations and documentary data. Visualizations using NVivo are also shown below of the nodes and sub-nodes for each theoretical perspective across all cases: network (Figure 5.2), entrepreneurship (Figure 5.3), innovation (Figure 5.4), and sustainability (Figure 5.5).

Table 5.2: Description of Coding Categories for the Network Perspective. (Author's own work).

Them	Contextual Factor (Coding category)	Description
		Instances in which the interviewees discussed...
Actor Positioning	Position Imbalance	who has the power in the supply chain
	Leadership	how leaders should guide and motivate others to achieve their goals
	Reputation	the importance of their reputation in terms of the perception of past, current and potential customers
	Brand Image	the importance of their image in terms of the public's opinion about the retailer's corporate actions
	Commitment	being committed to fulfil agreements
Activities	Planning activities	different planning activities for their business plan at the three levels
	Organizing activities	the link between people, resources and their work implementation at the three levels
	Controlling activities	how they work at the three levels in order to control and enhance their performance
	Exchange activities	activities where products, services, money and technologies can be exchanged at the three levels
Resources	Financial resources	either internal finance, shared finance between dyads or investor from their networks
	Information resources	resources from data, information, knowledge, experience
	Physical resources	tangible assets in order to achieve their goal (i.e. cooling vehicles to distribute products along the chain)
	Personnel resources	the processes the organization uses to recruit, manage and train their staff in order to improve them

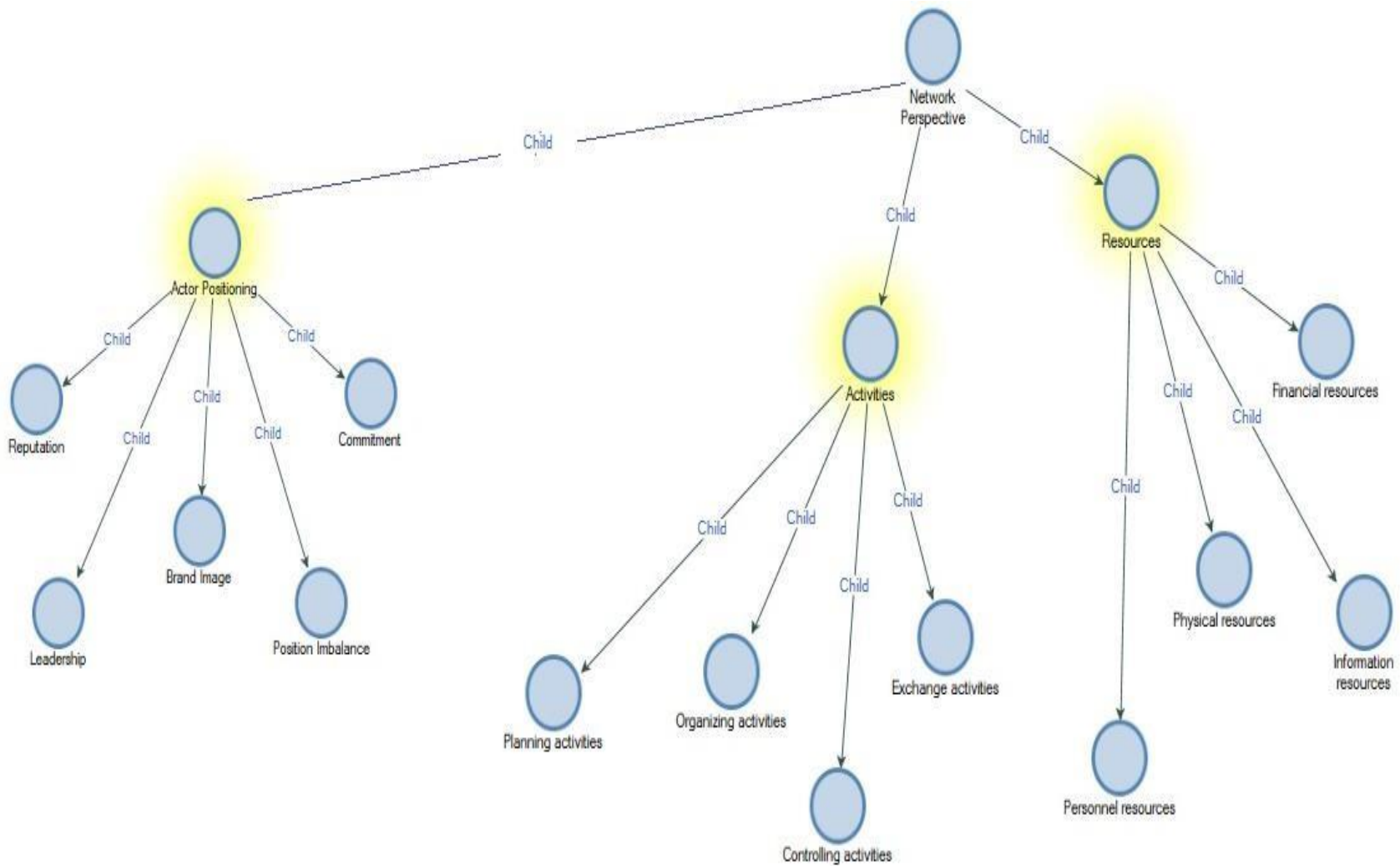


Figure 5.2: NVivo: Nodes for Network Perspective

Table 5.3: Description of Coding Categories for the Entrepreneurship Perspective (Author's own work).

Them	Contextual Factor (Coding category)	Description
		Instances in which the interviewees discussed...
Corporate Entrepreneurship	Stages of implementing innovative ideas	the process of conceiving, fostering, launching and managing an innovative idea
	Retailer supports innovation	how the retailer supports innovation, and how the retailer interacts with other actors in regards to supporting innovation
	Retailer provides resources and easy accessibility	resources the retailer provides such as financial, information, physical and personnel resources, and how the retailer interacts with other actors in regards to providing resources
	Retailer structures for an intrapreneurial environment	an environment structured by the retailer that allows mistakes and failures, in addition to, having multidisciplinary teams and extra time, and how the retailer interacts with other actors in regards to structuring an intrapreneurial environment
	Developing individual managers for corporate entrepreneurship	how and why developing individual managers into intrapreneurial catalyst is or is not important, and how the retailer interacts with other actors in regards to developing managers for CE
	Culture	external and/or internal cultural
Intrapreneurship	Are innovative and creative	intrapreneurs (internal employees) being innovative and creative and how the retailer interacts with other actors in this regards
	Firm takes the risk and responsibility	who takes the risk or responsibility when an innovative idea has been discussed to be implemented and how the retailer interacts with other actors in this regards
	Apply firms' management policies and structure	the importance of intrapreneurs applying the organizations' management policies and structure, and how the retailer interacts with other actors in regards to each others policies
	Use of firms' resources efficiently	that intrapreneurs should make use of the organizations' resources efficiently and how the retailer interacts with other actors in this regards
	fixed salary and Bonus/reward (if any)	intrapreneurs' salary and whether they receive a bonus/reward or not if the innovative idea is implemented
Entrepreneurial HR	Understand the whole context of their business	whether their HR understands the factors affecting their firm from different aspects including how and why decisions are made in order to achieve their business goals and how the retailer interacts with other actors in this regards
	Motivate and lead their employees	how and why their HR motivate and lead their employees and how the retailer interacts with other actors in this regards
	Driver of success	whether they consider their HR to be drivers of success and how the retailer interacts with other actors in this regards
	Entrepreneurial thinking	whether their HR think like entrepreneurs, think 'outside of the box' and/or are innovative and how the retailer interacts with other actors in this regards
	Good decision makers	whether their HR are good decision makers or not and how the retailer interacts with other actors in this regards

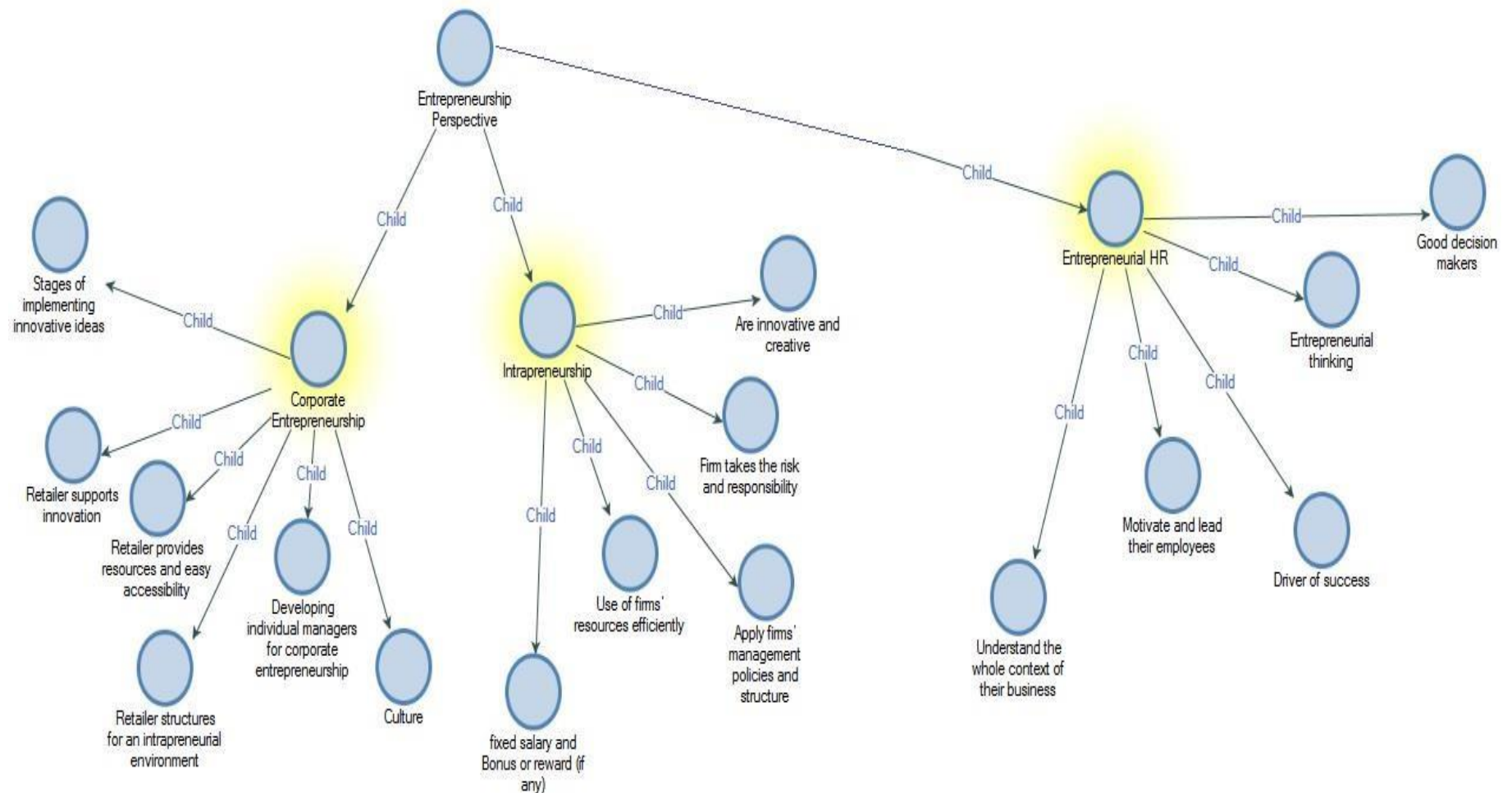


Figure 5.3: NVivo: Nodes for Entrepreneurship Perspective

Table 5.4: Description of Coding Categories for the Innovation Perspective (Author's own work)

Theme	Contextual Factor (Coding category)	Description
		Instances in which the interviewees discussed...
Product Innovation	Staying competitive	how and why staying competitive is important
	Seizing market opportunities	how and why seizing market opportunities is important
	Design for sustainability	designing practices for sustainability such as energy saving properties, recyclability, eco-friendly materials, product shelf-life and reducing raw material
	Packaging material	efficient packaging systems to reduce cost or using biodegradable packaging
	Eco-labeling	labelling products into certain environmental categories such as organic and recyclable
	Life-cycle analysis	the inventory process to manage product life cycle is to optimize inventory with consideration for inventory type related to customer demand
	Organic products	whether they have organic products and why
Process Innovation	Managing cost	cost saving in their production processes to attain economic benefits
	Adopting environmentally-friendly technologies	whether they adopt environmentally-friendly technologies and why
	To raise industry standards in line with environmental performance	how or why they should enhance their accepted requirements relating to environmental performance
	Response to external pressures and regulatory changes	responding to external demands such as customer demand, government regulations
	Handling waste	recycling, sewage, water and/or air pollution
	Logistics	efficient transportation networks and distribution channels
Organizational Innovation	Certificates	whether they are certified ISO 22000 and HACCP and why
	Stakeholders management	the contracts and communications (such as conference, meetings, exhibitions) between each other
	Engaging employees in developing a sustainable business	whether they engage their employees in developing a sustainable business and why
	Health and safety issues	health and safety measures and trainings
	Sustainability vision	designing and implementing visions based on sustainability
	Code of conduct	ethics and transparency
	Environmental policy	if they have environmental policy and how and why it is implemented

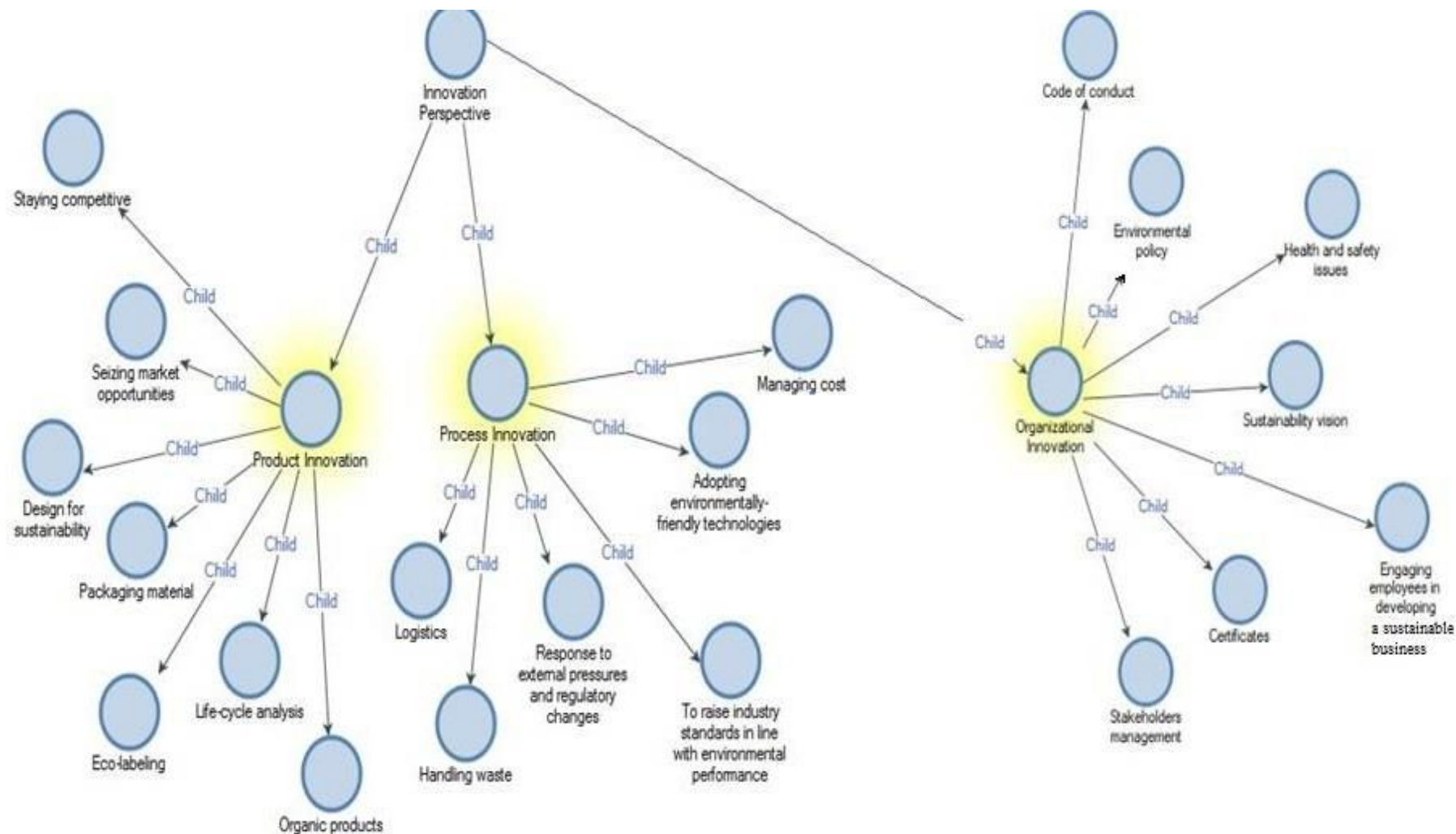


Figure 5.4: NVivo: Nodes for Innovation Perspective

Table 5.5: Description of Coding Categories for Sustainability Perspective (Author's own work)

Theme	Contextual Factor (Coding category)	Description
		Instances in which the interviewees discussed...
Environmental	Managing water	how and why they manage water
	Energy control	how and why they control energy use
	Recycling	discussed whether they recycle and how and why they recycle
	Environmental awareness	environmental awareness and its importance in food retail
Social	Trainings and workshops	different trainings and workshops provided for them
	Social events	different social events provided
	Diversity	whether they have diversity and why (i.e. diversity in products, diverse targeted customers)
	Community impact	different ways their retailer has an impact on the community such as career opportunities, product image, etc.
	Safe and fair labor conditions	whether they have safe and fair labor conditions and how the retailer interacts with other actors in this regards
	Employee benefits	their employee benefits, such as private medical insurance, social security, food coupons and monthly discounts
	Truthful product labeling and descriptions	what and why product labeling and descriptions is important to be truthful
	Customer health and safety	the importance of customer health and safety at their retail
Economic	Profitability and Tax	any tax and profit related issues they face in their retailer or are affected by from other actors in the supply chain
	Economic interests of external stakeholder	the economic interests of their different stakeholders
	Competitive procurement	why their procurement should be competitive and its advantages
	Customer satisfaction	how their retailer meets customer expectation and they discuss handling customer complaints, including business to business
	Efficient production and packaging	discussed efficient production and packaging and its importance

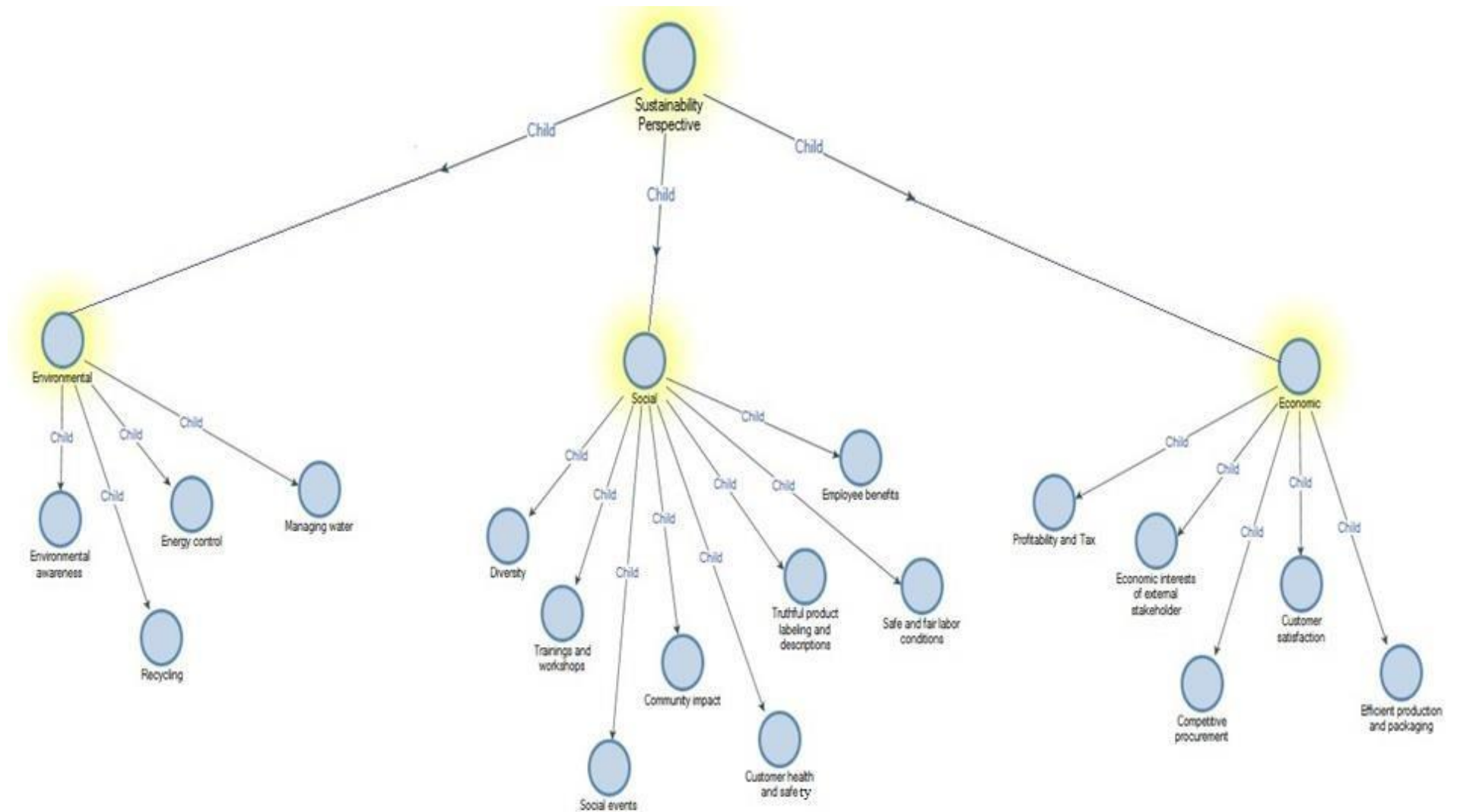


Figure 5.5: NVivo: Nodes for Sustainability Perspective

5.3 Case Study Findings

The fieldwork for all six cases was conducted between January to July 2019 in Jordan. The semi-structured interviews are based on snowball and purposive sampling. First, snowball sampling is applied in the pilot case (case 2) based on the HR experts' recommendations for managers at R2. After having successful findings from the identified managers in case 2, purposive sampling is applied in the other cases to reach the same type of managers with the support of their HR experts. Each case will have demographics, insights on SOI in food SCM from the perspective of network, entrepreneurship, innovation and sustainability at all three levels (actor, dyad and network), observations and secondary data findings. This supported the researcher to capture preliminary insights as well as to explore and examine the phenomenon and the research enquiry.

5.3.1 Case Study 1- Food Retailer (R1)

R1 is an international retailer, which provides customers with a variety of food products, household products and garden products, at high quality. R1 is considered to be one of the largest hypermarket and supermarket chains in the world. The brand was launched in the region in 1995, which is the exclusive franchisee to operate R1 in 38 countries across the Middle East, Africa, Asia and Europe. R1 employs over 2,000 people in Jordan. R1 sells local beef and imports beef from three countries: Brazil, South Africa and Australia. R1 is contracted with 12 different yogurt industries as well as three delicatessen companies, which all provide them with yogurt and other dairy products. R1 has their own distribution center (DC) located in Amman. The beef they purchase from a Central Amman Slaughterhouse is transported to their distribution center and later distributed to all of their branches depending on the orders. For more than three decades, the mother company of R1 based outside of Jordan has been applying a sustainable development policy, which guides all their activities on a day-to-day basis for all their branches throughout the world. In the year of 2010, R1 in Jordan acknowledged the true importance of sustainability and innovation, and from that time have enhanced their sustainability and innovation goals more than before. Table 5.6 provides demographics on the five interviewees for case study 1, R1.

Table 5.6: Demographics of Interviewees-Case Study 1 (Author's own work)

Characteristics	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
Job Title in R1	Fresh Food Manager (FFM1)	Product Development Manager (PDM1)	Supply Chain Manager (SCMr1)	Head of Sustainable Sourcing (HSS1)	Hygiene and Safety Manager (HSM1)
Age	45-55	25-35	35-45	25-35	35-45
Gender	Male	Female	Male	Female	Male
Education Level	BSc	BSc	DBA	MSc	BSc
Country of Education	Jordan	Jordan	UK	UAE	Jordan
Years of Experience	21	9	15	11	12

R1's aim can be summarized as “doing a good job” in “1) Limiting the use of resources by fighting against all forms of waste, 2) Respecting the planet when purchasing by encouraging biodiversity and 3) Contributing to society by supporting employees and partners” (R1 Website, 2018).

5.3.1.1 Insights on SOI in food SCM for Case Study 1

The five interviews were conducted in May 2019 in Jordan. The majority of the interviewees highlighted their awareness of food SCM as supported by SCMr1, “Food SCM is a network of vertical and horizontal relationships between us as a focal retailer and other members from raw material suppliers until the market. Our retailer is looking to jointly manage product, information and financial flow for better innovative solution and sustainability development in this changeable food chain.” Based on the results found, the interviewees presented sufficient understanding of SOI in food SCM. This is explained by PDM1 who stated, “We often apply innovations driven towards sustainability as an umbrella which includes new ideas, product development and entrepreneurial activities for better benefits in our markets, our employees and to be an environmentally friendly retailer across our chain members in Jordan.”

The following are findings on the key insights from the key perspectives: **network, entrepreneurship, innovation and sustainability** at all three levels of actor, dyad and network, on SOI in food SCM.

a) Network

All the interviewees provided relevant discussions on the network concept and have good knowledge of it. They emphasized the significance of implementing network, either actor positioning, activities or resources. As FFM1 explained, “I believe we, R1, are involved very well in our network, when we have direct and indirect relationships with different members of our supply chain.” Key representative quotations linked to each contextual factor of the themes for network are provided in Table 5.7.

Actor: From analyzing the five transcripts for R1, five contextual factors emerged. These are position imbalance, leadership, reputation, brand image and commitment. All the interviewees mentioned **commitment** within the retailer and other members in the SC. The majority of the interviewees discussed the importance of their **reputation** and **brand image**. Several interviewees believe that **leadership** is important in R1. Most of the interviewees discussed their retailers' **position imbalance** as an important function across the food SC.

Activities: Four contextual factors emerged from analyzing the five transcripts for R1. These are planning, organizing, controlling and exchange activities. The interviewees all discussed different activities they share within their organization and with other actors in the SC. All the interviewees discussed **planning activities**. The majority of the interviewees mentioned applying **organizing activities**. Some interviewees explained their **controlling activities** at R1. The overall responses highlighted **exchange activities** applied.

Resources: From analyzing the five transcripts for R1, four contextual factors emerged. These are financial, information, physical and personnel resources. All the interviewees discussed the importance of **financial resources** they need at all three levels. The majority of the interviewees discussed their need of **information resources**. Several interviewees explained the importance of **physical resources** needed in order to facilitate information flow. All the interviewees discussed their **personnel resources** at their retailer.

Table 5.7: Network Perspective-Themes, Contextual Factors and Representative Quotations (Case 1)

Theme	Contextual Factor (Coding category)	Representative Quotations
Actor Positioning	Position Imbalance	HSS1 explained, <i>"I believe that the retailer is power in the supply chain. For example, we have knowledge in different things and we can help provide other members in the supply chain with this knowledge to enhance themselves."</i>
	Leadership	HSM1 said, <i>"Having strong leadership at R1 is important as it can achieve our retailers' goals, maximize productivity, and so on."</i>
	Reputation	FFM1 said, <i>"I believe to maintain a good reputation and image is vital in surviving in such a competitive market. We always try to improve our reputation and image for example to value our employees, to express our company values, building authenticity between our stakeholders and R1 etc."</i>
	Brand Image	
	Commitment	SCMr1 explained, <i>"I believe it is important for the employees to be committed to their work here at R1. Commitment between us and other members in the supply chain is essential to maintain as we build trust and relationships."</i>
Activities	Planning activities	SCMr1 highlighted, <i>"One of our key processes when planning is to define goals to identify our resources in order to achieve our targets in our business plan."</i>
	Organizing activities	HSM1 explained, <i>"We have joint planning with our suppliers to organize activities where staff from both sides attends trainings and workshops on different topics such as safety and hygiene."</i>
	Controlling activities	PDM1 said, <i>"We work with our network, for instance the government bodies, to measure our overall performance and receive advice on how to improve ourselves."</i>
	Exchange activities	FFM1 explained, <i>"We have an ERP system to link certain data within our organization such as records, prices and demand for products as yogurt or beef."</i>
Resources	Financial resources	HSM1 said, <i>"We need different kinds of resources at the retailer to achieve our activities, one is financial resources as it is very important. We have online shopping for everything except fresh food such as meat, dairy, fruits, and vegetables as these items would need refrigerated vehicles for distribution. Our current study is to expand online shopping to include fresh foods. This will be</i>

		<i>implemented as soon as we can get financial support to afford the refrigerated vehicles.”</i>
	Information resources	<i>SCMr1 explained, “We need information resources in order to exchange information within our retailer as well as information between us and other members of our supply chain. For example we have the ERP system, Enterprise Resource Planning System, which helps us manage and exchange information.”</i>
	Physical resources	<i>FFM1 said, “Having physical resources at the retailer for our partners is important. For example we have meeting facilities for when government bodies visit us regarding our certificates, inspections, regulations, etc. [...]”</i>
	Personnel resources	<i>PDM1 explained, “Our HR has good criteria of selection for qualified employees where they include innovation process. We even collaborate with chain members like our government bodies to exchange experiences and knowledge.”</i>

b) Entrepreneurship

The overall responses from the interviewees provided relevant discussions on the concept of entrepreneurship based on their knowledge and empirical experiences. They highlighted the importance of implementing entrepreneurship at their retailer in order to succeed. In consistence with this, PDM1 said, *“I believe that entrepreneurship is a necessity in R1. In order for us to come up with innovative ideas and to be a successful business we need to think and behave like an entrepreneur.”* Key representative quotations linked to each contextual factor of the themes for entrepreneurship are provided in Table 5.8.

Corporate Entrepreneurship (CE): Six contextual factors emerged from analyzing the five transcripts for R1. These are stages of implementing, retailer supports innovation, retailer provides resources and easy accessibility, retailer structures for an intrapreneurial environment, developing individual managers for corporate entrepreneurship and culture. The interviewees all discussed **stages the retailer goes through to implement innovative ideas** from their employees. A majority of the interviewees emphasized that R1 **encourages their employees to initiate innovative ideas** and that R1 **provides sufficient resources and easy accessibility**. Some interviewees were aware that R1 **structures an intrapreneurial environment**. A few interviewees discussed that R1 tries to **foster individual managers for corporate entrepreneurship**. Some interviewees discussed the main challenge for implementing CE is the influence of the external **culture**.

Intrapreneurship: Five contextual factors for intrapreneurship emerged from analyzing the five transcripts for R1. These are firm takes the risk and responsibility, are innovative and creative, apply firm’s management policies and structure, use of firms’ resources efficiently, and fixed salary plus bonus/reward if any. The majority of interviewees discussed that having intrapreneurs within the organization is important and that they need to be **creative and innovative**. The overall responses

from the interviewees showed solid understanding that they have to **follow the organizations' management policies and structure** when constructing an innovative idea and to **efficiently use the organizations' resources**. All the interviewees mentioned that if an innovative idea was to be implemented the **organization takes the risk and responsibility**. Some interviewees mentioned that if they did bring forward an innovative idea and the organization decided to implement then they would **receive a reward or bonus, other than his/her fixed salary**.

Entrepreneurial HR: For this theme, five contextual factors emerged from analyzing the five transcripts for R1. These are HR understand the whole context of their business, motivate and lead their employees, drivers of success, entrepreneurial thinking and good decision makers. The majority of the interviewees agreed that their **HR understand the whole context of their business**. Some interviewees discussed the importance of **HR motivating and leading their employees** and that **HR are drivers of success**. Several interviewees explained the significance of **HR thinking like entrepreneurs** and being innovative and **good decision makers**.

Table 5.8: Entrepreneurship Perspective-Themes, Contextual Factors and Representative Quotations (Case1)

Theme	Contextual Factor (Coding category)	Representative Quotations
Corporate Entrepreneurship	Stages of implementing innovative ideas	FFM1 said, <i>"When an employee has an innovative idea, they inform their manager and the stages begin. [...] The retailer goes through several stages of considering, developing and managing an innovative idea."</i>
	Retailer supports innovation	HSM1 said, <i>"We are encouraged by our organization to come up with innovative ideas especially in terms of sustainability. [...]. They provide us sufficient resources and easy access to them in order to shape our innovative idea."</i>
	Retailer provides resources and easy accessibility	
	Retailer structures for an intrapreneurial environment	HSS1 stated, <i>"I believe our work environment has a good entrepreneurial atmosphere that allows mistakes and failures. There is no fear for our employees to talk to their manager about an innovative idea. And we have a chance to work in multidisciplinary teams to work on something innovative. [...]. We really do provide a good entrepreneurial atmosphere, for example, once a year our organization emails all employees a form, which they write their innovative idea or ideas, and submit it. There is an annual competition between all our employees in all our branches in Jordan, the top two winners from each country will go to our mother HQ outside of Jordan to present their idea and they receive a reward. The innovative ideas will later be implemented."</i>
	Developing individual managers for corporate entrepreneurship	PDM1, <i>"One of the tactics our organization does is to choose the right people. They choose suitable managers they believe are self-motivated, a team player, tries to solve problems and is a good role model for their department to develop them for entrepreneurship within the organization."</i>
	Culture	HSS1 said, <i>"Being an international retailer, we face challenges with the cultural differences between our branches abroad and Jordan, especially with new ideas."</i>

Intrapreneurship	Are innovative and creative	PDM1 said, <i>“I believe that having employees with the mindset of entrepreneurs in the organization is very important and they need to be creative and innovative. Having these entrepreneurs help us to better ourselves as an organization and our relationships with other organizations we work with.”</i>
	Firm takes the risk and responsibility	FFM1 said, <i>“When an employee builds an innovative idea and goes through the stages of implementation, any risk or responsibility is all on R1.”</i>
	Apply firms’ management policies and structure	HSM1 explained, <i>“Though we are pushed to be innovative and creative we still have to abide by the organizations’ management policies and structure. [...]. We are always reminded to efficiently use the organizations’ resources, like the trainings provided outside of Jordan on hygiene and safety issues.”</i>
	Use of firms’ resources efficiently	
	Fixed salary + Bonus/reward (if any)	HSS1 explained, <i>“When an innovative idea has been approved of being implemented the employee or employees receive either a bonus other than their fixed salary, or they receive a reward such as discounts or a paid leave. For example, during closing hours our refrigerators have curtains that come down from the top to keep the cooling of the fridge consistent. This innovative idea was from one of our maintenance employees; he went through a process and later his idea was implemented. The employee received a reward.”</i>
Entrepreneurial HR	Understand the whole context of their business	HSM1 explained, <i>“Our HR managers are really hands on in our organization and understand our entire environment.”</i>
	Motivate and lead their employees	HSS1 explained, <i>“Some of the HR managers here lead and motivate us to do our jobs consistently, to enjoy our work, to be innovative, to maintain our stay green concept and so much more. I really believe some of them are drivers of success for our organization.”</i>
	Driver of success	
	Entrepreneurial thinking	SCMr1 stated, <i>“In one of our meetings a week ago, I realized that one of the reasons our recent sustainability projects was successful was because one of our HR managers was innovative, thought outside of the box and made a really good decision.”</i>
	Good decision makers	

c) Innovation

All the interviewees provided relevant discussion on innovation based on their knowledge and experience. They underlined the positive influence of innovation within their retailer. As PDM1 explained, *“I believe that our innovative ideas are what keep us thriving in our competitive market and seizing market opportunities.”* Key representative quotations linked to each contextual factor of the themes for innovation are provided in Table 5.9.

Product Innovation: Seven contextual factors emerged from analyzing the five transcripts for R1. These are staying competitive, seizing market opportunities, design for sustainability, packaging material, eco-labeling, life-cycle analysis and organic products. The overall responses discussed the importance of **staying competitive** and **seizing market opportunities**. Several interviewees explained the significance of **designing practices for sustainability** such as energy saving properties, recyclability, eco-friendly materials, product shelf life, and reducing raw material. Some

interviewees discussed the inventory process to manage **product life cycle** is to optimize inventory with consideration for inventory type related to customer demand. The majority of the interviewees discussed efficient **packaging systems** to reduce cost or using biodegradable packaging. Most of the interviewees mentioned **labelling their products into certain environmental categories** such as organic and recyclable. All the interviewees explained they provide **organic products** at R1.

Process Innovation: Six contextual factors for process innovation emerged from analyzing the five transcripts for R1. These are managing cost, adopting environmentally friendly technologies, to raise industry standards in line with environmental performance, response to external pressures and regulatory changes, handling waste and logistics. The overall responses highlighted the importance of **responding to external demands** such as customer demand and government regulations. Several interviewees explained they try **to raise their industry standards in line with environmental performance** and gaining **economic benefits**. The majority of interviewees discussed how they **handle waste**, such as recycling, water, sewage and air pollution. The majority of the interviewees highlighted their importance to **adopting environmentally friendly technologies**. The majority of the interviewees emphasized **efficient transportation networks and distribution channels**.

Organizational Innovation: For this theme, seven contextual factors emerged from analyzing the five transcripts for R1. These are certificates, stakeholders' management, engaging employees in developing a sustainable business, health and safety issues, sustainability vision, code of conduct and environmental policy. The overall responses from the interviewees agreed that R1 **engages its employees in developing a sustainable business**. The majority of the interviewees mentioned **health and safety issues** such as measures and trainings. The majority of the interviewees discussed their **stakeholders' management** such as the contracts and communications between them. The overall responses from the interviewees discussed earning **certificates** such as ISO 22000 and HACCP. Several interviewees discussed designing and implementing **visions based on sustainability**. Some interviewees discussed **code of conduct** such as ethics and transparency. A few discussed **environmental policies** implemented in the organization.

Table 5.9: Innovation Perspective-Themes, Contextual Factors and Representative Quotations (Case 1)

Theme	Contextual Factor (Coding category)	Representative Quotations
Product Innovation	Staying competitive	FFM1 said, “[...] <i>I believe our meat product differentiation is innovative as not all our competitors have a variety of meat like us, we have local beef and we import from many countries. [...] We offer these products at an acceptable price. I think staying competitive is important to satisfy our market diversity and increase our sales growth. We always conduct market analysis to identify customer needs and their satisfaction, which help us to find and seize any opportunities.</i> ”
	Seizing market opportunities	
	Design for sustainability	HSM1 explained, “ <i>When planning new ideas for sustainability we really need to study the topic, if it is feasible, short and long term results, design it, everything! We did this when we started planning to implement solar panels, as it is environmentally friendly and will cut our costs. Hopefully we will start implementing them by 2020.</i> ”
	Packaging material	HSS1 highlighted, “[...] <i>we are searching for an alternative to our meat trays and we came across biodegradable trays now our R&D are studying this issue with our meat suppliers and packaging company.</i> ”
	Eco-labeling	SCMr1 said, “ <i>When we decided to contract with specific yogurt industries one of our many criteria was if they provide organic yogurt and that is was labeled organic. Another important criterion was that the yogurt and the other dairy products containers are labelled recyclable if they are. An old version of one of the containers for the yogurt container was recyclable but was not labelled, we contacted that yogurt industry and informed them, they took immediate action to improve their newest version of their labelling that included it is recyclable</i> ”.
	Life-cycle analysis	PDM1 said, “ <i>Our R&D always does research to identify the market demand in order to manage our inventory in relation both to our new and current products.</i> ”
	Organic products	FFM1 said, “ <i>Most of the yogurt industries we do business with provide us with organic yogurt and other dairy products. It is important to us as a retailer to provide organic products to our customers.</i> ”
Process Innovation	Managing cost	HSS1 highlighted, “ <i>We are always trying to raise our standards especially in regards to the environment; by doing this, the economic benefits as well. For example, I believe implementing innovative technologies, like the LED lighting that we installed at all our branches was a great decision as we improved our environmental performance as well as cut our costs, some of our chain members are also in the process of implementing LED lights for environmental reasons and to cut costs.</i> ”
	To raise industry standards in line with environmental performance	
	Adopting environmentally-friendly technologies	PDM1 said, “ <i>I believe it is highly significant for our retailer to always keep an eye out for any innovative technologies we can adopt especially environmentally friendly ones.</i> ”
	Response to external pressures and regulatory changes	FFM1 explained, “ <i>When there are external pressures we try to respond quickly, wisely and innovatively. [...] When we receive regulations from government bodies we need to begin the process of implementing them.</i> ”
	Handling waste	HSM1 said, “ <i>We have a contract with an organization that collects our recyclable waste and send it to be recycled. We segregate our own waste into cardboard, paper, plastic, food waste and general waste. Then they come to collect it and everything is sent to be recycled depending on the product.</i> ”
	Logistics	SCMr1 said, “ <i>We have our own DC, which we invested in its location, design and equipment to facilitate the daily demand to all our branches and provide</i>

		<i>efficient time of delivery. Since we are working with fresh foods such as beef, it must be in temperature controlled distribution centers and trollies, safely and quickly moved and ready to be distributed to our branches.”</i>
Organizational Innovation	Certificates	<i>FFM1 explained, “It was not easy but with hard work and determination, we are certified both HACCP (Hazard Analysis and Critical Control Point) and ISO food 22000. We try to stay up-to-date with the relevant certificates we can work on to improve our organization.”</i>
	Stakeholders management	<i>SCMr1 said, “We have workshops for our employees internally and externally, we arranged several workshops with some government bodies.”</i>
	Engaging employees in developing a sustainable business	<i>HSS1 said, “A month ago we had a workshop on sustainability in our organization; we frequently have trainings and workshops on several sustainability issues. During these workshops and trainings they motivate us to be innovative, especially something that could help our environment or even cut our costs, and in return we get a reward.”</i>
	Health and safety issues	<i>HSM1 explained, “Our organization structures regulations on health and safety issues. As an international retailer, we have regulations on health and safety issues from both the Jordanian government bodies and our international HQ. We regularly have trainings and workshops about different health and safety issues.”</i>
	Sustainability vision	<i>PDM1 said, “At R1 we work towards sustainability based visions and being able to implement them. You can see our vision and mission statement on our website.”</i>
	Code of conduct	<i>HSM1 explained, “We contract with beef or yogurt suppliers if they have health inspection certificate, records kept, licensing authority of practice from the Ministry of Health. If they do not have them then we do not sign a contract with them even if they offer us low-priced meat because that is just unethical.”</i>
	Environmental policy	<i>HSS1 explained, “We have environmental policies at R1 with relations to managing environmental issues of our operations and committing to continuous improvements of environmental issues such as recycling and pollution.”</i>

d) Sustainability

The overall responses from the interviewees provided relevant discussions on the concept of sustainability based on their knowledge and empirical experiences. They highlighted the importance of implementing sustainability in either environmental, economic or social at their retailer. In consistence with this, HSS1 said, *“We acknowledge the importance of sustainability at R1, we try our best at being environmentally friendly, contributing to society and taking into consideration the economics.”* Key representative quotations linked to each contextual factor of the themes for sustainability are provided in Table 5.10.

Environmental: From analyzing the five transcripts for R1, four contextual factors emerged. These are managing water, energy control, recycling and environmental awareness. The majority of the interviewees discussed the importance of **controlling their use of energy**. All the interviewees underlined the significance of **environmental awareness** at R1. The majority of the interviewees highlighted their execution of **recycling**. Some interviewees explained how R1 **manages water**.

Social: Eight contextual factors emerged from analyzing the five transcripts for R1. These are training and workshops, social events, diversity, community impact, safe and fair labor conditions, employee benefits, truthful product labeling and descriptions, and customer health and safety. The overall responses discussed social sustainability applied at R1. All the interviewees highlighted the different **trainings and workshops** provided at R1 for their employees. The majority of the interviewees mentioned that R1 organizes **social events** for its employees. Some interviewees discussed the **safe and fair labor conditions** at R1. The overall responses mentioned **employee benefits** provided to them at R1. Some interviewees mentioned the importance of **product labeling and descriptions to be truthful**. The majority of the interviewees highlighted **diversity** within R1. Several interviewees mentioned the **health and safety of their customers**. Some interviewees discussed R1's **impact on the community**.

Economic: From analyzing the five transcripts for R1, five contextual factors emerged. These are tax, economic interests of external stakeholder, competitive procurement, customer satisfaction, and efficient production and packaging. All the interviewees discussed **profitability and tax** issues in Jordan. The majority of the interviewees discussed the importance of **customer satisfaction**. Several interviewees explained the significance of **competitive procurement** at R1. Some interviewees highlighted the importance of efficient **production and packaging**. The majority of the interviewees discussed the **economic interests of their external stakeholders**.

Table 5.10: Sustainability Perspective- Themes, Contextual Factors and Representative Quotations (Case 1)

Theme	Contextual Factor (Coding category)	Representative Quotations
Environmental	Managing water	HSM1 said, <i>"We try to reduce the use of water, such as having hand detectors on taps and quarter-turn isolation valves for the taps used for cleaning; we track our water use and check for leaks. Providing awareness for our employees on water usage is important and even made a commitment of using less water in our environmental policy."</i>
	Energy control	SCMr1 said, <i>"We have LED lighting and sensor lighting in our offices at all our branches and we are now in the process to implement solar panels. I believe it was a good decision as we have better control of our energy, we improved our environmental performance and even cut our costs."</i>
	Recycling	FFM1 explained, <i>"Unfortunately, in Jordan we have no municipal recycling offered, so we contracted with recycling companies where they come to R1 to collect our segregated recyclable waste."</i>
	Environmental awareness	HSM1 said, <i>"We frequently have trainings and workshops where we discuss environmental issues and how we as a retailer can improve this."</i>
Social	Trainings and workshops	FFM1 said, <i>"We are provided with trainings and workshops about several topics such as recycling and hygiene and safety issues. We have a butchery school which we provide lectures and practical work for our employees."</i>

	Social events	PDM1 explained, “ <i>R1 arranges social events regularly for its employees, such as football tournaments, field trips, barbeques, birthdays, etc. These events are fun and we get to enjoy the company of our co-workers outside of work.</i> ”
	Diversity	FFM1 explained, “ <i>We try to support a culture that matches customer values by offering products that address shoppers’ diverse needs and we are even attracting new customers at the same time.</i> ”
	Community impact	SCMr1 explained, “ <i>I believe we have an impact on our community, for example, we have a range of career opportunities. I believe we influence our dyad and network members as well such as to establish their brand, to prove their credibility, etc. we care for our employees and their safety.</i> ”
	Safe and fair labor conditions	SCMr1 explained, “ <i>Our labor conditions at R1 are safe and fair. For example, wages are given fairly depending on your workload, experience, education, etc. The conditions are safe and we have health and safety measures us the employees and the retailer take to keep in line with safety.</i> ”
	Employee benefits	HSS1 stated, “ <i>One of the best parts in working at R1 is the benefits we get, such as private medical insurance, social security, food coupons and monthly discounts when we purchase at R1. They really do care for their employees.</i> ”
	Truthful product labeling/descriptions	HSM1 said, “ <i>It is important that products are labeled and descriptions are true so a good reputation is kept. We don’t want customers to not trust us anymore.</i> ”
	Customer health and safety	PDM1 discussed, “ <i>The health and safety of our customers is very important to us, we do our best to ensure this. For example, we identify any hazards and try to eliminate them. We also provide suitable lighting, ventilation, heating, a clean environment, clean facilities, and safe passageways to avoid slipping hazards.</i> ”
Economic	Profitability and Tax	HSS1 explained, “ <i>We always manage our profits and have meetings with government bodies in regards to tax issues in order to keep customer retention.</i> ”
	Economic interests of ext. stakeholder	FFM1 said, “ <i>We have stakeholders and they are interested in our business. For example, our customers want us to provide quality products at sensible prices.</i> ”
	Competitive procurement	HSM1 said, “ <i>Our procurement manages the selection, negotiation, and sourcing activities of products and services. I believe it is important for our procurement to make strategical decisions to stay competitive in the market.</i> ”
	Customer satisfaction	HSS1 said, “ <i>We at R1 care about our customers’ satisfaction. We try to understand our customers and their needs. We also created a customer satisfaction survey.</i> ”
	Efficient production and packaging	SCMr1 explained, “ <i>We always try to ensure efficient production and packaging, for example, to minimize waste with reusable packaging. We always update our equipment and technology in order to have efficient production and packaging; we work with our dyad and network members on this issue as well.</i> ”

5.3.1.2 Observations for Case Study 1

Observations were conducted in May 2019 at the actor (R1), dyad level (a Central Slaughterhouse in Amman) and at network level (a beef distributor company). Table 5.11 presents key findings at each level in the SC of R1. The findings from the observations are consistent with the findings in the interviews. For each observation the case observation protocol (Appendix H) was followed as it was in line with the case study agenda in order to support the main primary data (interviews). This observation protocol consists of three observations and three tours at actor, dyad and network levels. Discussions on the meeting and tours were based on the theoretical perspectives, themes and contextual factors identified from the case study interviews (see Section 3.5.3.3).

Table 5.11: Observations for SC of R1-Case Study 1 (Author's own work).

Observations for SC of Retailer 1			
Actor Level	Meeting at R1	Duration	50 minutes
		Observer	Participant observer
		Organized by	HR Manager at R1
		Topic	Building innovation
		What was revealed?	R1 encourages and supports its employees to be innovative and they are given a good working environment to build innovation by providing them with multidisciplinary teams and time to brainstorm. It was confirmed that as R1 is an international food retailer one of their challenges of implementing innovative ideas is the cultural differences between their branches abroad and their Jordanian branches.
		Perspective/ Theme/Contextual factor covered	Entrepreneurship- Corporate Entrepreneurship Retailer supports innovation/ Retailer structures for an intrapreneurial environment/ Culture
	A tour at R1	Duration	30 minutes
		Observer	Participant observer
		Organized by	HR Manager at R1
		Topic	The researcher saw the butchery, beef and yogurt refrigerators, their distribution center, packaging and hygiene and safety signs.
		What was revealed?	The employees discuss different innovative ideas together for problems they face.
		Perspective/ Theme/Contextual factor covered	Entrepreneurship- Corporate Entrepreneurship- Retailer structures for an intrapreneurial environment/ Network – Resources – Physical Resources Innovation- Organizational Innovation -- Health and safety issues
Dyad Level	A meeting at a Central Slaughterhouse	Duration	45 minutes
		Observer	Non-participant observer
		Organized by	HR Manager and the Procurement Manager at R1
		Topic	The veterinarian's role and hygiene and safety issues that R1 regularly inspects
		What was revealed?	R1 is aware of the veterinarian's role. They know the entire process the cattle goes through such as how it is slaughtered, the medical check by the veterinarian, the equipment used, hygiene and safety issues, the refrigerators at the slaughterhouse, the refrigerated vehicles used to transport the beef and animal welfare.
		Perspective/ Theme/Contextual factor covered	Innovation- Organizational Innovation -- Health and safety issues Network- Resources – Physical resources
	A tour at Central Slaughterhouse	Duration	35 minutes
		Observer	Non-participant observer
		Organized by	HR Manager and the Procurement Manager at R1
		Topic	The researcher saw the slaughter room, refrigerators, the preparation room, hygiene and safety signs, certificates, stamps, and the refrigerated vehicles.
		What was revealed?	That there is good relationship, collaboration and commitment between R1 and Central Slaughterhouse, where they provide information to each other.
		Perspective/ Theme/Contextual factor covered	Network- Actor Positioning – Commitment Resources – Information and Physical resources Innovation- Organizational Innovation -- Health and safety issues
Network Level	A meeting with beef distributor	Duration	40 minutes
		Observer	Non-participant observer
		Organized by	HR Manager at R1
		Topic	Efficient transportation networks and distribution channels for all branches
		What was revealed?	They strategically plan the best routes for distribution considering different factors such as traffic, weather, time and priority.
		Perspective/ Theme/Contextual factor covered	Network- Activities – Planning activities Innovation – Process Innovation -- Logistics
	Tour beef distributor	Duration	40 minutes
		Observer	Non-participant observer
		Organized by	HR Manager at R1
		Topic	The researcher saw the beef distributor's warehouse and their refrigerated vehicles.

	What was revealed?	There is good collaboration, relationship and commitment between R1 and the beef distributor. One of the challenges the beef distributor and R1 face is that they have the ERP system, Enterprise Resource Planning System, but the beef distributor does not know how to use it correctly hence this revealed a need of knowledge for this system in order to exchange information and data efficiently.
	Perspective/ Theme/Contextual factor covered	Network- Activities – Exchange activities Network- Actor Positioning – Commitment

* *Participant Observer*: the researcher would participate with the participants.

* *Non-Participant Observer*: the researcher would not participate with the participants.

5.3.1.3 Secondary Data for Case Study 1

Archival records and documents were collected and analyzed; Table 5.12 presents key findings at R1. The examples provided below are information chosen in line with the theoretical perspectives, themes and contextual factors identified from the case study interviews. It was evaluated that the secondary data is in consistent with the findings in the interviews and observations in R1.

Table 5.12: Secondary Data for R1-Case Study 1 (Author's own work).

Secondary Data for Retailer 1	
Date: Researcher collected data	May 2019
Source: Access to Archival Records Document Data	<i>Documents</i> : from Websites of the retailer, Government websites of sustainability projects and reports <i>Archival Records</i> : Retailer project surveys (2018), Market Reports (2018) and Meeting Minutes (2019)
Key example of a finding: ▪ Meeting Minutes (2019) ▪ Website of R1 (2019)	CEO of R1 signed with Yellow Door Energy in order to supply solar power to all branches of R1. One of R1's sustainability projects covered environmental, social and economic sustainability. In consistence with this, Country Manager for R1 said, "Sustainability plays an important role in our business as illustrated by our Net Positive strategy, which aims to over compensate our water consumption and carbon emissions resulting in a positive corporate footprint by 2040. The BOOT solar agreement will prove not only integral to helping us achieve our goals but also halving our energy costs, allowing us to pass the savings on to our loyal customers across Jordan" (Website of R1, 2019).
Perspective/Theme/Contextual factor covered	Sustainability- Environmental – Energy Control and managing water Innovation - Product Innovation - Design for sustainability Innovation - Process Innovation - Adopting environmentally-friendly technologies and Managing cost/ Organizational Innovation - Sustainability vision
Key example of a finding: ▪ Market Reports (2018) ▪ Meeting Minutes (2019)	R1 advertises its products and promotions via brochures, billboards, TV commercials, SMS to its loyal customers, social media such as Facebook and Twitter. R1 uses a blended method of advertisement to target different segments (e.g. age) from the society.
Perspective/Theme/Contextual factor covered	Sustainability- Social – Diversity
Key example of a finding: ▪ Report on Website of Jordanian Ministry of Environment (MoE) (2018)	The production of non-biodegradable plastic bags will be banned in Jordan. Non-biodegradable plastic bags cause harm to the environment such as the livestock sector. They also may cause clogged rainwater drainage systems. The Jordanian Ministry of Environment will coordinate with the commerce sector and the plastic bag industry to implement this ban. They noted they will not tolerate any violation of the Jordanian environment protection policies. All food retailers and their supply chains have been informed and expected to respond and to include this in their organizations environmental policies.
Perspective/Theme/Contextual factor covered	Innovation – Product Innovation - Packaging material Innovation – Process Innovation - External pressures and regulatory changes Innovation – Organizational Innovation - Environmental policy Sustainability- Economic - Efficient production and packaging

5.3.2 Case Study 2 – Food retailer (R2)

R2 is an international retailer, which provides customers with a great variety of food products, household products and garden products. The brand was launched in the region in 1981. Now there are 65 stores operating in five countries. R2 Jordan operates 11 service stores, two wholesale centers and three R2 Express convenience stores and is engaged in expanding more. The newest branch for R2 is located near a university, which includes bookstores, restaurants, money exchange shops and other services aimed especially for students. R2 provides a variety of exclusive products from around the world, due to the demand of their customers; hence, R2 sells local beef and imports beef from different countries. R2 is contracted with 10 different yogurt industries as well as two delicatessen companies, which all provide them with yogurt and other dairy products. The beef they purchase from a Central Amman Slaughterhouse is transported to their branches depending on the orders, while the imported beef is transported to their wholesale centers and later distributed. R2's goal can be summarized, *"Our goal is to maintain the highest standards of sustainability, workplace excellence and community engagement"* (R2 Website, 2018). In the year of 2011, R2 in Jordan acknowledged the true importance of sustainability and innovation, and from that time have enhanced their sustainability and innovation goals more than before. Table 5.13 provides descriptions on the five interviewees for case study 2, R2.

Table 5.13: Demographics of Interviewees-Case Study 2 (Author's own work)

Characteristics	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
Job Title in R2	Fresh Food Manager (FFM2)	Product Development Manager (PDM2)	Supply Chain Manager (SCMr2)	Head of Sustainable Sourcing (HSS2)	Hygiene and Safety Manager (HSM2)
Age	35-45	25-35	25-35	25-35	25-35
Gender	Male	Male	Male	Male	Female
Education Level	MSc	BSc	BSc	BSc	MSc
Country of Education	USA	Jordan	USA	Jordan	Jordan
Years of Experience	13	10	8	7	9

5.3.2.1 Insights on SOI in food SCM for Case Study 2

The five interviews were conducted in January 2019 in Jordan. The findings demonstrated that most of the interviewees agree that their food SCM are linkages between them and other key players in the Jordanian food business such as manufacturers, distributors, packaging suppliers and the government bodies. SCMr2 stated that, *"As a food retailer our food supply chain is managed to ensure that we have the right links with other buyers and sellers. We collaborate with them to supply the final products with high standards and sustainable labels to the end customer. It is really important that our food supply chain is innovative and has an environmental focus."* The majority

of the interviewees highlighted their awareness of SOI in food SCM as supported by HSS2 who indicated, *“We are considering sustainability for our environment, our society and people whom we work with and for and this by applying different innovations in our products and our organization.”* The following are findings on the key insights from the key perspectives: **network, entrepreneurship, innovation and sustainability** at all three levels of actor, dyad and network, on SOI in food SC.

a) Network

The overall responses from the interviewees provided relevant discussions on the concept of network based on their knowledge and empirical experiences. They highlighted the importance of implementing network, either actor positioning, activities or resources. In consistence with this, SCMr2 said, *“In my opinion, based on my experience, R2 is involved very well with our network; we have different relationships with the members in our supply chain.”* Key representative quotations linked to each contextual factor of the themes for network are provided in Table 5.14.

Actor: Four contextual factors emerged from analyzing the five transcripts for R2. These are leadership, reputation, brand image and commitment. The interviewees all agreed that maintaining a good **reputation** and **brand image** is essential. A few interviewees mentioned that **leadership** is important in R2. The majority of the interviewees mentioned **commitment** within the retailer and other members in the SC. No interviewees reported any **position imbalance**.

Activities: From analyzing the five transcripts for R2, four contextual factors emerged. These are planning, organizing, controlling and exchange activities. The majority of the interviewees discussed different activities they share within their organization and other SC actors. Some interviewees highlighted **planning activities** applied at R2. A few interviewees emphasized **organizing activities** applied at R2. Several interviewees explained their **controlling activities** at R2. The overall responses underlined **exchange activities** being applied at R2.

Resources: Four contextual factors emerged from analyzing the five transcripts for R2. These are financial, information, physical and personnel resources. The interviewees all agreed that having sufficient **financial resources** is an essential at R2 and with their dyad and network relationships. Several interviewees explained the importance of **physical resources** needed in order to achieve their goals at actor, dyad and network level. A few interviewees discussed their **personnel resources** at retailer R2. Some interviewees discussed the importance of having **information resources**.

Table 5.14: Network Perspective-Themes, Contextual Factors and their Representative Quotations (Case 2)

Theme	Contextual Factor (Coding category)	Representative Quotations
Actor Positioning	Position Imbalance	No interviewees reported position imbalance.
	Leadership	PDM2 said, <i>"I believe having good leadership is important as they should guide and motivate the employees in order to achieve our goals."</i>
	Reputation	HSS2 explained, <i>"To survive in the Jordanian market, which is very competitive, it is important to build a good reputation and keep it as well as having a good brand image in front of the community."</i>
	Brand Image	
	Commitment	HSM2 said, <i>"Our employees need to be committed to their work to achieve our goals as well as R2 being committed to other members in our supply chain. By doing so we engage in better relationships and we build trust."</i>
Activities	Planning activities	FFM2 said, <i>"When we plan for something we set a target to complete it and to pinpoint any resources needed."</i>
	Organizing activities	SCMr2 explained, <i>"We mutually organize activities with other members in the supply chain, such as the Jordanian government bodies and our suppliers, to conduct meetings and field work where both sides attend."</i>
	Controlling activities	PDM2 discussed, <i>"We have activities which we apply to enhance and keep in control of certain factors to enhance our performance."</i>
	Exchange activities	HSS2 explained, <i>"We know about internet of things and block chain technology but we do not implement them, as most of our supply chain members do not know about them and their cost is high. But, I do believe they are good for us to link some of our data with our suppliers so as to share this data such as records, prices and orders of our products such as yogurt or beef."</i>
Resources	Financial resources	PDM2 explained, <i>"Our finance resources come from three different stakeholders, first is our internal resources such as our entrepreneurial fund box, second is our shared resources such as shared technology costs with our suppliers and third our investor resources such as our government bodies."</i>
	Information resources	HSS2 said, <i>"Information resources are extremely important at R2 to be able transfer data and information in our retailer and between members of our supply chain and us."</i>
	Physical resources	SCMr2 said, <i>"Being provided with physical resources is essential at R2. For example, we need refrigerated vehicles to distribute our beef and yogurt products. [...]."</i>
	Personnel resources	HSS2 said, <i>"I believe our HR are very qualified and always manage to provide collaborations with our suppliers and government bodies to discuss our knowledge on a topic or our experiences and much more."</i>

b) Entrepreneurship

All the interviewees provided relevant discussion on entrepreneurship and have good knowledge of it. They emphasized the importance of employing entrepreneurship, either corporate entrepreneurship, intrapreneurship or entrepreneurial HR, at their retailer in order to succeed. In consistence with this, FFM2 said, *“Entrepreneurship is really growing and expanding in Jordan. I believe it is an essential in R2. Having an entrepreneurial mindset helps us build and create innovative ideas leading to achieving our aims and goals.”* Key representative quotations linked to each contextual factor of the themes for entrepreneurship are provided in Table 5.15.

Corporate Entrepreneurship: From analyzing the five transcripts for R2, five contextual factors emerged. These are stages of implementing, retailer supports innovation, retailer provides resources and easy accessibility, retailer structures for an intrapreneurial environment and developing individual managers for corporate entrepreneurship. The overall responses discussed the **stages the retailer goes through to implement innovative ideas** originated from their employees. Several interviewees discussed R2 in regards to **supporting innovation** and **structuring an intrapreneurial environment**. The overall responses agreed that R2 does support innovation but does not provide a structured intrapreneurial environment. Some interviewees discussed the **different resources** R2 provides. A few interviewees explained that R2 does help in **developing managers for corporate entrepreneurship**. No interviewees reported any **culture** influence.

Intrapreneurship: Five contextual factors emerged from analyzing the five transcripts for R2. These are firm takes the risk and responsibility, are innovative and creative, apply firm’s management policies and structure, use of firms’ resources efficiently, and fixed salary plus bonus/reward if any. Some interviewees explained that having intrapreneurs in R2 is important and that they need to be **creative and innovative**. Several interviewees mentioned that if an innovative idea was to be implemented the **organization does take the risk and responsibility**. The majority of the interviewees showed that they know they have to **follow the organizations’ management policies and structure** when constructing an innovative idea. Some of the interviewees emphasized on their **use of the firms’ resources efficiently**. The majority of the interviewees mentioned that if they did bring forward a successful innovative idea then they would receive a **reward**.

Entrepreneurial HR: For this theme, five contextual factors emerged from analyzing the five transcripts for R2. These are HR understand the whole context of their business, motivate and lead their employees, drivers of success, entrepreneurial thinking and good decision makers. Several interviewees agreed that their **HR understand the whole context of their business**. Some interviewees discussed the importance of **HR motivating and leading** their employees and that ____

their **HR are drivers of success**. Several interviewees described the significance of **HR thinking like entrepreneurs**, being innovative and **are good decision makers**.

Table 5.15: Entrepreneurship Perspective-Themes, Contextual Factors and Representative Quotations (Case 2)

Theme	Contextual Factor (Coding category)	Representative quotations
Corporate Entrepreneurship	Stages of implementing innovative ideas	SCMr2 explained, <i>“Usually the employee that comes up with an innovative idea informs either their manager or go to the CEO. From that point on the stages to implement or not begins. They need to consider if the innovative idea is possible to implement and its benefits, if it passes on to implementation they will need to develop the idea then launch it. After it has been launched we still need to manage it.”</i>
	Retailer supports innovation	HSM2 said, <i>“R2 supports innovation and encourage us to come up with innovative ideas. But unfortunately, we do not have an entrepreneurial environment. We do not get extra time to just brainstorm for any new ideas and we do not have multidisciplinary teams, [...]. I believe R2 needs to better structure our entrepreneurial environment.”</i>
	Retailer structures for an intrapreneurial environment	
	Retailer provides resources and easy accessibility	HSM2 said, <i>“R2 tries its best to provide us with financial resources for any innovative ideas, it provides us with information, physical resources and people or bodies to collaborate with to enhance ourselves. [...].”</i>
	Developing individual managers for CE	PDM2 said, <i>“I believe it is important for R2 to continue helping develop individual managers into intrapreneurial catalyst, as this helps a lot not only internally but also when engaging with other chain members.”</i>
	Culture	No interviewees reported any culture influence.
Intrapreneurship	Are innovative and creative	HSS2 said, <i>“I consider employees that think like entrepreneurs are important assets to our retail as they are creative and innovative and this is visible during their interactions with other chain members.”</i>
	Firm takes the risk and responsibility	PDM2 said, <i>“When an innovative idea has been decided to be implemented any risk or responsibility is all on R2.”</i>
	Apply firms’ management policies and structure	FFM2 explained, <i>“We have to abide by the R2’s management policies and structure when we build innovative ideas.”</i>
	Use of firms’ resources efficiently	HSS2 explained, <i>“We do our best to efficiently use our resources and are frequently reminded to use them.”</i>
	fixed salary + Bonus/reward (if any)	SCMr2 said, <i>“When an innovative idea is implemented the employee or employees receive a reward of a discount on their next purchase at R2.”</i>
Entrepreneurial HR	Understand the whole context of their business	PDM2 said, <i>“Our HR knows about everything in the organization, this shows during our engagement with other chain members, they are responsible for several activities such as job description, trainings, operationalizing responsibilities, and much more.”</i>
	Motivate and lead their employees	FFM2 explained, <i>“I believe it is important that our HR keep motivating employees to be innovative, to complete their tasks, making sure everyone is in line, to lead their employees positively hence leading them to success. We have a few HR that do this.”</i>
	Driver of success	
	Entrepreneurial thinking	HSM2 explained, <i>“One time, our HR had a meeting with our chain members and because of her ‘out of the box’ thinking it lead to profitability.”</i>
	Good decision makers	HSS2 explained, <i>“One success story was for the reason that our HR manager made a good decision on the spot with our chain members, which lead to a productive outcome.”</i>

c) Innovation

The overall interviewees' responses provided discussion on innovation and had good knowledge of it. They emphasized the positive influence of innovation within their retailer. In consistence with this is, SCMr2 said, *"I believe that one of our keys of success is being innovative. [...]"*. Key representative quotations linked to each contextual factor of the themes for innovation are provided in Table 5.16.

Product Innovation: Seven contextual factors emerged for this theme from analyzing the five transcripts for R2. These are staying competitive, seizing market opportunities, design for sustainability, packaging material, eco-labeling, life-cycle analysis and organic products. The majority of the responses highlighted the importance of **staying competitive** and **seizing market opportunities**. Some interviewees discussed the importance of **designing practices for sustainability** such as energy saving properties, recyclability, eco-friendly materials, product shelf life and reducing raw material. All the interviewees clarified they provide **organic products** at R2. Many interviewees discussed **packaging material** at R2. A minority of the interviewees mentioned **labelling their products into environmental categories** such as organic and recyclable. Several interviewees explained the inventory process to manage **product life cycle** is to optimize inventory with consideration for inventory type related to customer demand.

Process Innovation: For this theme, six contextual factors emerged from analyzing the five transcripts for R2. These are managing cost, adopting environmentally friendly technologies, to raise industry standards in line with environmental performance, response to external pressures and regulatory changes, handling waste and logistics. The overall responses emphasized the importance of **responding to external demands** such as customer demand and government regulations. Several of the interviewees highlighted their **efficient transportation networks and distribution channels**. Some interviewees discussed how they **handle waste**, such as recycling. Several interviewees underlined their importance to **adopting environmentally friendly technologies** at R2. Some interviewees clarified they try to **enhance their industry standards corresponding to environmental performance** and **gaining economic benefits**.

Organizational Innovation: Seven contextual factors emerged for this theme from analyzing the five transcripts for R2. These are certificates, stakeholders' management, engaging employees in developing a sustainable business, health and safety issues, sustainability vision, code of conduct and environmental policy. The majority of the responses highlighted receiving **certificates** for instance ISO 22000 and HACCP. All the interviewees discussed their **stakeholders' management** such as the contracts and communications between them. The overall responses discussed **health**

and safety issues such as measures and trainings. A few interviewees explained **codes of conduct** such as ethics and transparency at R2. Some interviewees explained designing and implementing **visions based on sustainability**. The majority of interviewees agreed that R2 involves its **employees in developing a sustainable business**. The minority of the interviewees explained **environmental policies** implemented in the organization.

Table 5.16: Innovation Perspective-Themes, Contextual Factors and Representative Quotations (Case 2)

Theme	Contextual Factor (Coding category)	Representative Quotations
Product Innovation	Staying competitive	FFM2 stated, <i>"I believe staying competitive is very important to survive in our market, we can do this, for example, by trying to satisfy our customers, to take advantage of any market opportunities and being innovative."</i>
	Seizing market opportunities	
	Design for sustainability	SCMr2 explained, <i>"We are currently implementing LED lighting in our branches in Jordan but we have not completed them yet. Before implementation, we were looking at things like: short and long term results, is it feasible, is it environmentally friendly, financial issues, good suppliers, and much more."</i>
	Packaging material	FFM2 highlighted, <i>"A few years ago we started selling our meat in biodegradable trays as it is environmentally friendly; we received approval from our government and now we import these trays from an external supplier."</i>
	Eco-labeling	PDM2 explained, <i>"In our contracts with some of our suppliers, we request them to include in their packaging if their products are organic and if the containers are recyclable."</i>
	Life-cycle analysis	HSS2 said, <i>"When we decide to introduce a new product it is very important for us to focus on marketing it very well in order for customers and potential customers to know about it, leading to sales."</i>
	Organic products	HSM2 said, <i>"I believe as an international retailer it is important to provide our customers with organic products. We provide organic products such as yogurt, other dairy products and fruits."</i>
Process Innovation	Managing cost	HSS2 highlighted, <i>"We just finished implementing LED lights at our main branch and are now working on our other branches. R2 took this decision since it is environmentally friendly and cuts our costs. In my opinion, R2 does try to improve its standards along the lines of environmental and economic benefits."</i>
	To raise industry standards in line with environmental performance	
	Adopting environmentally-friendly technologies	PDM2 explained, <i>"In my opinion, searching for environmentally friendly technologies that we can implement and benefit from is very important. For example, we are implementing LED lights at all our branches since they are energy efficient and reduces the demand of power."</i>
	Response to external pressures and regulatory changes	HSM2 discussed, <i>"When we are pressured by for example to implement new regulations by the government bodies or by customer demand or supplier demand we need to act smartly and quickly to overcome them."</i>
	Handling waste	FFM2 said, <i>"R2 is contracted with a company that collects our recyclable waste and then the company sales the waste to recycling centers to be recycled. We put the recyclable waste in one area and the company separates the waste."</i>
	Logistics	SCMr2 said, <i>"R2 has two warehouses, we try to keep them up-to-date and innovative as much as possible such as its design, equipment and efficient time of delivery. For example, the beef we import is sent to the warehouse, it must be</i>

		<i>in temperature controlled vehicles, trollies, refrigerators. Since beef is sensitive to temperature we need to quickly distribute it to our branches.”</i>
Organizational Innovation	Certificates	<i>PDM2 discussed, “We have certificates: HACCP (Hazard Analysis and Critical Control Point) and ISO food 22000. I believe having these certificates distinguishes us from our competitors and is an indication to our government and other chain members that we have met the standards.”</i>
	Stakeholders management	<i>SCMr2 said, “Our HR arranges meetings with our suppliers and Jordanian government bodies on different topics such as sustainability and hygiene and safety issues.”</i>
	Engaging employees in developing a sustainable business	<i>HSS2 said, “R2 always runs workshops and trainings revolving around sustainability; we also collaborate with other chain members to discuss different sustainability issues. They also inform us of any conferences or exhibitions to attend outside of R2 on the different aspects of sustainability.”</i>
	Health and safety issues	<i>HSM2 explained, “R2 provides trainings and workshops on health and safety issues regularly. R2 has for example, in the butchery, precautions, safety signs, first aid kit, fire extinguisher, and uniform for the butchers and much more.”</i>
	Sustainability vision	<i>FFM2 said, “R2 has a goal to maintain the highest standards of sustainability, workplace excellence and community engagement. Therefore, we try to design and implement our goals for our organization.”</i>
	Code of conduct	<i>HSS2 explained, “Ethically before we contract with any of our suppliers such as beef and yogurt suppliers, we check for certificates, licensing authority of practice from the Ministry of Health, and we go for an onsite inspection to ensure they reach the right standards. It would not be ethical if they provide us a huge number of yogurt products for a cheap price if they don’t have a license from the Ministry of Health.”</i>
	Environmental policy	<i>FFM2 discussed, “At our retail we have environmental policies, issues like recycling and energy control. As we are an international organization, most of our policies are from our mother branch outside of Jordan, the rest of the policies are based on the Jordanian government bodies’ policies.”</i>

d) Sustainability

The majority of the responses showed good understanding of sustainability. They emphasized the significance of implementing sustainability either environmental, economic or social at their retailer. As HSS2 explained, *“Here at R2 we care for our environment, for our economics and contribute to society. We know the importance of sustainability and try our best to be sustainable.”* Key representative quotations linked to each contextual factor of the themes for sustainability are provided in Table 5.17.

Environmental: Four contextual factors emerged for this theme from analyzing the five transcripts for R2. These are managing water, energy control, recycling and environmental awareness. The majority of the interviewees highlighted the importance of **environmental awareness** at R2. Some of the interviewees emphasized the importance of **controlling their use of energy**. All the interviewees discussed how they carry out **recycling**. The majority of the interviewees discussed how R2 **manages water**.

Social: From analyzing the five transcripts for R2, eight contextual factors emerged. These are training and workshops, social events, diversity, community impact, safe and fair labor conditions, employee benefits, truthful product labeling and descriptions, and customer health and safety. The overall responses from the interviewees discussed **employee benefits** provided at R2. The majority of the interviewees stated that R2 arranges **social events** for its employees. Several interviewees underlined the various **trainings and workshops** provided at R2. Some interviewees mentioned the **safe and fair labor conditions** at R2. Several interviewees discussed the **health and safety of their customers**. Some interviewees discussed R2's **impact on the community**. Several interviewees underlined **diversity** within R2. The minority of interviewees mentioned the importance of **product labeling and descriptions to be truthful**.

Economic: Five contextual factors emerged for this theme from analyzing the five transcripts for R2. These are tax, economic interests of external stakeholder, competitive procurement, customer satisfaction, and efficient production and packaging. The majority of the interviewees highlighted the significance of their **customers' satisfaction**. The overall responses emphasized on the **economic interests of their external stakeholders**. All the interviewees mentioned **profitability and tax** in Jordan. A few interviewees highlighted the importance of **competitive procurement** at R2. Several interviewees explained the significance of **efficient production and packaging**.

Table 5.17: Sustainability Perspective-Themes, Contextual Factors and Representative Quotations (Case 2)

Theme	Contextual Factor (Coding category)	Representative Quotations
Environmental	Managing water	PDM2 said, <i>"Throughout our branches and warehouses we aim at reducing our water usage. For example, we minimize our water usage at our warehouses by using the right restriction equipment for water control and we adjust our water power efficiently in order to use less water."</i>
	Energy control	FFM2 said, <i>"We are currently in the final stages before switching our normal lights to LED in all our branches. I believe it was a great decision as we will improve our environmental performance and cut our costs. We implemented solar panels just at our main branch and plan to do the rest of our branches in the near future."</i>
	Recycling	PDM2 stated, <i>"Since Jordan does not offer municipal recycling, we contracted with an organization where they come to all our branches and warehouses to collect our recyclable waste, which are later sent to recycling industries."</i>
	Environmental awareness	SCMr2 said, <i>"On a regular basis we are provided with meetings and information about environmental issues and we brainstorm how our retailer can improve these issues."</i>
Social	Trainings and workshops	HSS2 said, <i>"We have several trainings and workshops provided for us at R2 to enhance our knowledge and keep up to date on certain topics, such as environmental and safety issues."</i>
	Social events	FFM2 said, <i>"We have the best social events organized for us, like football tournaments and barbeques."</i>

	Diversity	HSS2 explained, <i>“Due to our diverse customers’ demand we try to provide exclusive and diverse products.”</i>
	Community impact	HSM2 explained, <i>“We have a variety of job opportunities and our retail enhances products’ image. I believe we have a big influence on our community.”</i>
	Safe and fair labor conditions	PDM2 explained, <i>“We have regulations of health and safety; I’m glad to say we all abide by them and our work conditions are safe. I believe we have fair labor conditions such as our working hours, shifts, days off and our schedules.”</i>
	Employee benefits	HSM2 explained, <i>“Compared to other organizations in Jordan we have great employee benefits, for instance: social security, food coupons and private medical insurance.”</i>
	Truthful product labeling and descriptions	FFM2 stated, <i>“I believe to maintain trust between us and our customers we should always ensure our products are always truthfully labeled and descriptions are correct.”</i>
	Customer health and safety	SCMr2 explained, <i>“We care for the health and safety of our customers. We provide safe passageways to avoid any slipping hazards, a clean environment, suitable lighting, heating and air conditioning and clean facilities.”</i>
Economic	Profitability and Tax	PDM2 discussed, <i>“Tax is a big issue in Jordan, we always attend meetings with some of our government bodies to discuss it.”</i>
	Economic interests of external stakeholder	SCMr2 discussed, <i>“We have many stakeholders, our suppliers are interested in our performance, they want us to keep buying products from them and sale at our retailer.”</i>
	Competitive procurement	HSS2 explained, <i>“I believe our procurement needs to create good strategical decisions in order for R2 to compete in our Jordanian market.”</i>
	Customer satisfaction	FFM2 said, <i>“We have a service for customer complaints which we take seriously. We investigate the customers’ complaint and take immediate action. The satisfaction of our customers is very important to us at R2.”</i>
	Efficient production and packaging	HSM2 discussed, <i>“I believe having good equipment can help ensure efficient production and packaging.”</i>

5.3.2.2 Observations for Case Study 2

Observations were conducted in January 2019 at the actor (R2), dyad level (a Central Slaughterhouse in Amman) and at network level (a beef packaging company for R2). The findings from the observations, followed the observation protocol (Appendix H) and are consistent with the findings in the interviews. Discussions on the meeting and tours were based on the theoretical perspectives, themes and contextual factors identified from the case study 2 interviews. Table 5.18 presents a summary for observations for SC of R2.

Table 5.18: Observations for SC of R2-Case Study 2 (Author's own work).

Observations for SC of Retailer 2			
Actor Level	Meeting at R2	Duration	35 minutes
		Observer	Participant observer
		Organized by	HR Manager at R2
		Topic	Energy control
		What was revealed?	R2 is seeking for ways to control their energy usage. It was confirmed that R2 is currently studying the implementation of LED lights in all its branches in Jordan and their next step is implementing solar panels. They discussed different issues such as is it environmentally friendly, feasible, short and long term results and financial issues. For R2 to take a big choice, they had to go through different stages. One challenge of implementing different environmental friendly technologies is their limited financial resources.
		Perspective/ Theme/Contextual factor covered	Sustainability- Environmental – Energy Control Innovation - Product Innovation - Design for sustainability Innovation - Process Innovation - Adopting environmentally-friendly technologies and Managing cost/ Organizational Innovation - Sustainability vision Network- Resources –Financial Resources
	A tour at R2	Duration	30 minutes
		Observer	Participant observer
		Organized by	HR Manager at R2
		Topic	The researcher saw the butchery, beef and yogurt refrigerators, packaging, their warehouse, receiving area and hygiene and safety signs.
		What was revealed?	The employees went through a procedure when the yogurt distributor brought the yogurt and other dairy products. They had a checklist they went through which consisted of, for example, hygiene and safety issues, temperature of the refrigerated vehicle and any damaged packaging that would affect the shelf-life of the product.
		Perspective/ Theme/Contextual factor covered	Innovation - Product Innovation - Life-cycle analysis Network- Resources – Physical Resources Innovation- Organizational Innovation -- Health and safety issues
Dyad Level	A meeting at a Central Slaughterhouse	Duration	40 minutes
		Observer	Non-participant observer
		Organized by	Hygiene and Safety Manager at R2
		Topic	Hygiene and safety issues that R2 regularly inspects
		What was revealed?	R2 is aware of the process the cattle goes through such as how it is slaughtered, medical checkup by the veterinarian, equipment used, hygiene and safety issues, refrigerators at the slaughterhouse, refrigerated vehicles used to transport the beef and animal welfare. R2 are in need of knowledge of when the meat is ready to be consumed after slaughter, time to become tender and any hygiene needed to be done.
		Perspective/ Theme/Contextual factor covered	Innovation- Organizational Innovation -- Health and safety issues Network- Resources – Physical resources and Information resources
	A tour at Central Slaughterhouse	Duration	30 minutes
		Observer	Non-participant observer
		Organized by	Hygiene and Safety Manager at R2
		Topic	The researcher saw the slaughter room, refrigerators, the preparation room, hygiene and safety signs and the refrigerated vehicles.
		What was revealed?	There is good collaboration, relationship and cooperation between R2 and a Central Slaughterhouse in Amman; but R2 need more knowledge and information about the different hygiene signs used there; more trainings and workshops.
		Perspective/ Theme/Contextual factor covered	Network- Actor Positioning – Commitment Network- Resources – Information resources and Physical resources Sustainability – Social - Trainings and workshops Innovation- Organizational Innovation -- Health and safety issues
Network	Meeting with beef packaging	Duration	45 minutes
		Observer	Non-participant observer
		Organized by	Head of Sustainable Sourcing at R2
		Topic	Alternative packaging such as recyclable or biodegradable trays

A tour at the beef packaging company	What was revealed?	R&D of this beef packaging company are always searching for environmentally friendly beef packaging they can adopt or can update. They emphasized on including labels on their packages if they are recyclable or biodegradable.
	Perspective/ Theme/Contextual factor covered	Innovation - Process Innovation - Adopting environmentally-friendly technologies Innovation - Product Innovation - Eco-labeling Sustainability – Social - Truthful product labeling and descriptions
	Duration	35 minutes
	Observer	Non-participant observer
	Organized by	Head of Sustainable Sourcing at R2
	Topic	The researcher visited the beef packaging's warehouse; saw their machinery, and different packages.
	What was revealed?	There is collaboration between R2 and the beef packaging. The packaging company provides the stretchable plastic meat film and biodegradable trays. The beef is placed on the tray, covered with film, and put on a heat pad so that the film sticks. One challenge the packaging company and R2 face is the majority of the customers are used to one method of packaging and refuse a new method such as vacuumed packaging for local beef; there is a need of knowledge for new methods of packaging.
	Perspective/ Theme/Contextual factor covered	Innovation - Process Innovation - Adopting environmentally-friendly technologies Entrepreneurship – Corporate entrepreneurship – culture Network- Resources – Physical resources

* *Participant Observer*: the researcher would participate with the participants.

* *Non-Participant Observer*: the researcher would not participate with the participants.

5.3.2.3 Secondary Data for Case Study 2

Secondary and documentary data were collected and analyzed; Table 5.19 presents key findings at R2. It was evaluated that the secondary data is consistent with the findings in the interviews and observations. The information chosen is in line with the theoretical perspectives, themes and contextual factors identified from the case study interviews in R2.

Table 5.19: Secondary Data for R2-Case Study 2 (Author's own work)

Secondary Data for Retailer 2	
Date: Researcher collected data	January 2019
Source: Access to Archival Records and Document Data	<i>Documents</i> : From Websites of the retailer, Government websites of sustainability projects and reports <i>Archival Records</i> : Types of services and products, Demographic Details (2018), Market Reports (2018) and Meeting Minutes (2018)
Key example of a finding: ▪ Website of R2 (2018) ▪ Market Reports (2018)	R2 maintains social sustainability. Customers can receive the latest news about R2 via WhatsApp, newspaper, billboards to reach diverse customers. As well as, on certain days throughout the year, R2 provides a cooking class for children while their parents shop at R2; this had an impact on community, providing this service has created customer retention and this service helped boost reputation.
Perspective/Theme/Contextual factor covered	Sustainability- Social – Diversity Network- Actor positioning – Reputation and Brand image
Key example of a finding: ▪ Market Reports (2018) ▪ Meeting Minutes (2018)	R2 provides loyalty cards, such as the black, gold and platinum card. R2 has a concept 'More Cards, More Benefits', where their customers earn points and can choose their rewards which are exclusive and diverse. When customers use this card, R2 knows the number of times they have purchased, if they are purchasing normally or increased times they purchased this indicates the customer is satisfied. If the number of times they purchased decreased this indicates they are not satisfied, R2 then tries to contact them to understand the problem.
Perspective/Theme/Contextual factor covered	Sustainability- Social – Diversity Sustainability – Economic - Customer satisfaction

5.3.3 Case Study 3- Food Retailer (R3)

R3 is an international retailer, which provides customers with a great quality and variety of food products and household products, with a good mix of local, traditional and international products. The brand was launched in Jordan in the early 2000s, there is only one branch. R3 is located in one of the biggest shopping centers in Amman. They provide a free indoor valet parking for its customers. R3 sells local beef and imports beef from six countries, such as Australia. R3 is contracted with 11 different yogurt industries as well as two delicatessen companies, which all provide them with yogurt and other dairy products. The beef they purchase from a Central Amman Slaughterhouse is transported and distributed by their suppliers to them daily. R3's goal is: *"Our goal is to differentiate our products and target specific level of customers whom demand high quality products and international products while maintaining the highest standards of sustainability"* (R3 Website, 2019). Descriptions on the five interviewees for R3 are in Table 5.20.

Table 5.20: Demographics of Interviewees-Case Study 3 (Author's own work)

Characteristics	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
Job Title in R3	Fresh Food Manager (FFM3)	Product Development Manager (PDM3)	Supply Chain Manager (SCMr3)	Head of Sustainable Sourcing (HSS3)	Hygiene and Safety Manager (HSM3)
Age	35-45	25-35	25-35	25-35	35-45
Gender	Male	Male	Female	Male	Male
Education Level	BSc	MSc	BSc	BSc	BSc
Country of Education	Jordan	Jordan	Jordan	Jordan	Jordan
Years of Experience	18	13	9	6	15

5.3.3.1 Insights on SOI in food SCM for Case Study 3

The five interviews were conducted in July 2019 in Jordan. The interviewees provided relevant discussions on the concept of food SCM based on their knowledge and working experiences with other actors. They highlighted the significance of implementing SC strategies, either actor collaboration, interrelationships and flows of products and information. FFM3 who explained, *"Food SCM is a network that includes a set of relationships which are direct and indirect between different actors in our meat and dairy chains where they share information and supply products."* The interviewees highlighted their awareness of SOI in food SCM as supported by HSM3, *"Our supply chain is to collaborate with other members in the whole chain to provide a final product to a final customer. Our position is linked to our reputation, where we provide innovation initiatives on several issues such as issues related to sustainable development."* The following are findings on the key insights from the key perspectives: **network, entrepreneurship, innovation and sustainability** at all three levels of actor, dyad and network, on SOI in food SC for R3.

a) Network

All the interviewees showed understanding of network based on their experience and knowledge. They highlighted the importance of implementing networks, either actor positioning, activities or resources. In consistence with this, FFM3 said, *“We have good collaboration and relationships with our suppliers and the government bodies; I believe R3 is involved very well.”* Key representative quotations are shown in Table 5.21.

Actor: From analyzing the five transcripts for R3, five contextual factors emerged. These are position imbalance, leadership, reputation, brand image and commitment. The interviewees all agreed that maintaining a good **reputation** and **brand image** is essential. Some interviewees mentioned that **leadership** is important in R3. The majority of the interviewees mentioned **commitment** within the retailer and other members in the SC. A few interviewees discussed the **position imbalance** of their retailer.

Activities: From analyzing the five transcripts for R3, four contextual factors emerged. These are planning, organizing, controlling and exchange activities. The majority of the interviewees discussed different activities they share within their organization and other actors in SC. Several interviewees emphasized **planning activities** applied at R3. Some interviewees emphasized **organizing activities** applied at R3. Most of the interviewees explained their **controlling activities** at R3. The overall responses underlined **exchange activities** applied at R3.

Resources: Four contextual factors emerged from analyzing the five transcripts for R3. These are financial, information, physical and personnel resources. The majority of the interviewees agreed that having sufficient **financial resources** is an essential at R3 and with their dyad and network relationships. Some interviewees explained the importance of **physical resources** needed in order to achieve their goals at actor, dyad and network level. Several interviewees discussed their **personnel resources** at retailer R3. A few interviewees discussed the importance of having **information resources**.

Table 5.21: Network Perspective-Themes, Contextual Factors and Representative Quotations (Case 3)

Theme	Contextual Factor (Coding category)	Representative Quotations
Actor Positioning	Position Imbalance	HSM3 said, <i>“Our retailer, R3, has power in our supply chain but we are not helping as much as we should with the other members, our main issue is that their mentality to allow us to help and provide them with our experience.”</i>
	Leadership	HSS3 stated, <i>“Having managers with good leadership skills is important as they encourage and help their employees; as well as lead in situations where our chain members are involved.”</i>
	Reputation	PDM3 explained, <i>“Building good reputation and keeping it is important and keeps us going. [...] Keeping a good brand image is what we need for our customers to keep coming back to shop with us; [...]”</i>
	Brand Image	
	Commitment	SCMr3 said, <i>“We have a committed relationship with the slaughterhouse to ensure high quality products, where we have regular meetings with them and the Jordanian Drug and Food Association. We discuss the role of the veterinarian, various certificates such as hygiene, refrigerators, refrigerated vehicles and much more.”</i>
Activities	Planning activities	PDM3 explained, <i>“Before we implement anything we study and plan for it and see what resources we need.”</i>
	Organizing activities	HSM3 said, <i>“We organize activities such as workshops and meetings with the Jordanian Ministry of Agriculture discussing several issues such as importing fresh products and their regulations.”</i>
	Controlling activities	SCMr3 discussed, <i>“Our HR department are responsible for making sure all our employees are following our regulations and policies.”</i>
	Exchange activities	FFM3 explained, <i>“We pay some of our beef suppliers on a weekly basis and others on a monthly basis, we usually pay the money via bank transfer or send out a cheque.”</i>
Resources	Financial resources	HSM3 discussed, <i>“We are currently working on replacing all the traditional lights with LED, and we couldn’t do it before because we were not ready financially.”</i>
	Information resources	FFM3 said, <i>“We have the ERP system (Enterprise Resource Planning System) which we use to store and exchange data and information within R3 between our different departments, as well as with other chain members that do have the ERP system.”</i>
	Physical resources	HSM3 explained, <i>“It is very important that we have functioning refrigerated trucks to transport our beef and yogurt.”</i>
	Personnel resources	PDM3 said, <i>“Our HR always plans meetings with our suppliers, we have good collaborations with all our suppliers, they always discuss different issues and provide their knowledge and experience.”</i>

b) Entrepreneurship

The majority of interviewees provided relevant discussion on entrepreneurship. They emphasized the importance of employing entrepreneurship, either corporate entrepreneurship, intrapreneurship or entrepreneurial HR, at their retailer in order to succeed. In consistence with this, SCMr3 said, *“Entrepreneurship is buzzing across Jordan! I believe to achieve our retailer’s goals we should all think like entrepreneurs.”* Key representative quotations are provided in Table 5.22.

Corporate Entrepreneurship: From analyzing the five transcripts for R3, six contextual factors emerged. These are stages of implementing, retailer supports innovation, retailer provides resources and easy accessibility, retailer structures for an intrapreneurial environment, developing individual managers for corporate entrepreneurship and culture. Several interviewees discussed the **stages the retailer goes through to implement innovative ideas** originated from their employees. The interviewees discussed the position R3 is in regards to **supporting innovation** and **structuring an intrapreneurial environment**. The majority of interviewees agreed that R3 supports innovation and provides a structured intrapreneurial environment. Several of the interviewees discussed the **different resources** R3 provides. A few interviewees explained that R3 does help in **developing managers for corporate entrepreneurship**. The majority of the interviewees discussed that **culture** influences R3 in regards to implementing CE.

Intrapreneurship: Five contextual factors for intrapreneurship emerged from analyzing the five transcripts for R3. Which are the firm takes the risk and responsibility, are innovative and creative, apply firm's management policies and structure, use of firms' resources efficiently, and fixed salary plus bonus/reward if any. Some interviewees discussed that having intrapreneurs within the organization is important and that they need to be **creative and innovative**. The majority of the interviewees explained they have to **follow the organizations' management policies and structure** when constructing an innovative idea and to **efficiently use the organizations' resources**. Several interviewees mentioned that if an innovative idea was to be implemented the **organization takes the risk and responsibility**. A few interviewees discussed that if they did bring forward an innovative idea and the organization decided to implement they would receive a 20% **discount** on their next purchase at R3, other than his/her fixed salary.

Entrepreneurial HR: For this theme, five contextual factors emerged from analyzing the five transcripts for R3. These are HR understand the whole context of their business, motivate and lead their employees, drivers of success, entrepreneurial thinking and good decision makers. A few interviewees agreed that their **HR should understand the whole context of their business**. Several interviewees discussed the importance of **HR motivating and leading** their employees and that **HR are drivers of success**. Some interviewees described the significance of **HR thinking like entrepreneurs**, being innovative and are **good decision makers**.

Table 5.22: Entrepreneurship Perspective-Themes, Contextual Factors and Representative Quotations (Case 3)

Theme	Contextual Factor (Coding category)	Representative Quotations
Corporate Entrepreneurship	Stages of implementing innovative ideas	PDM3 said, “When an employee creates an innovative idea, the employee notifies his/her manager of his/her idea. Then a study is conducted to see if they can implement it or not, any benefits, resources needed, how to develop it, how to launch it, and finally how to manage it.”
	Retailer supports innovation	HSS3 explained, “We are supported by R3 to be innovative, and we have a good environment for this. We have meetings where we brainstorm and discuss any new ideas, usually the gathering is with colleagues from different departments. But I believe R3 needs to improve our environment more, [...].”
	Retailer structures for an intrapreneurial environment	
	Retailer provides resources and easy accessibility	FFM3 said, “R3 provides us with good financial resources, data and information, and they are easy to access if we need them.”
	Developing individual managers for corporate entrepreneurship	HSM3 said, “R3 select managers that they believe are good leaders, motivate others, are good problem-solvers, etc. so they can help develop them for entrepreneurship within the organization [...].”
	Culture	PDM3 explained, “Our culture has a negative influence on most of our employees and I believe this affects them in thinking outside of the box and being innovative.”
Intrapreneurship	Are innovative and creative	FFM3 said, “In my opinion having employees that think like entrepreneurs is the key to success at R3.”
	Firm takes the risk and responsibility	HSS3 said, “Our organization takes the responsibility and risk of implementing any innovative idea not the employee.”
	Apply firms’ management policies and structure	SCMr3 explained, “We are frequently reminded that we have policies and regulations for the organization which we all must follow and to efficiently use the organizations’ resources.”
	Use of firms’ resources efficiently	
	fixed salary + Bonus/reward (if any)	PDM3 explained, “We only receive a 20% discount on our next purchase at R3 if our innovative idea was implemented; I believe R3 should provide better rewards to motivate us to come up with great ideas.”
Entrepreneurial HR	Understand the whole context of their business	HSM3 said, “In my opinion, our HR should know everything going on at R3, but unfortunately not all our HR team do, they should work towards enhancing this.”
	Motivate and lead their employees	HSS3 explained, “Our HR regularly motivates our employees; try their best to lead them in the right direction and to be drivers of success; [...].”
	Driver of success	
	Entrepreneurial thinking	FFM3 explained, “Yesterday during a meeting with our chain members, our HR manager made a good decision by thinking outside of the box and being innovative, which led to a constructive outcome.”
	Good decision makers	

c) Innovation

The majority of the interviewees provided relevant discussion on innovation. They highlighted the positive influence of innovation within their retailer. In consistence with this is, PDM3 said, *“Being innovative in this era is essential.”* Key representative quotations are provided in Table 5.23.

Product Innovation: Seven contextual factors emerged for this theme from analyzing the five transcripts for R3. These are staying competitive, seizing market opportunities, design for sustainability, packaging material, eco-labeling, life-cycle analysis and organic products. The majority highlighted the importance of **staying competitive** and **seizing market opportunities**. Several discussed the importance of **designing practices for sustainability** such as energy saving properties, recyclability, eco-friendly materials, product shelf life and reducing raw material. Most of the interviewees clarified they provide **organic products** at R3. Some discussed **packaging material** at R3. A few discussed **labelling their products into environmental categories** such as organic and recyclable. Several explained the inventory process to manage **product life cycle** is to optimize inventory with consideration for inventory type related to customer demand.

Process Innovation: six contextual factors emerged from analyzing the five transcripts for R3. These are managing cost, adopting environmentally technologies, to raise industry standards in line with environmental performance, response to external pressures and regulatory changes, handling waste and logistics. Several emphasized the importance of **responding to external demands** such as customer demand and government regulations. Most of the interviewees highlighted their **efficient transportation networks and distribution channels**. Some interviewees discussed how they **handle waste**, such as recycling. The majority highlighted their importance to **adopting environmentally friendly technologies** at R3. A few clarified they try to **enhance their industry standards corresponding to environmental performance** and **gaining economic benefits**.

Organizational Innovation: Seven contextual factors emerged for this theme from analyzing the five transcripts for R3. These are certificates, stakeholders’ management, engaging employees in developing a sustainable business, health and safety issues, sustainability vision, code of conduct and environmental policy. All discussed receiving **certificates** for instance ISO 22000 and HACCP. Some interviewees discussed their **stakeholders’ management** such as contracts and communications between them. Several interviewees discussed **health and safety issues** such as measures and trainings. The overall responses explained **codes of conduct** such as ethics and transparency at R3. Some interviewees explained designing and implementing **visions based on sustainability**. All agreed that R3 involves its **employees in developing a sustainable business**. Some interviewees explained **environmental policies** implemented in the organization.

Table 5.23: Innovation Perspective-Themes, Contextual Factors and Representative Quotations (Case 3)

Theme	Contextual Factor (Coding category)	Representative Quotations
Product Innovation	Staying competitive	HSM3 said, <i>“When we see an opportunity we take advantage of it and move into action; I believe by doing this we stay competitive in the market.”</i>
	Seizing market opportunities	
	Design for sustainability	HSM3 explained, <i>“Unfortunately we do not have solar panels as we are a food retailer within a huge shopping center that doesn’t have solar panels but we are currently looking at different options. [...]. We are in the process to replace the traditional lights with LED lights.”</i>
	Packaging material	FFM3 highlighted, <i>“We do not have biodegradable trays for our meat and poultry but we are working on getting them. However we have recyclable containers for the yogurt at our deli section.”</i>
	Eco-labeling	HSS3 explained, <i>“In our deli section, the containers are recyclable and are labelled recyclable including the logo for ‘I am recyclable’.”</i>
	Life-cycle analysis	PDM3 said, <i>“I believe for the life cycle of a product to last longer we always need to watch out for any competition and try to be innovative in a way the product may last longer.”</i>
	Organic products	SCMr3 said, <i>“We provide a good mix of local, traditional, and international products including organic products: dairy products, fruits and vegetables.”</i>
Process Innovation	Managing cost	PDM3 stated, <i>“We do our best to enhance our environmental issues and economic benefits such as implementing environmental technologies.”</i>
	To raise standards/ env. performance	
	Adopting environmentally-friendly technologies	HSM3 explained, <i>“I believe seeking environmentally friendly technologies that we can implement at R3 is a must, we are currently in the process of implementing LED lights at R3 as they are energy efficient.”</i>
	Response to ext. pressures and regulatory changes	FFM3 discussed, <i>“When our customers demand something like a product or service we try our best to provide it so that they do not go to our competitors.”</i>
	Handling waste	HSS3 said, <i>“We have a contract with a company that collects our recyclable rubbish daily from two to three times a day.”</i>
	Logistics	SCMr3 said, <i>“Our meat products are transported in refrigerated trucks once a day, preferably before traffic so before 8 am.”</i>
Organizational Innovation	Certificates	PDM3 discussed, <i>“We have received the HACCP certificate and are working on the ISO food 22000 certificate, and we always try to stay up to date with our certificates. They are something our chain members ask for and vice versa.”</i>
	Stakeholders management	FFM3 said, <i>“We regularly have meetings with the Jordan Food and Drug Administration (JFDA), which we discuss different food regulations.”</i>
	Engaging employees in sustainable business	PDM3 said, <i>“Yesterday we had a meeting with some of our chain members about sustainability; R3 tries to enhance the business in terms of sustainability.”</i>
	Health and safety issues	HSM3 explained, <i>“Here at R3 we have uniform we need to wear in the butchery, we wear a cut resistant butcher safety glove, and we follow certain health and safety precautions.”</i>
	Sustainability vision	HSS3 said, <i>“We try to maintain the highest standards of sustainability when implementing the organizations’ goals.”</i>
	Code of conduct	HSM3 explained, <i>“When we decide to do business with a supplier such as our beef suppliers we work ethically and there needs to be transparency between us, we need to check all their certificates and do an onsite inspection.”</i>
	Environmental policy	SCMr3 said, <i>“We have policies implemented for energy waste and recycling.”</i>

d) Sustainability

The majority of the responses showed understanding of sustainability. They highlighted the significance of implementing sustainability either environmental, economic or social at their retailer. In consistence with this, HSM3 explained, *“We do our best to maintain the highest standards of sustainability by caring for our environment such as implementing environmentally friendly technologies, contributing to our society, and considering our economics.”* Key representative quotations are provided in Table 5.24.

Environmental: From analyzing the five transcripts for R3, four contextual factors emerged for this theme. These are managing water, energy control, recycling and environmental awareness. Most of the interviewees highlighted the importance of **environmental awareness** at R3. Some interviewees discussed how R3 **manages water**. The majority of the interviewees discussed how they carry out **recycling**. Most of the interviewees emphasized the importance of **controlling their use of energy**.

Social: Eight contextual factors emerged from analyzing the five transcripts for R3. These are training and workshops, social events, diversity, community impact, safe and fair labor conditions, employee benefits, truthful product labeling and descriptions, and customer health and safety. The majority of the interviewees underlined the various **trainings and workshops** provided at R3. Most of the interviewees discussed **employee benefits** provided at R3. All stated that R3 does not arrange **social events** for its employees. Some interviewees mentioned the **safe and fair labor conditions** at R3. Several interviewees discussed the **health and safety of their customers**. A few interviewees discussed R3’s **impact on the community**. Most of the interviewees underlined **diversity** within R3. A few mentioned the importance of **product labeling and descriptions to be truthful**.

Economic: Five contextual factors emerged for this theme from analyzing the five transcripts for R3. These are tax, economic interests of external stakeholder, competitive procurement, customer satisfaction and efficient production and packaging. Most of the interviewees highlighted the significance of their **customers’ satisfaction**. Several interviewees emphasized on the **economic interests of their external stakeholders**. The majority mentioned **profitability** and **tax** elements in Jordan. A few interviewees highlighted the importance of **competitive procurement** at R3. Several interviewees explained the significance of **efficient production and packaging**.

Table 5.24: Sustainability Perspective-Themes, Contextual Factors and Representative Quotations (Case 3)

Theme	Contextual Factor (Coding category)	Representative Quotations
Environmental	Managing water	HSS3 said, “ <i>We try to minimize our water usage as much as possible, such as we modify our water power efficiently so as to use less water.</i> ”
	Energy control	PDM3 explained, “ <i>We are going to implement LED lights soon, we have already finished the study for it and hopefully this will control our energy usage.</i> ”
	Recycling	SCMr3 stated, “ <i>Here in Jordan we do not have municipal recycling so we are forced to search for other options; we contracted with a company to collect our recyclable rubbish and they send them to the recycling industries.</i> ”
	Environmental awareness	FFM3 stated, “ <i>Last week we had a meeting with one of our yogurt suppliers we were discussing different environmental issues and trying to provide awareness on certain topics.</i> ”
Social	Trainings and workshops	HSM3 said, “ <i>Our HR organizes different trainings and workshops on different topics such hygiene and safety issues; we sometimes have them with some of the Jordanian government bodies such as JFDA.</i> ”
	Social events	PDM3 said, “ <i>R3 does not organize social events for us. I wish we did! Sometimes we just need a break with our colleagues to enjoy ourselves, but we do have good benefits.</i> ”
	Diversity	PDM3 said, “ <i>We provide a diverse mix of local, traditional and international products because we have a demand on a lot of different products depending on our different customers.</i> ”
	Community impact	HSS3 explained, “ <i>We have a range of job opportunities which anyone can apply for.</i> ”
	Safe and fair labor conditions	SCMr3 explained, “ <i>Our working hours are reasonable, we get our monthly salary on time and our work conditions are safe.</i> ”
	Employee benefits	HSS3 explained, “ <i>I believe we have good employee benefits; we are provided with private medical insurance, social security and monthly food coupons.</i> ”
	Truthful product labeling/descriptions	SCMr3 stated, “ <i>We do our best to ensure that all our products are labelled correctly; [...].</i> ”
	Customer health and safety	FFM3 said, “ <i>We make sure our customers and SC members that visit feel safe to come to R3 to either shop or talk business, we do this by providing good ventilation, heating and air conditioning, and everything needs to be clean.</i> ”
Economic	Profitability and Tax	FFM3 discussed, “ <i>The yogurt industries had to increase the price of yogurt by 20% since the government raised the tax on the yogurt industries, which led R3 to increasing the price of yogurt too.</i> ”
	Economic interests of external stakeholder	HSS3 discussed, “ <i>One of the Jordanian government bodies we collaborate with is the Ministry of Agriculture who provide us with regulations, and they are responsible to ensure we are following them such as inspection.</i> ”
	Competitive procurement	HSM3 explained, “ <i>The many ways for us to stay competitive in the market is for our procurement to make good and innovative decisions.</i> ”
	Customer satisfaction	SCMr3 said, “ <i>Making sure our customers are satisfied is important to us in order to build customer loyalty.</i> ”
	Efficient production and packaging	PDM3 explained, “ <i>Our yogurt and our yogurt packaging companies have good equipment which ensure efficient packaging and production.</i> ”

5.3.3.2 Observations for Case Study 3

Observations were conducted in July 2019 at the actor (R3), dyad level (a Central Slaughterhouse in Amman) and at network level (Jordanian Ministry of Agriculture (MoA)). Table 5.25 presents key findings at each level in the SC of R3. The findings from the observations, followed the observation protocol (Appendix H) and are consistent with the findings in the interviews. Discussions were based on the theoretical perspectives, themes and contextual factors identified from the interviews in case 3.

Table 5.25: Observations for SC of R3-Case Study 3 (Author's own work).

Observations for SC of Retailer 3			
Actor Level	Meeting at R3	Duration	40 minutes
		Observer	Participant observer
		Organized by	HR Manager at R3
		Topic	Handling waste
		What was revealed?	R3 is looking for different ways to handle waste. It was confirmed from the meeting that R3 currently has a contract with a company that collects their recyclable rubbish, paper, cardboard and plastic, daily two to three times a day. During the meeting, they discussed how they could recycle glass, as there is no recycling industry in Jordan that recycles glass so they discussed selling their recyclable glass to a company that would later send it to a European country to recycle the glass. R3 is now studying this issue and are looking for a feasible solution.
		Perspective/ Theme/Contextual factor covered	Innovation – Product Innovation – Handling waste Sustainability- Environmental – Recycling Innovation – Organizational Innovation - Sustainability vision Network- Resources - Financial Resources
	A tour at R3	Duration	25 minutes
		Observer	Participant observer
		Organized by	HR Manager at R3
		Topic	The researcher saw the area they collect their recyclable rubbish, the butchery, the refrigerators, and hygiene and safety signs.
		What was revealed?	The employees discussed with each other the different issues in the butchery such as hygiene, signs, hazards issues, how to use the equipment and ways to display the meat.
		Perspective/ Theme/Contextual factor covered	Innovation- Organizational Innovation -- Health and safety issues Network- Resources – Physical resources
Dyad Level	A meeting at a Central Slaughterhouse	Duration	45 minutes
		Observer	Non-participant observer
		Organized by	Hygiene and Safety Manager at R3
		Topic	Different certificates that the slaughterhouse must have and R3 must know about and regularly check.
		What was revealed?	R3 is aware of the certificates the slaughterhouse must have such as the health inspection certificate, licensing authority of practice from the Ministry of Health, Halal certificate, licensed veterinarian, HACCP and ISO food 22000. The slaughterhouse provides a certificate to their buyers indicating the way they were slaughtered and that the veterinarian diagnosed them. The slaughterhouse also stamp the carcass which indicates when the beef has been slaughtered, its expiry date and depending on the color of the stamp whether the beef is local or imported. However, it was exposed that the stamp on the carcass is not clear.
		Perspective/ Theme/Contextual factor covered	Innovation – Organizational Innovation – Certificates Innovation – Organizational Innovation - Health and safety issues

Network Level	A tour at Central Slaughterhouse	Duration	25 minutes
		Observer	Non-participant observer
		Organized by	Hygiene and Safety Manager at R3
		Topic	The researcher saw the slaughter room, refrigerators, preparation room, certificates, the stamp for carcass, hygiene and safety signs and the refrigerated vehicles.
		What was revealed?	There is collaboration between R3 and a Central Slaughterhouse in Amman as well as a good relationship. The slaughterhouse is concerned with sustainability, for example how they handle waste such as the cowhide; they sell the cowhide to leather industries to be used for different leather products. They also mentioned the trainings and workshops they attend with R3 on environmental awareness.
		Perspective/ Theme/Contextual factor covered	Sustainability- Environmental – Environmental awareness Innovation – Process Innovation - Handling waste Network – Resources – Physical Resources Innovation- Organizational Innovation -- Health and safety issues
	A meeting with (MoA)	Duration	45 minutes
		Observer	Non-participant observer
		Organized by	Supply Chain Manager at R3
		Topic	The meeting focused on an action plan to strengthen resilience of livestock sector.
		What was revealed?	More support needs to be provided for the farmers, modernizing livestock agricultural guidance and awareness, and restructuring the ministry and the environmental policy to recover better in terms of livestock agriculture. They also discussed managing water and health and safety issues at the farm.
		Perspective/ Theme/Contextual factor covered	Innovation – Organizational Innovation - Health and safety issues and Environmental policy Sustainability- Environmental – Managing water and Environmental awareness
	A tour at (MoA)	Duration	35 minutes
		Observer	Non-participant observer
		Organized by	Supply Chain Manager at R3
		Topic	The researcher visited the beef packaging's warehouse and their main rooms; saw their equipment and some secondary data.
		What was revealed?	There is collaboration between R3 and MoA. However, it was exposed that R3 are in need of more knowledge and information of the agriculture problems and how to be more sustainable. In certain topics R3 can assist the MoA if they allowed them but their cultural mentality is a barrier.
		Perspective/ Theme/Contextual factor covered	Sustainability- Environmental – Environmental awareness Network – Resources – Information Resources and Physical resources Entrepreneurship – Corporate Entrepreneurship - Culture

* *Participant Observer*: the researcher would participate with the participants.

* *Non-Participant Observer*: the researcher would not participate with the participants.

5.3.3.3 Secondary Data for Case Study 3

Secondary data was collected and analyzed; Table 5.26 presents key findings at R3. It was evaluated that the secondary data is consistent with the findings in the interviews and observations. The information chosen is in line with the perspectives, themes and contextual factors identified from the case interviews in R3.

Table 5.26: Secondary Data for R3-Case Study 3 (Author's own work).

Secondary Data for Retailer 3	
Date: Researcher collected data	July 2019
Source: Access to Archival Records and Document Data	<i>Documents:</i> From websites of the retailer, Government websites of sustainability projects and reports and Jordanian Drug and Food Association website <i>Archival Records:</i> Retailer project surveys (2017), Description of Stakeholders and Demographic Details (2018)
Key example of a finding: ▪ Service on Website of R3 (2019)	On their online shopping service, they discuss that they contracted with 'Company Y', which an employee from 'Company Y' shops at R3 and delivers the products to the customer from R3, the customer pays for the products and delivery service once they receive their items. R3 discussed how implementing this environmentally-friendly technology helped in seizing the market opportunity for their diverse customers that simply cannot always physical go shopping at R3. Providing this service had an impact on their community since it created customer retention and this service helped boost their reputation and brand image.
Perspective/Theme/Contextual factor covered	Innovation- Product Innovation - Seizing market opportunities Innovation- Product Innovation- Adopting environmentally-friendly technologies Sustainability – Social - Community impact and Diversity Network- Actor positioning – Reputation and Brand image
Key example of a finding: ▪ Report on Website of Jordanian Drug and Food Association (JDFA) (2019) ▪ Stakeholder Report (2017-2019)	One of the available reports examined, discussed the collaboration and showed the commitment between R3, a Central Slaughterhouse and the Jordanian Drug and Food Association, where they discuss several topics such as refrigerated vehicles, refrigerators, various certificates such as hygiene.
Perspective/Theme/Contextual factor covered	Network- Resources – Physical Resources Innovation- Organizational Innovation -- Health and safety issues and Certificates Network- Actor Positioning – Commitment

5.3.4 Case Study 4- Food Retailer (R4)

R4 is a national retailer. R4 and its branches are a part of a bigger organization. The organization consists of R4 chain, clothes, toys store and bookshop. R4 is full of pride of its Jordanian roots. R4 is a retail pioneer in Jordan. R4 was established in the early 2000's with its headquarters located in Amman, Jordan. R4 provides customers with a great variety of food products at high quality. R4 sells local beef and imports beef from eight countries, for example Europe and USA. R4 is contracted with nine different local yogurt industries, imports three different yogurt brands, as well as three delicatessen companies, which all provide them with yogurt and other dairy products. The beef they purchase from a Central Amman Slaughterhouse is transported and distributed by their suppliers to all branches of R4 depending on the orders. R4 is collaborating with one of the first 'Towards Zero Waste Initiatives' in Jordan and R4 is the first retailer in Jordan to open a recycling center on the grounds of its headquarters. With a motto of "Recycle today for a greener tomorrow" (R4 Website, 2019). R4's aims can be summarized, minimize damage to the environment, enhance social and economic benefits, meet customers' demands and ensure the best shopping experience (R4 Website, 2019). Table 5.27 provides descriptions on the five interviewees for case study 4, R4.

Table 5.27: Demographics of Interviewees-Case Study 4. (Author's own work).

Characteristics	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
Job Title in R4	Fresh Food Manager (FFM4)	Product Development Manager (PDM4)	Supply Chain Manager (SCMr4)	Head of Sustainable Sourcing (HSS4)	Hygiene and Safety Manager (HSM4)
Age	45-55	25-35	35-45	25-35	35-45
Gender	Female	Female	Male	Male	Male
Education Level	MSc	MSc	DBA	BSc	BSc
Country of Education	USA	Jordan	UK	Jordan	Jordan
Years of Experience	23	12	16	10	18

5.3.4.1 Insights on SOI in food SCM for Case Study 4

The five interviews were conducted in April 2019 in Jordan. The majority of the interviewees were aware of food SCM as mentioned by SCMr4, "*We manage our food supply chain with those we have mutual goals and benefits in order to have better financial and non-financial performance. Our supply chain is all about the relationships and network we form with other suppliers and different customers to create and add value on our processes and products.*" Based on the results found, the interviewees presented sufficient understanding of SOI in food SC. This is explained by HSS4 who indicated, "*I believe our food chain has great actors, which we engage with in order to generate and implement innovations towards sustainability.*"

The following are findings on the key insights from the key perspectives: **network, entrepreneurship, innovation and sustainability** at all three levels of actor, dyad and network, on SOI in food SC in R4.

a) Network

All the interviewees provided relevant discussion on network and have knowledge of it. They highlighted the importance of implementing network, either actor positioning, activities or resources. In consistence with this, HSS4 explained, *“In my opinion, I consider R4 very well incorporated in our network, we have many activities, relationships and resources with different members of our supply chain.”* Key representative quotations are provided in Table 5.28.

Actor: From analyzing the five transcripts for R4, five contextual factors emerged. These are position imbalance, leadership, reputation, brand image and commitment. The majority of interviewees discussed the **position imbalance** of their retailer. Some interviewees believe **leadership** is a significant role at R4. The majority of interviewees discussed **commitment** within their retailer and other members in the supply chain. The overall agreed that maintaining a good **reputation** and **brand image** is essential.

Activities: Four contextual factors emerged from analyzing the five transcripts for R4. These are planning, organizing, controlling and exchange activities. The interviewees discussed different activities they share within their organization and other actors such as planning, organizing, controlling and exchange activities. All the interviewees discussed **planning activities**. The majority of interviewees mentioned working on **organizing activities**. Most of the interviewees highlighted their **controlling activities** at R4. The majority of interviewees discussed **exchange activities** applied at R4.

Resources: From analyzing the five transcripts for R4, four contextual factors emerged. These are financial, information, physical and personnel resources. The overall responses from the interviewees highlighted the significance of **financial resources** they need at all three levels. All the interviewees explained the importance of **physical resources** needed in order to achieve their goals at actor, dyad and network level. The majority of the interviewees discussed their need of **information resources**. Several interviewees mentioned their **personnel resources** at their retailer.

Table 5.28: Network Perspective-Themes, Contextual Factors and Representative Quotations (Case 4)

Theme	Contextual Factor (Coding category)	Representative Quotations
Actor Positioning	Position Imbalance	SCMr4 explained, <i>“In my opinion, the retailer is power in the supply chain. For instance, we were doing business with a delicatessen company, we regularly do health, and safety tests in a laboratory. The sample we took from their yogurt product failed, we gave them a second chance to improve, but in their following test, their sample failed again. We stopped doing business with them. We contacted them to inform them we know what the standards are and how your company can reach them and that if you want to do business with us again let us help you by providing our experience and knowledge. At first, they did not want our help but within a short period, they contacted us to help and support them. And look at them now expanding their company, selling to the biggest retailers in Jordan and now exporting.”</i>
	Leadership	PDM4 explained, <i>“I believe having employees with good leadership skills is important as they guide and motivate their colleagues to be innovative, achieve our aims and much more.”</i>
	Reputation	FFM4 explained, <i>“I believe in order to survive our competitive market we need to build and maintain a great reputation, along with having a good brand image in the eyes of the public.”</i>
	Brand Image	
	Commitment	HSS4 said, <i>“I believe building relationships, trust and commitment with our colleagues at R4, with our suppliers, and basically our supply chain is essential, in order to have open communications and should lead to success.”</i>
Activities	Planning activities	HSM4 said, <i>“When we decide to do something, we need to plan, we have to outline our aims and determine any needed resources.”</i>
	Organizing activities	PDM4 explained, <i>“Every few months we organize meetings with our beef supplier to discuss a variety of issues in addition to providing feedback.”</i>
	Controlling activities	FFM4 said, <i>“We have detailed rules for hygiene and safety issues in our butchery, to keep our employees in line of these rules, if an employee doesn’t follow a rule he/she gets an internal ticket. Our HR controls these issues, tickets and consequences. By doing this we enhance our performance.”</i>
	Exchange activities	SCMr4 stated, <i>“Just last week we had a meeting with one of our government bodies to discuss a technological solution to exchange data and information between us to avoid delay in activities, schedules and etc., [...]”</i>
Resources	Financial resources	HSS4 discussed, <i>“Sometimes when we have an innovative idea we cannot implement it because we do not have adequate financial resources. For example, when we started to implement LED lighting we started with our main branch and with time and suitable finance, we expanded to all our branches. I believe that having good financial resources is a key point at R4 to achieve our goals.”</i>
	Information resources	As explained by FFM4, <i>“Here at R4 we have a system we use to exchange data and information within our retailer and some of our suppliers; it is called the ERP system, which stands for Enterprise Resource Planning System.”</i>
	Physical resources	SCMr4 said, <i>“As we frequently have meetings, trainings, workshops and exhibitions between our suppliers and government bodies concerning different issues such as inspections, certificates, hygiene and safety, regulations, and so on, it is important to have appropriate physical resources at R4.”</i>
	Personnel resources	As HSM4 explained, <i>“When it comes to recruiting, training, and managing staff our HR are the best. We also work together with some suppliers and government bodies to improve ourselves and hear about their experiences.”</i>

b) Entrepreneurship

The overall responses showed relevant understanding of entrepreneurship. They emphasized the significance of employing entrepreneurship, either corporate entrepreneurship, intrapreneurship or entrepreneurial HR, at their retailer in order to succeed. In consistence with this, HSS4 said, *“Everyone in Jordan is talking about entrepreneurship and I think entrepreneurship is essential in R4. Thinking like entrepreneurs is important to build innovative ideas that lead our organization to success.”* Key representative quotations are provided in Table 5.29.

Corporate Entrepreneurship: Analyzing the five transcripts for R4, six contextual factors emerged. These are stages of implementing innovative ideas, retailer supports innovation, retailer provides resources and easy accessibility, retailer structures for an intrapreneurial environment, develops individual managers for CE and culture. All discussed that R4 **encourages their employees to initiate innovative ideas and the stages their retailer goes through to these innovative ideas**. The majority highlighted the **resources provided** at R4. All agreed that R4 does **provide an intrapreneurial environment** and that **culture** has an effect on them. Some interviewees discussed that R4 tries to **develop individual managers for corporate entrepreneurship**.

Intrapreneurship: Analyzing the five transcripts for R4, five contextual factors emerged. These are firm takes the risk and responsibility, are innovative and creative, apply firm’s management policies and structure, use of firms’ resources efficiently and fixed salary, bonus/reward if any. The majority explained that having intrapreneurs in their R4 is essential and that they need to be **creative and innovative**. The overall responses agreed that if an innovative idea was to be implemented the **organization take the risk and responsibility** and not the employees. Several interviewees **follow the organizations’ management policies and structure** when constructing an innovative idea and to **efficiently use R4s’ resources**. The majority revealed that if they did bring forward an innovative idea and R4 decided to implement then they would **receive a reward or bonus**.

Entrepreneurial HR: five contextual factors emerged from analyzing the five transcripts for R4. These are HR understand the whole context of their business, motivate and lead their employees, drivers of success, entrepreneurial thinking and good decision makers. The majority of the interviewees agreed that their **HR understand the whole context of their business**. Several interviewees highlighted the significance of **HR motivating and leading** their employees and that **HR are drivers of success**. The majority of the interviewees explained the importance of **HR thinking like entrepreneurs**, being innovative and are **good decision makers**.

Table 5.29: Entrepreneurship Perspective-Themes, Contextual Factors and Representative Quotations (Case 4)

Theme	Contextual Factor (Coding category)	Representative Quotations
Corporate Entrepreneurship	Stages of implementing innovative ideas	PDM4 explained, “Our employees are always motivated and encouraged to come up with innovative ideas and when they do they inform their manager. The idea goes through a few stages, considering if it is feasible, if so to develop it and then to promote and manage it. We have an ‘Initiative for the Best Idea’, which is when we distribute boxes within our company and all our branches and we encourage our employees to write their innovative ideas and place it in the box. [...].”
	Retailer supports innovation	FFM4 stated, “I think R4 does provide us with a good entrepreneurial atmosphere by having multidisciplinary teams and some time to ponder for any new ideas. [...].”
	Retailer structures for an intrapreneurial enviro.	
	Retailer provides resources/ accessibility	SCMr4 said, “We try our best to always provide adequate resources such as financial resources for any innovative idea.”
	Developing individual managers for corporate entrepreneurship	HSM4 mentioned, “We have great managers but our retail helps improve individual managers in terms of entrepreneurial aspects within our retail; [...].”
	Culture	FFM4 confirmed, “A challenge to succeed sometimes is the way some employees think which is influenced by our Jordanian culture for example, some employees would say something like why do we need extra time to think of new ideas, we have been doing it the old-fashioned way for years and it is successful why change?”
Intrapreneurship	Are innovative and creative	SCMr4 said, “I know that to be an entrepreneur they need to be creative an innovative, so why can’t we have entrepreneurs in our retail. I think having entrepreneurs is important as ideas can lead for success. [...].”
	Firm takes the risk and responsibility	FFM4 said, “One of our butchers had an innovative idea and informed R4, after it went through the implementation process it was not successful as anticipated but the risk and responsibility was all on R4.”
	Apply firms’ management policies and structure	SCMr4 explained, “Just to make sure everyone is on the same page, we are regularly reminded that we need to apply the organizations’ management policies and to efficiently use our resources.”
	Use of firms’ resources efficiently	
	Fixed salary + Bonus/reward (if any)	FFM4 explained, “If an innovative idea is implemented, the person or group who came up with the idea receives a cash prize or a reward like coupons, they get to choose, its nothing huge but as an encouragement to go on with great ideas.”
Entrepreneurial HR	Understand the whole context of their business	HSS4 said, “I believe HR need to recognize and understand everything at our retailer, thankfully ours do. HR is responsible for a lot more than we think, for example, organizing trainings and social events, controlling our internal tickets, etc.”
	Motivate and lead their employees	PDM4 explained, “I believe most of our HR managers encourage us to be innovative and to put our ideas in the box for the ‘Initiative for the Best Idea’, to lead constructively, to uphold our stay green, etc.”
	Driver of success	SCMr4 explained, “Our HR does lead us to success, I can evaluate this by considering the outcomes of our HR engaging with our SC.”
	Entrepreneurial thinking	FFM4 explained, “A few weeks ago we had a surprise inspection from one of our government bodies, if it was not for our HR manager who made a good decision, was innovative and really thought like an entrepreneur, it would not have opened so many doors for us.”
	Good decision makers	

c) Innovation

All the interviewees provided relevant discussions on innovation. They highlighted the positive influence of innovation within their retailer. As HSS4 explained, *“I believe innovation is what helps us survive in the market.”* Key representative quotations are provided in Table 5.30.

Product Innovation: For this theme, seven contextual factors emerged from analyzing the five transcripts for R4. These are staying competitive, seizing market opportunities, design for sustainability, packaging material, eco-labeling, life-cycle analysis and organic products. The overall responses discussed the importance of **staying competitive** and **seizing market opportunities**. The majority of the interviewees clarified they provide **organic products** at R4. Several interviewees mentioned **labelling their products into environmental categories** such as organic and recyclable. The majority of the interviewees discussed the importance of **designing practices for sustainability** such as energy saving properties, recyclability, eco-friendly materials, product shelf-life and reducing raw material. Several interviewees discussed **packaging material** at R4. Several interviewees explained the inventory process to manage **product life cycle** is to optimize inventory with consideration for inventory type related to customer demand.

Process Innovation: Six contextual factors emerged from analyzing the five transcripts for R4. These are managing cost, adopting environmentally friendly technologies, to raise industry standards in line with environmental performance, response to external pressures and regulatory changes, handling waste and logistics. The majority of the interviewees highlighted the significance of **responding to external demands** such as customer demand and government regulations. The majority of the interviewees discussed how they **handle waste**, such as air pollution. The majority of interviewees discussed their **efficient transportation networks and distribution channels**. All the interviewees agreed that it is important for R4 to **adopt environmentally friendly technologies**. Several interviewees clarified that R4 tries to **enhance their industry standards corresponding to environmental performance** and **gaining economic benefits**.

Organizational Innovation: Seven contextual factors emerged for this theme from analyzing the five transcripts for R4. These are certificates, stakeholders' management, engaging employees in developing a sustainable business, health and safety issues, sustainability vision, code of conduct and environmental policy. The overall responses discussed earning **certificates** such as ISO 22000 and HACCP. Some interviewees highlighted **codes of conduct** such as ethics and transparency at R4. The majority of the interviewees discussed **health and safety measures** and trainings. The majority of the interviewees discussed their **stakeholders' management** such as the contracts and communications between them. Some interviewees discussed **environmental policies**

implemented in the organization. Several interviewees mentioned designing and implementing visions based on sustainability. The overall responses agreed that R4 engages its employees in developing a sustainable business.

Table 5.30: Innovation Perspective-Themes, Contextual Factors and Representative Quotations (Case 4)

Theme	Contextual Factor (Coding category)	Representative Quotations
Product Innovation	Staying competitive	PDM4 said, <i>“We have nine local yogurt brands, we import three yogurt brands and have three brands of traditional Jordanian yogurt for the deli section. I believe having differentiation in products is a good way to stay competitive as we satisfy our market diversity. We always try to take advantage of any recognized market opportunities.”</i>
	Seizing market opportunities	
	Design for sustainability	PDM4 explained, <i>“When we search for beef suppliers to import from we look at the shelf-life of the product, financial issues, environmental benefits, any governmental regulations and much more.”</i>
	Packaging material	SCMr4 highlighted, <i>“The containers we sell our deli products such as traditional yogurt is sold in recyclable containers, which are clearly labelled; [...]”</i>
	Eco-labeling	HSM4 explained, <i>“I think it is important for products to be clearly labelled if they are organic or if the packaging is recyclable, as this helps the consumer differentiate the organic products and if the packaging is recyclable so they can send it to be recycled. Many of our customers send their recyclable rubbish to our recycling center.”</i>
	Life-cycle analysis	As FFM4 said, <i>“It is important to store our inventory in the proper way for it to last longer.”</i>
	Organic products	FFM4 said, <i>“We provide organic products such as yogurt and other dairy products and fresh products. With the demand of our diverse customers, we try to always provide them with a variety of organic dairy products. We found a source of imported organic meat however, the price is very expensive and this will not suit the majority of our customers but we are searching for more sources that are reasonable.”</i>
Process Innovation	Managing cost	HSS4 stated, <i>“We are looking to better manage our resources and costly processes to enhance our environmental issues and economic benefits.”</i>
	To raise industry standards in line with environmental performance	As SCMr4 said, <i>“I believe enhancing our environmental standards is very important and in turn increasing economic benefits.”</i>
	Adopting environmentally-friendly technologies	HSM4 stated, <i>“We implemented LED lights in all our branches. We even put LED lights in the refrigerators instead of the traditional lights, as the traditional lights give out a bit of heat in turn more power and energy is needed for the refrigerator to maintain the correct temperature and in turn more cost. We always look for better technologies that benefit the environment and us.”</i>
	Response to external pressures and regulatory changes	PDM4 said, <i>“A couple years ago, our customers made it clear when waiting to be serviced at the butchery; it gets chaotic with the customers figuring out who goes first. We responded quickly to this and we got a que machine. Now customers take a number depending on what they need such as poultry, meat and fish. We are always pushed into things from our customer demand and we need to respond quickly and wisely.”</i>
	Handling waste	HSS4 explained, <i>“As Jordan does not provide municipal recycling, we opened our own recycling center, which we send our recyclable rubbish and the community can send their recyclable rubbish as well; [...]”</i>

	Logistics	FFM4 explained, <i>“When the beef and other meats are distributed to our branches they are in refrigerated vehicles, we try to distribute quickly and safely and we only distribute once a day.”</i>
Organizational Innovation	Certificates	HSM4 stated, <i>“Our retailer is known for its high standards and quality of products and services. For us to maintain this reputation we are always looking for ways to improve ourselves. We are certified with ISO food 22000 and HACCP, having these certificates really does make a difference.”</i>
	Stakeholders management	HSS4 said, <i>“Last week all our butchers had a meeting with one of our government bodies, it revolved around health and safety issues, ethics, sustainability and a few other topics.”</i>
	Engaging employees in developing a sustainable business	FFM4 said, <i>“Just a few weeks ago we attended a workshop at one of our government bodies about different sustainability topics such as expanding our recycling center.”</i>
	Health and safety issues	SCMr4 explained, <i>“At the receiving area when our suppliers bring us yogurt and beef products we go through a checklist that consists of several issues to do with health and safety measures. We are provided with several trainings and workshops on health and safety issues; several of these trainings are facilitated with other chain members.”</i>
	Sustainability vision	HSM4 said, <i>“If you see our website you can see our retailer’s goals are based on sustainability and we work on a daily basis to achieve them.”</i>
	Code of conduct	PDM4 explained, <i>“When working within the retailer everything is transparent and ethically done. Part of our annual evaluation for our employees we make sure they have done their work ethically, on time, etc.”</i>
	Environmental policy	As FFM4 explained, <i>“We have policies about recycling, waste control, energy control and a few other environmental topics. Here at R4 we try our best to help keep the environment.”</i>

d) Sustainability

The overall responses from the interviewees provided relevant discussion on sustainability either environmental, economic or social related to their retailer. In consistence with this, PDM4 said, *“We are always trying to improve R4 in terms of being environmentally friendly, considering economic issues and providing to society.”* Key representative quotations are provided in Table 5.31.

Environmental: From analyzing the five transcripts for R4, four contextual factors emerged. These are managing water, energy control, recycling and environmental awareness. Several interviewees discussed how R4 **manages water**. All the interviewees emphasized the importance of **controlling their use of energy**. The overall responses discussed **recycling** at R4. The majority of the interviewees emphasized the importance of **environmental awareness** at R4.

Social: Eight contextual factors emerged from analyzing the five transcripts for R4. These are training and workshops, social events, diversity, community impact, safe and fair labor conditions, employee benefits, truthful product labeling and descriptions, and customer health and safety. All the interviewees underlined the different **trainings and workshops** provided at R4 for their employees. The overall of interviewees mentioned that R4 arranges **social events** for its employees. The majority of the interviewees discussed the **safe and fair labor conditions** at R4. Some interviewees discussed **employee benefits** provided at R4. All the interviewees discussed **diversity** at R4. Several interviewees discussed the significance of **product labeling and descriptions to be truthful**. The majority of the interviewees discussed the **health and safety of their customers**. All the interviewees discussed R4’s **impact on the community**.

Economic: From analyzing the five transcripts for R4, five contextual factors emerged. These are tax, economic interests of external stakeholder, competitive procurement, customer satisfaction, and efficient production and packaging. The overall responses highlighted the significance of **efficient production and packaging**. Some interviewees explained the importance of **competitive procurement** at R4. All the interviewees underlined the **economic interests of their external stakeholders**. The overall responses highlighted **profitability and tax** issues in businesses. The majority of the interviewees emphasized the importance of their **customers’ satisfaction**.

Table 5.31: Sustainability Perspective-Themes, Contextual Factors and Representative Quotations (Case 4)

Theme	Contextual Factor (Coding category)	Representative Quotations
Environmental	Managing water	HSM4 clarified, <i>“We record our total water use, check for leaks and we have hand detectors on taps; these are a few ways we manage water at R4.”</i>
	Energy control	HSS4 stated, <i>“We try our best to manage our use of energy. We switched from the regular light bulbs to LED at all branches and this nearly cut our cost by half.”</i>
	Recycling	SCMr4 discussed, <i>“We opened a recycling center on the grounds of our headquarters for anyone to send their recyclable rubbish too. We R4 divide our recyclable rubbish and send it to the center to be recycled. Our recycling center also distributes small paper bags to its customers to put in their cars for any recyclable rubbish.”</i>
	Environmental awareness	PDM4 said, <i>“We attend different meetings, trainings, workshops, and conferences on environmental topics, to provide knowledge around this; sometimes our yogurt companies attend.”</i>
Social	Trainings and workshops	FFM4 said, <i>“Our HR arranges trainings and workshops to attend at R4 or with other chain members like our slaughterhouse or our government bodies. They usually range from environmental awareness, recycling, certificates, customer satisfaction, hygiene and safety issues and much more.”</i>
	Social events	SCMr4 said, <i>“R4 organizes events for us like: Family Fun Day, treasure hunt, barbecuing, football tournament, and we even have The Employee of the Quarter.”</i>
	Diversity	HSS4 stated, <i>“We provide a huge variety of products such as beef and yogurt. We have imported products, local products, organic products, etc. We try our best to keep up with our diverse customer demands.”</i>
	Community impact	HSM4 explained, <i>“I believe we are influencing our community to recycle, ever since we opened our recycling center. We are also the only food retailer in Jordan that has female butchers; I feel that this did affect the community in a positive way to encourage women. We are the only food retailer in Jordan that has nursing rooms for breastfeeding mothers!”</i>
	Safe and fair labor conditions	PDM4 explained, <i>“I feel safe when I am at work, I have good working hours compared to my wage.”</i>
	Employee benefits	HSM4 explained, <i>“We are provided with great employee benefits like: food discounts, social security and private medical insurance.”</i>
	Truthful product labeling and descriptions	PDM4 said, <i>“All our products are labeled and have the correct description on them.”</i>
	Customer health and safety	FFM4 explained, <i>“We have employees that ensure safe and clean aisles and clean facilities and generally a clean environment at all our branches.”</i>
Economic	Profitability and Tax	SCMr4 said, <i>“A few days ago we had a meeting about the tax rise in Jordan and that would affect us in cost increase.”</i>
	Economic interests of exte. stakeholder	HSM4 discussed, <i>“One of our many stakeholders is the Jordanian government, they collect our taxes.”</i>
	Competitive procurement	FFM4 discussed, <i>“Our procurement department is very good at their job. One of their responsibilities is collecting all the requests for purchasing and getting the best prices from suppliers. [...]. They really need to make good decisions.”</i>
	Customer satisfaction	HSS4 said, <i>“We have a loyalty card for our customers called ‘The Card’, which we can later study our customers’ needs and from their gain the satisfaction of our customers.”</i>
	Efficient production and packaging	PDM4 said, <i>“We have great equipment which guarantees efficient packaging; we try to stay up-to-date with our equipment.”</i>

5.3.4.2 Observations for Case Study 4

Observations were conducted in April 2019 at the actor (R4), dyad level (one of the yogurt industries) and at network level (one of the yogurt distributors). Table 5.32 presents key findings at each level in the SC of R4. The findings from the observations followed the observation protocol (Appendix H) and are consistent with the findings in the interviews for R4 and these are discussed based on the theoretical perspectives, themes and contextual factors identified from case 4.

Table 5.32: Observations for SC of R4-Case Study 4 (Author's own work).

Observations for SC of Retailer 4			
Actor Level	Meeting at R4	Duration	60 minutes
		Observer	Participant observer
		Organized by	HR Manager at R4
		Topic	Stages of implementing innovative ideas
		What was revealed?	R4 motivates and supports its employees to be innovative, they have an 'Initiative for the Best Idea', where they distribute boxes in all their branches for their employees to write their innovative ideas on a piece of paper and place it into the box. Later the best idea goes through stages of implementation, which are conceiving, fostering, launching and managing an innovative idea and the employee receives a reward. It was confirmed that one of the challenges R4 faces when trying to encourage employees to be more innovative and be entrepreneurs is the mentality of some of employees who are influenced by culture not to change.
		Perspective/ Theme/factor covered	Entrepreneurship – Corporate entrepreneurship - Stages of implementing innovative ideas and Retailer supports innovation and culture.
	A tour at R4	Duration	30 minutes
		Observer	Participant observer
		Organized by	HR Manager at R4
		Topic	The researcher saw the receiving dock, butchery, beef and yogurt display refrigerators, monitored storage refrigerators, nurse office, hygiene and safety signs and their recycling center.
		What was revealed?	R4 have a checklist to go through for every delivery they receive at the receiving dock for beef, such as health and safety, temperature and damaged packaging. They cooperated with each other transparently to complete the task successfully.
Dyad Level	A meeting with yoghurt industry	Perspective/ Theme/Contextual factor covered	Innovation - Product Innovation - Life-cycle analysis Network- Resources- Physical Resources Innovation- Organizational Innovation- Health and safety and Code of conduct Innovation- Process Innovation- Handling waste Sustainability- Environmental- Recycling/Social- Community impact
		Duration	45 minutes
		Observer	Non-participant observer
		Organized by	HR Manager and Fresh Food Manager at R4
		Topic	Packaging, labelling, and description of the yogurt product
		What was revealed?	The containers used to package the yogurt are recyclable and are labelled recyclable for consumer's knowledge. R4 is aware that the yogurt industry provides organic yogurt and it is labelled for the consumer to distinguish the organic yogurt. The yogurt containers are labelled in two languages hence R4 discussed with the yogurt industry to include the recycling logo on the yogurt container on both sides. R4 understands the importance of organic products.
	A tour at yoghurt	Perspective/ Theme/ factor covered	Innovation - Product Innovation - Eco-labeling and Organic products Sustainability – Social - Truthful product labeling and descriptions
		Duration	30 minutes
		Observer	Non-participant observer
		Organized by	HR Manager and Fresh Food Manager at R4
		Topic	The pasteurizing room and machinery, different packaging machinery, refrigerators, hygiene and safety signs, certificates and refrigerated vehicles.

Network Level		What was revealed?	There is commitment and a good relationship between R4 and the yogurt industry. R4 considers the packaging systems available to be efficient.
		Perspective/ Theme/Contextual factor covered	Innovation- Product innovation - Packaging material Innovation- Organizational Innovation - Health and safety issues and Certificates Network – Actor positioning – Commitment/ Resources – Physical resources
	A meeting with yogurt distributor	Duration	30 minutes
		Observer	Non-participant observer
		Organized by	Fresh Food Manager at R4
		Topic	Refrigerated vehicles
		What was revealed?	R4 inspects their distributor's vehicles on a daily base when the products are distributed to each branch. R4 inspects hygiene and temperature of the vehicle.
		Perspective/ Theme/factor	Network- Resources – Physical Resources Innovation- Organizational Innovation -- Health and safety issues
	A tour at yogurt distributor	Duration	30 minutes
		Observer	Non-participant observer
		Organized by	Fresh Food Manager at R4
		Topic	The researcher saw the yogurt distributor's warehouse and refrigerated vehicles.
		What was revealed?	One challenge the yogurt distributor and R4 face is finding efficient transportation networks and distribution channels to distribute the yogurt and dairy products.
		Perspective/ Theme/ factor covered	Network- Resources – Physical Resources Innovation- Process Innovation - Logistics

* *Participant Observer*: the researcher would participate with the participants.

* *Non-Participant Observer*: the researcher would not participate with the participants.

5.3.4.3 Secondary Data for Case Study 4

Secondary data were collected and analyzed; Table 5.33 presents key findings at R4. It was evaluated that the secondary data is consistent with the findings in the interviews and observations. The information chosen is in line with the themes and contextual factors identified in the interviews.

Table 5.33: Secondary Data for R4-Case Study 4 (Author's own work).

Secondary Data for Retailer 4	
Date: Researcher collected data	April 2019
Source: Access to Archival Records and Document Data	<i>Documents</i> : from Websites of the retailer, Government websites of sustainability projects and reports <i>Archival Records</i> : Retailer project surveys (2018), Financial Records (2018), Description of Stakeholders and Meeting Minutes (2019)
Key example of a finding: ▪ Financial Records (2018)	One project examined, discussed the implementation of the solar panels at R4, it showed that their use of electricity has reduced and their cost reduced by 50% just in the first year. R4 mentioned when they implemented the solar panels that it raised their industry standards in regards with environmental performance.
Perspective/Theme/Contextual factor covered	Innovation – Process Innovation- environmentally-friendly technologies and managing cost and industry standards in line with environmental performance
Key example of a finding: ▪ Report from Website of R4 (2019) ▪ Meeting Minutes (2019)	R4 not only motivates and encourages innovation and entrepreneurship but also discusses entrepreneurship in its sustainability report, in consistence with this, R4 CEO said, “Even more it is the entrepreneurial brainchild of a team of dedicated retail market professionals committed to excellence in all aspects of the term” (R4 CEO, R4 Website, 2019).
Perspective/Theme/Co. factor	Entrepreneurship- Corporate entrepreneurship -Retailer supports innovation
Key example of a finding: ▪ Report from Website of R4 (2019)	R4 proudly announced their win of the ‘Fastest Growing Business Award in Jordan’ by The Jordan Business Awards in September 2019; they thanked their customers for their constant support and trust (R4 Website, 2019).
Perspective/Theme/Contextual factor covered	Network – Actor Positioning – Reputation Sustainability- Social – Community impact/ Economic- Customer satisfaction

5.3.5 Case Study 5- Food Retailer (R5)

R5 is a national retailer, which provides customers with a great variety of food products, household products and garden products. R5 was established in the early 2000's with its headquarters located in Amman, Jordan. It is one of the largest hypermarket and supermarket chains in Jordan, with around 20 branches and is engaged in expanding more. According to a survey done by Alisa Nielsen in 2018, R5 was classified as number one retailer in Jordan in regards to the number of branches and their location in order to reach more customers. R5 has over 1000 suppliers from 18 countries across Europe, Arabic and Asian countries, forming a wide import network to resource their diverse products. R5 has reached a strategic plan to have financial stability where they buy their own land and build, or buy buildings instead of renting in order to establish future assets, which helps them to guarantee economic sustainability. R5 sells local beef and imports beef from different countries. R5 is contracted with eight different yogurt industries as well as three delicatessen companies, which all provide them with yogurt and other dairy products. The beef they purchase from a Central Amman Slaughterhouse is transported and distributed by their suppliers to all branches of R5 depending on the orders. R5's goal is: *"Our goal is to reach all Jordanian houses in all cities across the country offering diverse products with competitive prices"* (R5 Website, 2019). Table 5.34 provides descriptions on the five interviewees for case study 5, R5.

Table 5.34: Demographics of Interviewees-Case Study 5 (Author's own work).

Characteristics	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
Job Title in R5	Fresh Food Manager (FFM5)	Product Development Manager (PDM5)	Supply Chain Manager (SCMr5)	Head of Sustainable Sourcing (HSS5)	Hygiene and Safety Manager (HSM5)
Age	45-55	45-55	35-45	25-35	35-45
Gender	Male	Male	Male	Male	Male
Education Level	BSc	BSc	BSc	College	College
Country of Education	Jordan	Jordan	Jordan	Jordan	Jordan
Years of Experience	19	24	17	9	16

5.3.5.1 Insights on SOI in food SCM for Case Study 5

The five interviews were conducted in April 2019 in Jordan. The interviewees provided relevant discussions on the concept of food SCM based on their knowledge. They stated the importance of their supply chain to manage the flow of products. FFM5 stated, *"We really have a long supply chain as it requires us to manage different functions inside our retailer to be efficient in working with other suppliers whom deliver our inventories to our storage or directly to the showrooms. Food supply chain is sensitive as we deal with fresh products such as meat and yogurts as those need good collaboration along our existing chain."* Based on the results found, the interviewees

presented sufficient understanding of SOI in food SCM. PDM5 explained, *“I believe we, R5, and some of our partners work on developing new products, services and/or technologies that could minimize costs and serve the environment better.”* The following are findings on the key insights from the key perspectives: **network, entrepreneurship, innovation and sustainability** at all three levels of actor, dyad and network, on SOI in food SCM for R5.

a) Network

The overall responses from the interviewees provided relevant discussion on network. They underlined the significance of implementing network, either actor positioning, activities or resources. In consistence with this, PDM5 said, *“In my opinion, R5 has a good relationship with its network; we collaborate with them in meetings and other activities.”* Key representative quotations are shown in Table 5.35.

Actor: Five contextual factors emerged from analyzing the five transcripts for R5. These are position imbalance, leadership, reputation, brand image and commitment. The overall responses agreed that maintaining a good **reputation** and **brand image** is essential. All the interviewees discussed their retailers’ **position imbalance**. Some interviewees mentioned **commitment** within the retailer and other SC members. The majority of the interviewees mentioned **leadership** is important in R5.

Activities: From analyzing the five transcripts for R5, four contextual factors emerged. These are planning, organizing, controlling and exchange activities. The interviewees discussed different activities they share within their organization and other SC actors. Some interviewees discussed **planning activities** applied at R5. Several interviewees mentioned working on **organizing activities**. A few interviewees highlighted their **controlling activities** at R5. The overall responses underlined **exchange activities** applied at R5.

Resources: Four contextual factors emerged from analyzing the five transcripts for R5. These are financial, information, physical and personnel resources. The majority of the interviewees discussed the importance of **financial resources** they need at all three levels. Several interviewees discussed their need of **information resources**. The majority of the interviewees explained the importance of **physical resources** needed in order to achieve their goals at actor, dyad and network levels. A few interviewees mentioned their **personnel resources** at R5.

Table 5.35: Network Perspective-Themes, Contextual Factors and Representative Quotations (Case 5)

Theme	Contextual Factor (Coding category)	Representative Quotations
Actor Positioning	Position Imbalance	SCMr5 stated, <i>“Primary we focus on increasing our sales and expanding our branches in Jordan to reach more customers. Our relationships with our suppliers is merely for them to supply us with their products, we don’t assist them with issues based on our experience or knowledge.”</i>
	Leadership	HSM5 explained, <i>“We had a few managers who did not have the best leadership skills and that hurt our productivity, they also didn’t know how to lead and engage with our other chain members.”</i>
	Reputation	HSS5 stated, <i>“Surviving in our competitive market is hard work, to ensure this we need to preserve our reputation and image.”</i>
	Brand Image	
	Commitment	FFM5 said, <i>“Building commitment and trust within our retail is very important. We expect our suppliers to be committed to providing us our requested products on time when we agree on it and in turn we need to be committed to paying them.”</i>
Activities	Planning activities	PDM5 stated, <i>“When we plan for anything it needs to have a purpose and we have to check for required resources.”</i>
	Organizing activities	FFM5 explained, <i>“A couple of weeks ago we organized a meeting with one of yogurt suppliers to negotiate whenever we will accept to purchase their new products.”</i>
	Controlling activities	HSM5 discussed, <i>“On a daily basis, in the morning when our yogurt suppliers bring us their dairy products our employees are responsible for controlling the situation by checking the temperature of the vehicle, the products temperature, the correct amount is available, any damages, etc.”</i>
	Exchange activities	SCMr5 explained, <i>“At the end of every year we provide a sheet with our annual sales revenue for all our branches for our government in order to pay our taxes. We have the option to send a printed sheet to the government and in return we get our bill; but the other option we prefer to use is to provide this sheet electronically on a security-protected website for the government and in turn we receive our bill electronically and then we transfer the amount by e-banking.”</i>
Resources	Financial resources	HSS5 stated, <i>“When we plan to expand more branches across Jordan we need financial resources for R&D as well as paying for all new assets. Having the adequate financial resources is always an issue for us.”</i>
	Information resources	PDM5 said, <i>“We have data exchanged between us and the government via a security-protected website called e-tax owned by the government.”</i>
	Physical resources	FFM5 explained, <i>“We have several different meeting rooms in all our branches which differ in size. We use these rooms for meetings within our retail, with our suppliers and the government bodies.”</i>
	Personnel resources	HSM5 stated, <i>“We use to collaborate with one of the slaughterhouses where they use to send us an expert to train our employees in butchery, but we stopped doing this. Now our employees take courses on butchery.”</i>

b) Entrepreneurship

All the interviewees provided relevant discussion on entrepreneurship. They emphasized the importance of employing entrepreneurship, either corporate entrepreneurship, intrapreneurship or entrepreneurial HR, at their retailer in order to succeed. In consistence with this, SCMr5 said, *“Thinking like an entrepreneur and being innovative does make a positive difference here at R5.”* Key representative quotations are shown in Table 5.36.

Corporate Entrepreneurship: Analyzing the five transcripts for R5, six contextual factors emerged. These are stages of implementing, retailer supports innovation, retailer provides resources and easy accessibility, retailer structures for an intrapreneurial environment, developing individual managers for corporate entrepreneurship and culture. The overall responses discussed the **stages their retailer goes through to implement innovative ideas** from their employees. Most of the interviewees discussed where R5 is in regard to **supporting innovation** and **structuring an intrapreneurial environment**. The majority agreed that R5 does not provide a structured intrapreneurial environment. A few interviewees discussed that R5 tries to **develop individual managers for corporate entrepreneurship**. Several interviewees mentioned the **resources provided** at R5. Some interviewees discussed that **culture** influences R5 in regards to implementing CE.

Intrapreneurship: Five contextual factors for intrapreneurship emerged from analyzing the five transcripts for R5. These are firm takes the risk and responsibility, are innovative and creative, apply firm’s management policies and structure, use of firms’ resources efficiently, and fixed salary plus bonus/reward if any. Several interviewees discussed that having intrapreneurs in their organization is essential and that they need to be **creative and innovative**. The majority of the interviewees discussed that they have to **follow the organizations’ management policies and structure** when constructing an innovative idea and to **efficiently use the organizations’ resources**. All mentioned that if an innovative idea was to be implemented the **organization does take the risk and responsibility**. The overall responses revealed that if they did bring forward an innovative idea and the organization decided to implement then they would not receive a **reward or a bonus**.

Entrepreneurial HR: For this theme, five contextual factors emerged from analyzing the five transcripts for R5. These are HR understand the whole context of their business, motivate and lead their employees, drivers of success, entrepreneurial thinking and good decision makers. Some interviewees discussed the importance of **HR motivating and leading** their employees and that HR should be **drivers of success**. Several interviewees explained the importance of **HR thinking like entrepreneurs**, being innovative and are **good decision makers**. A few interviewees discussed whether their **HR understands the whole context of their business**.

Table 5.36: Entrepreneurship Perspective-Themes, Contextual Factors and Representative Quotations(Case 5)

Theme	Contextual Factor (Coding category)	Representative Quotations
Corporate Entrepreneurship	Stages of implementing innovative ideas	FFM5 explained, <i>"If and when an employee has an innovative idea they either inform their manager or the top manager of R5. The idea goes through steps like is it feasible, how to ensure customers will be interested, how to develop it and launch it, and how will we manage it."</i>
	Retailer supports innovation	PDM5 stated, <i>"They tell us to be innovative and motivate us to be innovative but we do not have the environment to do that. We are expected to be innovative but we are not provided any time to think and discuss what we can do. I think we need support from R5 in structuring a better environment for us to be innovative and entrepreneurs."</i>
	Retailer structures for an intrapreneurial environment	
	Retailer provides resources and easy accessibility	HSS5 said, <i>"Being a retailer with around 20 branches across Jordan, we sometimes run low on financial resources which lead to us postponing an innovative idea. [...] We do have other resources available at R5 but are not all easy to access."</i>
	Developing individual managers for corporate entrepreneurship	SCMr5 said, <i>"I believe R5 should help train and develop more managers and employees with different skills and characteristics of an entrepreneur."</i>
	Culture	FFM5 said, <i>"We always try our best to be innovative and think like entrepreneurs in R5 but I believe that our culture is kind of holding us back; the mentality of some employees that just resist change."</i>
Intrapreneurship	Are innovative and creative	HSM5 explained, <i>"I believe having employees that have the skills and think like entrepreneurs is very important as they would be innovative and think outside of the box, which can lead to breakthroughs."</i>
	Firm takes the risk and responsibility	HSS5 said, <i>"Any innovative idea brought forward from our employees and is implemented, R5 takes the risk and responsibility of outcomes."</i>
	Apply firms' management policies and structure	SCMr5 said, <i>"We have regulations and policies at R5 we need to follow even when we are coming up with innovative ideas. [...]. We have some good resources but not all our employees use them efficiently [...]."</i>
	Use of firms' resources efficiently	
	Fixed salary + Bonus/reward (if any)	HSM5 said, <i>"Unluckily, we do not get a bonus if our idea was to be implemented!"</i>
Entrepreneurial HR	Understand the whole context of their business	SCMr5 said, <i>"I believe our HR are more than just recruiting and firing employees; I believe they do understand what is going on at R5 and this shows during meetings with our chain members."</i>
	Motivate and lead their employees	PDM5 said, <i>"A few of our HR are good at leading our employees positively and encouraging us all to be innovative but we do not have enough of these HR. I believe if all our HR had these skills this would help lead to success."</i>
	Driver of success	
	Entrepreneurial thinking	FFM5 explained, <i>"I believe all our HR should have the skills and characteristics of a good decision maker and to be innovative like an entrepreneur. Ideally that would be great but we only have a few!"</i>
	Good decision makers	

c) Innovation

The overall responses from the interviewees provided relevant discussion on innovation. They highlighted the positive influence of innovation within their retailer. In consistence with this is, FFM5 said, *“I consider innovation to be an important aspect at R5, in order for us to keep up with the market.”* Key representative quotations are shown in Table 5.37.

Product Innovation: For this theme, seven contextual factors emerged from analyzing the five transcripts for R5. These are staying competitive, seizing market opportunities, design for sustainability, packaging material, eco-labeling, life-cycle analysis and organic products. The majority of the responses highlighted the importance of **staying competitive** and **seizing market opportunities**. Some interviewees discussed **efficient packaging systems** and that **labelling their products into certain environmental categories** such as organic and recyclable. All the interviewees mentioned they provide **organic products** at R5. Some interviewees discussed the importance of **designing practices for sustainability** such as energy saving properties, recyclability, eco-friendly materials, product shelf life and reducing raw material. Several interviewees explained the inventory process to manage **product life cycle** is to optimize inventory with consideration for inventory type related to customer demand.

Process Innovation: Six contextual factors for process innovation emerged from analyzing the five transcripts for R5. These are managing cost, adopting environmentally friendly technologies, to raise industry standards in line with environmental performance, response to external pressures and regulatory changes, handling waste and logistics. The overall responses highlighted the importance of **responding to external demands** such as customer demand and government regulations. Several interviewees discussed **enhancing their industry standards corresponding to environmental performance** and **gaining economic benefits**. All the interviewees discussed how they **handle waste**, such as recycling. The majority of the interviewees discussed their **efficient transportation networks and distribution channels**. Several interviewees underlined their importance to **adopting environmentally friendly technologies** at R5.

Organizational Innovation: Seven contextual factors emerged from analyzing the five transcripts for R5. These are certificates, stakeholders' management, engaging employees in developing a sustainable business, health and safety issues, sustainability vision, code of conduct and environmental policy. The overall responses highlighted earning **certificates** such as ISO 22000 and HACCP. The majority of the interviewees mentioned **health and safety measures** and trainings at R5. A few interviewees highlighted **codes of conduct** such as ethics and transparency at R5. A minority of interviewees discussed **environmental policies** implemented in the organization. The

majority of the interviewees agreed that R5 engages its employees in **developing a sustainable business**. A few interviewees mentioned designing and implementing **visions based on sustainability**. The majority of the interviewees discussed their **stakeholders' management** such as the contracts and communications between them.

Table 5.37: Innovation Perspective-Themed, Contextual Factors and Representative Quotations (Case 5)

Theme	Contextual Factor (Coding category)	Representative Quotations
Product Innovation	Staying competitive	PDM5 noted, <i>"Here at R5 we always do our best to benefit from any market opportunities, such as expanding our branches across Jordan. [...]. Having new customer segments, in new areas, help in staying competitive."</i>
	Seizing market opportunities	
	Design for sustainability	SCMr5 explained, <i>"I believe it is important to design for sustainability. We are now studying to implement solar panels; we are studying its cost, potential results and is it environmentally friendly."</i>
	Packaging material	HSM5 said, <i>"The yogurt containers are recyclable, we usually discuss this with our yogurt packaging companies; they are truthfully labelled so that the consumers know that they can recycle it. We have organic dairy products and they are labelled clearly for our customers."</i>
	Eco-labeling	
	Life-cycle analysis	HSS5 said, <i>"I believe the way the products are delivered to us is important since we don't want anything damaged or can ruin its product life cycle, therefore on arrival we check the quality of the product."</i>
	Organic products	FFM5 said, <i>"Based on our high customer demand for organic products, we provide organic dairy products, fruits and vegetables."</i>
Process Innovation	Managing cost	FFM5 highlighted, <i>"Our main priority is our customers and in return to increase our profit. We try to be more environmentally friendly and raise our standards regarding environmental performance but it is just too expensive."</i>
	To raise industry standards in line with environmental performance	
	Adopting environmentally-friendly technologies	SCMr5 explained, <i>"In think having environmentally friendly technologies at R5 is important as there would be a lot of benefits. We have started implementing LED lights at some branches and hope to expand to all our branches; as they are environmentally friendly. I think R5 needs to start looking for technologies to implement like solar panels, but our problem is we are not ready financially for this."</i>
	Response to external pressures and regulatory changes	HSS5 discussed, <i>"We are pushed by the government to be more sustainable, and then we act in response to this and our R&D starts to look for alternatives such as solar panels."</i>
	Handling waste	SCMr5 explained, <i>"We mainly recycle paper, plastic and cardboard. We have a contract with an organization that come and collect them and send them to a recycling industry. The Jordanian government body, Ministry of Planning and International Cooperation emphasizes on the importance of waste management."</i>
	Logistics	PDM5 explained, <i>"It is in our contract with our yogurt suppliers to provide us with yogurt and other dairy products, in refrigerated vehicles, once a day, and early in the morning, so they do not hit traffic and arrive on time safely."</i>

Organizational Innovation	Certificates	HSM5 said, <i>“We received the ISO food 22000 and the HACCP certificate; these certificates are good to have as they represent our good quality of products.”</i>
	Stakeholders management	FFM5 said, <i>“Just last week, we had a meeting with one of our meat suppliers, discussing the best routes and efficient distribution channels.”</i>
	Engaging employees in developing a sustainable business	PDM5 said, <i>“A few weeks ago we had a workshop on several sustainability issues. We brainstormed about ways we can improve in terms of environmental issues that can also cut our costs like how we can control our energy consumption.”</i>
	Health and safety issues	FFM5 explained, <i>“We have different trainings and workshops on health and safety issues; they are required for all our employees, current and new employees. These trainings inform the new employees about our health and safety issues at R5 and refresh our current employees; we also keep our employees up-to-date with anything new.”</i>
	Sustainability vision	HSM5 said, <i>“Our primary goal is to provide our customers and community everything they need in one retail, with great quality at competitive prices. We do have environmental goals as well as goals to increase our profit.”</i>
	Code of conduct	SCMr5 discussed, <i>“All our work is based on good ethics, but not everything is transparent.”</i>
	Environmental policy	HSS5 explained, <i>“At R5 we have policies based on the government regulations and our own for waste control and a few other environmental topics, but I believe we need to abide by them in order to improve our performance.”</i>

d) Sustainability

The overall responses from the interviewees provided relevant discussion on sustainability either environmental, economic or social related to their retailer. In consistence with this, SCMr5 explained, *“Here at R5 we are always trying our best to contribute to society and to take into account the economics. We do try our best at being environmentally friendly but we need to work harder towards this.”* Key representative quotations are shown in Table 5.38.

Environmental: From analyzing the five transcripts for R5, four contextual factors emerged. These are managing water, energy control, recycling and environmental awareness. Several interviewees discussed the importance of **controlling their use of energy**. A few interviewees mentioned how R5 **manages water**. All of the interviewees discussed how they carry out **recycling** at R5. Several of the interviewees emphasized the importance of **environmental awareness** at R5.

Social: Eight contextual factors emerged from analyzing the five transcripts for R5. These are training and workshops, social events, diversity, community impact, safe and fair labor conditions, employee benefits, truthful product labeling and descriptions, and customer health and safety. The majority of the interviewees underlined the various **trainings and workshops** provided at R5. Most of the interviewees agreed that R5 does not organize **social events** for its employees. The overall responses mentioned **employee benefits** provided to them at R5. Some interviewees mentioned **safe**

and fair labor conditions at R5. The majority of the interviewees discussed R5's **impact on the community**. Some interviewees discussed the **health and safety of their customers**. Some interviewees mentioned the importance of **product labeling and descriptions to be truthful**. The majority of the interviewees underlined **diversity** within R5.

Economic: From analyzing the five transcripts for R5, five contextual factors emerged. These are tax, economic interests of external stakeholder, competitive procurement, customer satisfaction, and efficient production and packaging. The majority of the interviewees discussed **tax and profitability** issues in Jordan. The overall response emphasized the importance of their **customers' satisfaction**. Several interviewees underlined the **economic interests of their external stakeholders**. Some interviewees highlighted the importance of **efficient production and packaging**. The majority of the interviewees explained the importance of **competitive procurement** at R5.

Table 5.38: Sustainability Perspective-Themes, Contextual Factors and Representative Quotations (Case 5)

Theme	Contextual Factor (Coding category)	Representative Quotations
Environmental	Managing water	PDM5 stated, <i>"A few methods we manage our water is having hand detectors on water taps and we record our total water consumption. I do believe R5 should look at other ways to manage water hence save water efficiently."</i>
	Energy control	HSS5 said, <i>"We recently had a workshop with some of our suppliers on how we can control our energy consumption. We are now considering implementing solar panels, well at least at our main building."</i>
	Recycling	FFM5 explained, <i>"We signed a contract with a company a few years ago, which come and collect our recyclable waste mainly plastic, paper and cardboard and later send to the appropriate recycling industry."</i>
	Environmental awareness	HSM5 stated, <i>"At R5 we are provided with knowledge via trainings and meetings about different environmental issues; [...]. We try to provide awareness to our customers in regards to collecting their beef or yogurt products last so they do not keep them in the trolley for a long time while shopping for other products because meat and dairy products are sensitive to temperature and we do not want them to get damaged; we aware them of food waste. We even inform our customers not to keep any meat or dairy products in the car for too long. We type labels of these points on our grocery bags."</i>
Social	Trainings and workshops	FFM5 said, <i>"We provide trainings for our new employees as well as our experienced employees. There is cooperation between us and JFDA in which they provide us with doctors, agriculture engineers and nutritionists that conduct workshops and training for our employees, where they cover several different topics such as hygiene issues, how to store beef, yogurt and other products, how to cut meat, food waste, etc."</i>
	Social events	PDM5 explained, <i>"Unfortunately we do not do field trips or parties for our employees since we have many branches and many employees, but we do provide them with great discounts."</i>
	Diversity	HSM5 discussed, <i>"Our retailer is known for the huge diverse variety of products available based on different customer demand."</i>

	Community impact	HSS5 explained, <i>“With almost 20 branches across Jordan we are providing various career opportunities for the community and helping a lot of our suppliers boost their product’s image.”</i>
	Safe and fair labor conditions	HSM5 explained, <i>“When I come into work every day I feel safe and I don’t have to worry about my safety. [...]. I love my work hours and days off; I feel we do have fair labor conditions.”</i>
	Employee benefits	SCMr5 said, <i>“Working at R5 we get good benefits, like food discounts, private medical insurance and social security. Our organization does care about its employees.”</i>
	Truthful product labeling and descriptions	PDM5 said, <i>“Labelling products truthfully whether organic, its price and its description is important to ensure our customers have the details they need when choosing a product.”</i>
	Customer health and safety	HSM5, <i>“At R5 we make sure all our markets are clean, we have good ventilation, and we provide heating and air conditioning.”</i>
	Profitability and Tax	HSS5 explained, <i>“Last month the government raised the taxes for the yogurt industries leading to an increase of yogurt and other dairy products rise in price.”</i>
	Economic interests of external stakeholder	FFM5 discussed, <i>“We collaborate with our traders at the slaughterhouse to provide them with our order based on our customer demand.”</i>
	Competitive procurement	HSM5, <i>“I believe to stay competitive in the market we need to choose good suppliers that supply us with high quality products at reasonable prices, that is where our procurement team comes in to make these decisions.”</i>
	Customer satisfaction	SCMr5 said, <i>“We focus on business-to-business customer satisfaction across our chain; this is when we pay our suppliers on time and stay committed.”</i>
	Efficient production and packaging	PDM5 explained, <i>“Efficient packaging is important, in our deli section, we provide recyclable containers to sale yogurt and other dairy products in.”</i>

5.3.5.2 Observations for Case Study 5

Observations were conducted in April 2019 at the actor (R5), dyad level (one of the yogurt industries) and at network level (Jordan Food and Drug Association (JFDA)). Table 5.39 presents key findings at each level in the SC of R5. The findings from the observations, followed the observation protocol (Appendix H) and are consistent with the findings in the interviews for R5 and these were based on the theoretical perspectives, themes and contextual factors identified from the interviews in case 5.

Table 5.39: Observations for SC of R5-Case Study 5 (Author’s own work).

Observations for SC of Retailer 5			
Actor Level	Meeting at R5	Duration	40 minutes
		Observer	Participant observer
		Organized by	HR Manager at R5
		Topic	How and why intrapreneurs should make use of the organizations’ resources efficiently
		What was revealed?	R5 supports its employees to be innovative and provides several resources such as financial, personnel, physical and information resources. It was found that the employees do not use the available resources efficiently and that the managers frequently remind everyone to be innovative and to use the resources efficiently. Their HR try to motivate the other employees to be innovative and to lead them to achieve the retailer’s goals.

Dyad Level	A tour at R5	Perspective/ Theme/Context ual factor covered	Entrepreneurship - Corporate Entrepreneurship - Retailer supports innovation and Retailer provides resources and easy accessibility Entrepreneurship – Entrepreneurial HR - Motivate and lead their employees
		Duration	35 minutes
		Observer	Participant observer
		Organized by	HR Manager at R5
		Topic	The researcher saw the receiving dock, butchery, beef and yogurt display refrigerators, monitored storage refrigerators and hygiene and safety signs.
		What was revealed?	The butchers follow the hygiene and safety regulations and are checked throughout the day that they are abiding the regulations by the butcher manager. The butchers were discussing the trainings and workshops they are provided with and mentioned they had a workshop that day.
		Perspective/ Theme/Context ual factor covered	Network- Resources – Physical Resources Innovation- Organizational Innovation -- Health and safety issues Sustainability – Social - Trainings and workshops
	A meeting at the yoghurt industry	Duration	30 minutes
		Observer	Non-participant observer
		Organized by	Fresh Food Manager at R5
		Topic	R5 collaborating with the yogurt industry in organizing trainings and workshops around the topic environmental awareness where the yogurt industry suggested several topics they can cover to benefit each other such as water and energy control, recycling and environmental friendly technologies.
		What was revealed?	It was revealed from the meeting that several of the employees from R5 that attended the meeting were not very interested in collaborating with the yogurt industry in these types of training and workshops; however, the yogurt industry tried their best to persuade them. The yogurt industry were surprised why R5 did not want to collaborate though they have good knowledge and can help other members in the chain. The challenge that was faced was the mentality of some of the employees at R5 who are influenced by culture to not enhance themselves and change positively.
		Perspective/ Theme/Context ual factor covered	Network- Actor positioning – Position imbalance Entrepreneurship - Corporate Entrepreneurship – Culture Sustainability - Environmental - Environmental awareness
	A tour at the yoghurt industry	Duration	30 minutes
		Observer	Non-participant observer
		Organized by	Fresh Food Manager at R5
		Topic	The researcher saw the pasteurizing room and machinery, different packaging machinery, refrigerators, refrigerated rooms, hygiene and safety signs, certificates, first aid kit and the refrigerated vehicles.
		What was revealed?	R5 inspected the premises (based on their contract) of the yogurt industry and everything met their standards. R5 also checked the yogurt industries recent evaluation from the government bodies and the yogurt industry turned out to be up to date with its certificates.
Network Level	A meeting with (JFDA)	Perspective/ Theme/Context ual factor covered	Network- Resources – Physical Resources Innovation- Organizational Innovation -- Health and safety issues Network – Activities – Controlling activities Innovation – Organizational Innovation – Certificates and Stakeholders management
		Duration	40 minutes
		Observer	Non-participant observer
		Organized by	Fresh Food Manager and HR Manager at R5
		Topic	Fresh food in regards to safety, properly labeled and quality
	A meeting with (JFDA)	What was revealed?	During the meeting the discussion revolved around the inspection of the quality and suitability of yogurt depending on the standards and regulations. This is an important topic for JFDA to discuss with R5; it also included truthful labeling.

	A tour at (JFDA)	Perspective/ Theme/Context ual factor covered	Network – Activities – Controlling activities Innovation- Product Innovation - Eco-labeling Sustainability – Social - Truthful product labeling and descriptions
		Duration	35 minutes
		Observer	Non-participant observer
		Organized by	Fresh Food Manager and HR Manager at R5
		Topic	The researcher saw their main rooms and some secondary data.
		What was revealed?	It was revealed there is commitment and cooperation between R5 and JFDA, in which JFDA provides R5 with agriculture engineers, nutritionists and doctors which carry out workshops and training for employees at R5, covering several topics: how to store beef, yogurt and other products, hygiene issues, safety issues, how to cut meat and food waste. However, it was exposed that R5 are in need of more knowledge regarding the safety and quality of food.
		Perspective/ Theme/Context ual factor covered	Network – Actor positioning- Commitment /Resources – Information Resources Innovation- Organizational Innovation -- Health and safety issues Sustainability – Social - Trainings and workshops

* *Participant Observer*: the researcher would participate with the participants.

* *Non-Participant Observer*: the researcher would not participate with the participants.

5.3.5.3 Secondary Data for Case Study 5

Secondary data were collected and analyzed; Table 5.40 presents key findings at R5. It was evaluated that the secondary data is consistent with the findings in the interviews and observations. The information is in line with the themes and contextual factors identified from the case interviews.

Table 5.40: Secondary Data for R5-Case Study 5. (Author's own work).

Secondary Data for Retailer 5	
Date: Researcher collected data	April 2019
Source: Access to Secondary and Documentary Data	<i>Documents</i> : From websites of the retailer, Government websites of sustainability projects and reports <i>Archival Records</i> : Financial Records (2018), Description of Stakeholders, Market Reports (2018) and Meeting Minutes (2018)
Key example of a finding: ▪ Financial Records (2018) ▪ Description of Stakeholders (2017-2018)	One of the available reports examined, discussed the collaboration and commitment between R5 and the government body responsible for the tax. The reports showed that R5 pays its tax through a security-protected website named e-tax owned by the government. The latest reports showed that tax was paid on time and proved that it is user friendly compared to the traditional way of visiting the government and receiving the tax statement and later paying via bank.
Perspective/Theme/Contextual factor covered	Network- Actor positioning – Commitment/ Activities - Exchange activities Innovation –Product Innovation - Adopting environmentally-friendly technologies Sustainability- Economic - Profitability and Tax
Key example of a finding: ▪ Market Reports (2018) ▪ Meeting Minutes (2018) ▪ Well-being Report (2018)	R5 uses its website and social media such as Facebook, Instagram and Snapchat as well as brochures, and TV commercials to promote their products and any offers, in order to reach as many people as possible. R5 uses a blended method of advertisement to target as many people in different segments (e.g. age) from the society. They also had a report examining the safety and health of its customers at R5, mentioning such as clean display areas, heaters, air conditioning, ventilation and no hazards objects or machinery.
Perspective/Theme/Contextual factor covered	Sustainability- Social – Diversity and Customer health and safety Network- Actor positioning - Brand Image and Reputation

5.3.6 Case Study 6- Food Retailer (R6)

R6 is a national retailer, which provides customers with a great variety of food, household and garden products and has a huge play area for children. R6 was established in the early 2000's with its headquarters located in Amman, Jordan. R6 is a family business and has only one branch. Their branch is five stories high with a total area of 25,000 m². R6 sells local beef and imports beef from six different countries. R6 is contracted with nine different yogurt industries as well as two delicatessen companies, which all provide them with yogurt and other dairy products. The beef they purchase from a Central Amman Slaughterhouse is transported and distributed by their suppliers to them daily. R6's goal is: *"Our goal is to provide minimum prices on our huge range of products for our community"*. (R6 Website, 2019). Table 5.41 provides descriptions on the five interviewees for case study 6, R6.

Table 5.41: Demographics of Interviewees-Case Study 6. (Author's own work).

Characteristics	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5
Job Title in R6	Fresh Food Manager (FFM6)	Product Development Manager (PDM6)	Supply Chain Manager (SCMr6)	Head of Sustainable Sourcing (HSS6)	Hygiene and Safety Manager (HSM6)
Age	25-35	35-45	25-35	45-55	45-55
Gender	Male	Male	Male	Male	Male
Education Level	College	BSc	MSc	BSc	BSc
Country of Education	Jordan	Jordan	Jordan	Jordan	Jordan
Years of Experience	8	16	11	25	19

5.3.6.1 Insights on SOI in food SCM for Case Study 6

The five interviews were conducted in January 2019 in Jordan. The interviewees showed that their food SCM is about how to distribute their products from suppliers to consumers. FFM6 stated that, *"The food supply chain is all about distributions for our raw materials and finished products to our customers. I believe our supply chain is complex sometimes and we are not involved with all members to do collaborations or build new relationships."* The interviewees highlighted their awareness of SOI in food SCM, as supported by PDM6 who explained, *"We are looking to improve our supply chain and we are aware about the new technologies and/or innovations available for food supply chains and their members. It is hard to follow all the requirements for sustainability especially if we need to consider all social and environmental issues as we would need abundant financial resources."*

The following are findings on the key insights from the key perspectives: **network, entrepreneurship, innovation and sustainability** at all three levels of actor, dyad and network, on SOI in food SC.

a) Network

All the interviewees provided relevant discussion on network. They highlighted the importance of implementing network, either actor positioning, activities or resources. In consistence with this, PDM6 said, *“I believe we collaborate and cooperate well with different members of our supply chain building good relationships with them.”* Key representative quotations linked to each contextual factor of the themes for network are provided in Table 5.42.

Actor: Analyzing the five transcripts for R6 revealed five contextual factors. These are position imbalance, leadership, reputation, brand image and commitment. The overall responses discussed the importance of their **reputation** and **brand image**. Most of the interviewees discussed **commitment** within the retailer and other members in the supply chain. **Leadership** is believed to be important in R6 by several interviewees. The majority of interviewees discussed their retailers’ **position imbalance**.

Activities: Four contextual factors emerged from analyzing the five transcripts for R6. These are planning, organizing, controlling and exchange activities. The majority of the interviewees discussed different activities they share within their organization and other actors. Several interviewees discussed **planning activities** applied at R6. Most of the interviewees mentioned working on **organizing activities**. Some interviewees underlined their **controlling activities** at R6. The majority of the interviewees highlighted **exchange activities** applied at R6.

Resources: From analyzing the five transcripts for R6, four contextual factors emerged. These are financial, information, physical and personnel resources. All the interviewees discussed the importance of **financial resources** they need at all three levels. The majority of the interviewees discussed their need of **information resources**. Some of the interviewees explained the importance of **physical resources** needed in order to achieve their goals at actor, dyad and network levels. Several interviewees mentioned their **personnel resources** at R6.

Table 5.42: Network Perspective-Themes, Contextual Factors and Representative Quotations (Case 6)

Theme	Contextual Factor (Coding category)	Representative Quotations
Actor Positioning	Position Imbalance	HSM6 explained, <i>“I believe that we the retailer have power in our supply chain, as we are where the final customers come to and whom the producers want to sell to. With our knowledge and experience we can work as a team with our supply chain members to enhance sustainability, however unfortunately we do not get involved.”</i>
	Leadership	FFM6 said, <i>“Last week one of our employees put R6 in a tough situation but one of our managers took over and was able to solve the situation due to good leadership skills. We really need more employees with leadership skills.”</i>
	Reputation	SCMr6 said, <i>“Having a good reputation and image is important for us to stay competing in our market. Our reputation and image also plays a big role with who wants to supply and basically our chain members who want to stay in business with us.”</i>
	Brand Image	
	Commitment	HSS6 said, <i>“In order to build good relationships with our suppliers we both need to be committed.”</i>
Activities	Planning activities	HSS6 stated, <i>“We plan for anything and everything; we need to study the issue and we need to see if we have the resources.”</i>
	Organizing activities	HSM6 discussed, <i>“We had a training organized with a central slaughterhouse for our butchers to have better experience and gain knowledge of what goes on there.”</i>
	Controlling activities	PDM6 discussed, <i>“Every time our suppliers bring us our beef and other meats we check the temperature, the certificates from the slaughterhouse and much more; we take charge of the situation.”</i>
	Exchange activities	FFM6 explained, <i>“We use the government website to upload them our annual sales revenue so we can pay our tax, we use e-banking to pay.”</i>
Resources	Financial resources	SCMr6 explained, <i>“When we implemented solar panels we had to make sure we were financially ready. We do not always have adequate financial resources so we prioritize what is most important for us to implement first such as LED lights and solar panels.”</i>
	Information resources	PDM6 said, <i>“Every time our suppliers provide us with our meat, we record the amount of meat we did take as well as the amount we decided not to take. We e-mail them this record so they remove the amount we did not take from our bill.”</i>
	Physical resources	HSM6 explained, <i>“We also installed generators so in case of any emergencies and the electricity is cut our generators work, within 30 seconds of when the electricity is cut, to avoid any damaged products, this is one of our resilient plans.”</i>
	Personnel resources	FFM6 stated, <i>“We coordinated with the Jordanian Food and Drug Association in regards of workshops, time, place and relevant facilitators to discuss everything to do with yogurt and other dairy products and beef and other meats.”</i>

b) Entrepreneurship

The overall responses from the interviewees showed relevant understanding of entrepreneurship. They emphasized the significance of employing entrepreneurship, either corporate entrepreneurship, intrapreneurship or entrepreneurial HR, at their retailer in order to succeed. In consistence with this, SCMr6 stated, “*Coming up with innovative ideas and having entrepreneurial characteristics is important for us.*” Key representative quotations are provided in Table 5.43.

Corporate Entrepreneurship: Analyzing the five transcripts for R6, six contextual factors emerged. These are stages of implementing, retailer supports innovation, retailer provides resources and easy accessibility, retailer structures for an intrapreneurial environment, developing individual managers for corporate entrepreneurship and culture. Several interviewees discussed the **stages their retailer goes through to implement innovative ideas** from their employees. Most interviewees mentioned the **different resources provided** at R6 and their easy accessibility. Most interviewees discussed how R6 is in regards to **supporting innovation** and **structuring an intrapreneurial environment**. The majority agreed that R6 does not provide a structured intrapreneurial environment. Some discussed that R6 tries to **develop individual managers for corporate entrepreneurship**. Several interviewees discussed that **culture** influences R6 in regards to implementing CE.

Intrapreneurship: Five contextual factors emerged from analyzing the five transcripts for R6. These are firm takes the risk and responsibility, are innovative and creative, apply firm’s management policies and structure, use of firms’ resources efficiently, and fixed salary plus bonus/reward if any. The majority of interviewees discussed that having intrapreneurs in their organization is essential and that they need to be **creative and innovative**. Several interviewees mentioned that if they did bring forward an innovative idea and the organization decided to implement then they would receive a **reward**. The majority of the interviewees revealed that if an innovative idea was to be implemented the **organization does take the risk and responsibility**. Several interviewees discussed that they have to **follow the organizations’ management policies and structure** when constructing an innovative idea and **to efficiently use the organizations’ resources**.

Entrepreneurial HR: For this theme, five contextual factors emerged from analyzing the five transcripts for R6. These are HR understand the whole context of their business, motivate and lead their employees, drivers of success, entrepreneurial thinking and good decision makers. The majority of the interviewees discussed whether their **HR understands the whole context of their business**. Some interviewees discussed the importance of **HR motivating and leading** their employees and that **HR should be drivers of success**. Several interviewees explained the importance of **HR thinking like entrepreneurs**, being innovative and are **good decision makers**.

Table 5.43: Entrepreneurship Perspective-Themes, Contextual Factors and Representative Quotations (Case 6)

Theme	Contextual Factor (Coding category)	Representative Quotations
Corporate Entrepreneurship	Stages of implementing innovative ideas	HSS6 said, <i>“An innovative idea needs to be studied, to see if it is feasible, to develop it, to promote it in the market and to manage it.”</i>
	Retailer supports innovation	SCMr6 stated, <i>“We are always motivated to be innovative but our work atmosphere does not provide us with time to just brainstorm with a coworker or even a team.”</i>
	Retailer structures for an intrapreneurial environment	
	Retailer provides resources and easy accessibility	FFM6 explained, <i>“I believe we have several different resources; for example we have some financial resources but I don’t believe they are enough at times and they are not always easy to access”</i>
	Developing individual managers for corporate entrepreneurship	PDM6 noted, <i>“R6 trains some managers to gain skills of an entrepreneur but I think they should develop more managers.”</i>
	Culture	HSM6 said, <i>“I believe that our culture influences us as employees at R6, especially when trying to market a product, we try to have traditional advertisements.”</i>
Intrapreneurship	Are innovative and creative	HSS6 explained, <i>“Having creative employees, innovative employees, employees that have the characteristics of entrepreneur are really important for our retailer to have.”</i>
	Firm takes the risk and responsibility	FFM6 said, <i>“If a coworker’s idea was to be implemented, R6 takes the risk and responsibility of any result.”</i>
	Apply firms’ management policies and structure	HSM6 said, <i>“We are always being reminded to use our resources efficiently. [...]. There are certain regulations at R6 we need to always follow.”</i>
	Use of firms’ resources efficiently	
	Fixed salary + Bonus/reward (if any)	PDM6 said, <i>“If our idea was to be implemented, we would receive a small reward like a discount on our next purchase!”</i>
Entrepreneurial HR	Understand the whole context of their business	FFM6 said, <i>“HR is involved in recruiting and firing employees and organizing workshops; I do not believe they know everything going on at R6.”</i>
	Motivate and lead their employees	HSS6 said, <i>“We have some amazing HR that can lead their coworkers, motivate them to be innovative and some are drivers of success.”</i>
	Driver of success	
	Entrepreneurial thinking	HSM6 explained, <i>“Last month in a meeting with the government our HR manager was innovative, thought out of the box and made a good decision and this led to success during our meeting.”</i>
	Good decision makers	

c) Innovation

All the interviewees provided relevant discussion on innovation. They highlighted the positive influence of innovation within their retailer. As PDM6 explained, “*I believe innovation is the key to success at R6.*” Key representative quotations are provided in Table 5.44.

Product Innovation: For this theme, seven contextual factors emerged from analyzing the five transcripts for R6. These are staying competitive, seizing market opportunities, design for sustainability, packaging material, eco-labeling, life-cycle analysis and organic products. All emphasized on the importance of **staying competitive** and **seizing market opportunities**. Several interviewees discussed **efficient packaging systems**. The majority mentioned they provide **organic products** at R6 and that **labelling their products into certain environmental categories** such as organic and recyclable. Some interviewees discussed the importance of **designing practices for sustainability** such as energy saving properties, recyclability, eco-friendly materials, product shelf life and reducing raw material. Several explained the inventory process to manage **product life cycle** is to optimize inventory with consideration for inventory type related to customer demand.

Process Innovation: Six contextual factors for process innovation emerged from analyzing the five transcripts for R6. These are managing cost, adopting environmentally friendly technologies, to raise industry standards in line with environmental performance, response to external pressures and regulatory changes, handling waste and logistics. The majority underlined the importance of **responding to external demands** such as customer demand and government regulations. Some discussed **enhancing their industry standards corresponding to environmental performance** and **gaining economic benefits**. The overall responses discussed how they **handle waste**, such as recycling. Several discussed their **efficient transportation networks and distribution channels**. Several highlighted the importance to **adopting environmentally friendly technologies** at R6.

Organizational Innovation: Seven contextual factors emerged from analyzing the five transcripts for R6. These are certificates, stakeholders’ management, engaging employees in developing a sustainable business, health and safety issues, sustainability vision, code of conduct and environmental policy. All discussed earning **certificates** such as ISO 22000 and HACCP and mentioned **health and safety measures** and trainings at R6. The majority discussed their **stakeholders’ management** such as the contracts and communications between them and mentioned **codes of conduct** such as ethics and transparency. Some agreed that R6 **engages its employees in a sustainable business**. A few mentioned designing and implementing **visions based on sustainability** and discussed **environmental policies** implemented at R6.

Table 5.44: Innovation Perspective-Themed, Contextual Factors and Representative Quotations (Case 6)

Theme	Contextual Factor (Coding category)	Representative quotations
Product Innovation	Staying competitive	HSS6 stated, <i>“To stay competitive we, R6, need to know who our competitors are and what they are offering. We try to take advantage of any opportunities in the market; this also helps in staying competitive.”</i>
	Seizing market opportunities	
	Design for sustainability	PDM6 explained, <i>“When we decided to implement solar panels we had to study and plan for it, we took into consideration a variety of issues such as possible results, environmentally friendly, cost, how long will it take them to physically implement it and how long will it take to see the results.”</i>
	Packaging material	FFM6 said, <i>“The meat we sale are put into trays, which are not biodegradable or recyclable, to be honest we are not currently looking for a solution.”</i>
	Eco-labeling	
	Life-cycle analysis	As HSS6 said, <i>“When we decide on which industry we will purchase a specific product we always check that their production is efficient as this is one of many factors that can help in enhancing the product life cycle.”</i>
	Organic products	SCMr6 explained, <i>“We provide organic fruits, vegetables and dairy products which are all clearly labelled for our customers.”</i>
Process Innovation	Managing cost	SCMr6 highlighted, <i>“Our customers are our main concern and from there we increase our profits. [...]. Being environmentally friendly is important to us but I feel two main things hold us back which are our culture and financial issues.”</i>
	To raise industry standards in line with environmental performance	
	Adopting environmentally-friendly technologies	HSS6 explained, <i>“We have LED lights everywhere here at R6 and we implemented solar panels. Our R&D are always searching for new environmentally friendly technologies we can benefit from.”</i>
	Response to external pressures and regulatory changes	HSM6 said, <i>“We have several regulations from our government to be environmentally friendly and we need to take immediate action.”</i>
	Handling waste	FFM6 explained, <i>“We have a contract with a company to come collect cardboards, paper and plastic items and send them to be recycled.”</i>
Organizational Innovation	Logistics	PDM6 said <i>“We receive our meat once a day, preferably in the morning to avoid traffic. One of our employees goes to the slaughterhouse and chooses the meat and comes with the supplier in a refrigerated vehicle back to our branch.”</i>
	Certificates	PDM6 explained, <i>“We have ISO food 22000 certificate and are working on the HACCP certificate. We always stay up-to-date for renewals.”</i>
	Stakeholders management	SCMr6 said, <i>“We had a meeting with the Ministry of Health a month ago after their inspection at R6 to inform us results of the inspection; passed everything!”</i>
	Engaging employees in developing a sustainable business	HSS6 said, <i>“The owner of R6 frequently requests from the HR to arrange workshops of sustainability for us to think about different issues like environmental issues that cut our costs.”</i>
Organizational Innovation	Health and safety issues	HSM6 said, <i>“ For training we visited the slaughterhouse to better understand different health and safety issues; there is always a veterinarian at it to diagnose the animals and they stamp the carcass that is healthy to be sold. The Ministry of Health and Amman Municipality were inspecting it when we were there.”</i>

	Sustainability vision	PDM6 said, <i>“The main aim for R6 is offering our community all they need in one place, including a kid’s play area, with good quality and prices. Our second aim is to be environmental friendly.”</i>
	Code of conduct	FFM6 discussed, <i>“Everything we do is ethical, and our HR is in control to make sure this is applied.”</i>
	Environmental policy	As FFM6 explained, <i>“There are several environmental regulations we follow at R6 such as waste control, but I believe we need to implement more policies in order to enhance our sustainability performance.”</i>

d) Sustainability

The majority of the responses showed good understanding of sustainability. They emphasized the significance of implementing sustainability either environmental, economic or social at their retailer. As FFM6 explained, *“We contribute to society as much as possible while considering the economics, we try to care for our environment, but I believe we need to put more effort.”* Key representative quotations are provided in Table 5.45.

Environmental: From analyzing the five transcripts for R6, four contextual factors emerged. These are managing water, energy control, recycling and environmental awareness. The majority of the interviewees discussed the importance of **controlling their use of energy**. A few interviewees mentioned how R6 **manages water**. The overall responses discussed how they carry out **recycling** at R6. Some of the interviewees emphasized the importance of **environmental awareness** at R6.

Social: Eight contextual factors emerged from analyzing the five transcripts for R6. These are training and workshops, social events, diversity, community impact, safe and fair labor conditions, employee benefits, truthful product labeling and descriptions, and customer health and safety. The majority underlined the various **trainings and workshops** provided at R6. Several agreed that R6 does not organize **social events** for its employees. Most of the responses mentioned **employee benefits** provided to them at R6. Some interviewees mentioned **safe and fair labor conditions** at R6. Several discussed R6’s **impact on the community**. All discussed the **health and safety of their customers**. A few mentioned the importance of **product labeling and descriptions to be truthful**. The majority underlined **diversity** within R6.

Economic: From analyzing the five transcripts for R6, five contextual factors emerged. These are tax, economic interests of external stakeholder, competitive procurement, customer satisfaction, and efficient production and packaging. All the interviewees discussed **tax and profitability** issues in Jordan. The overall response emphasized the importance of their **customers’ satisfaction**. The majority of the interviewees underlined the **economic interests of their external stakeholders**. Several interviewees highlighted the importance of **efficient production and packaging**. Several interviewees explained the importance of **competitive procurement** at R6.

Table 5.45: Sustainability Perspective-Themes, Contextual Factors and Representative Quotations (Case 6)

Theme	Contextual Factor (Coding category)	Representative Quotations
Environmental	Managing water	HSM6 said, “We have specific employees here at R6 who check and log our water usage and our R&D search for different approaches we can take to manage our water such as our hand detectors on the water taps.”
	Energy control	PDM6 said, “We implemented LED lights and solar panels at R6; before we did we had meetings discussing methods we can control our energy consumption.”
	Recycling	HSS6 stated, “In Jordan we have some recycling industries for plastic, paper and cardboard, but we do not have anything for glass. So we have contracted with a regional external company to collect our recyclable glass waste and they send them to recycling industries in their country.”
	Environmental awareness	SCMr6 explained, “We always provide our employees with different types of trainings and workshops to provide them with the awareness and understanding around environmental issues and we brainstorm for any solutions [...].”
Social	Trainings and workshops	FFM6 said, “Our HR organizes different trainings, workshops and visits to the industries we collaborate with such as a Central Slaughterhouse and the National Poultry Company so that our butchers have better knowledge of what goes on there and how each type of meat is slaughtered from the beginning. Our butchers already have experience and know how to cut meat.”
	Social events	HSM6 explained, “When there are national events for Jordan or marathons, etc. we gather a group of employees and we as R6 participate in it. But we do not organize social events like parties or field trips.”
	Diversity	PDM6 said, “Due to our high customer demand on products we provide a variety of products. We have a product line called ‘XXXX’, which are products just for us R6. ‘XXXX’ brand for around 300 items made just for R6, if you search all of Jordan you will not find this brand.”
	Community impact	FFM6 explained, “We provide good career opportunities at R6. We also help stimulate economic growth.”
	Safe and fair labor conditions	SCMr6 explained, “I feel safe and ‘at home’ here at R6. I work 5 days a week and have a two day weekend, I love it.”
	Employee benefits	PDM6 said, “We provide social insurance, medical insurance and yearly bonuses for our employees. We at R6 always give our employees their salaries on time at the end of each month.”
	Truthful product labeling/ descriptions	SCMr6 noted, “It is important here at R6 to always ensure our products are labeled and their description is correct.”
	Customer health and safety	HSS6 said, “We provide heating and air conditioning on all floors at R6. It is very important to us to maintain cleanness at R6.”
Economic	Profitability and Tax	FFM6 said, “The price of the yogurt products here at R6 have increased since the government raised the taxes on the yogurt industries.”
	Econ. interests of external stakeholder	PDM6 discussed, “There is collaboration with us and the yogurt industries to provide them our orders on a daily basis and discuss any payment issues.”
	Competitive procurement	SCMr6 noted, “Choosing the best products at great prices for our customers is to stay competitive in the market, our procurement team is the best.”
	Customer satisfaction	HSM6 said, “We have a customer complaints service to follow-up with customers’ issues[...]. Their satisfaction is very important to us.”
	Efficient production and packaging	HSS6 explained, “We have recyclable containers to sale yogurt at our deli section.”

5.3.6.2 Observations for Case Study 6

Observations were conducted in January 2019 at the actor (R6), dyad level (one of the yogurt industries) and at network level (one of the yogurt packaging)). Table 5.46 presents key findings at each level in the SC of R6. The findings from the observations, followed the observation protocol (Appendix H) and are consistent with the findings in the interviews in R6.

Table 5.46: Observations for SC of R6-Case Study 6 (Author's own work).

Observations for SC of Retailer 6			
Actor Level	Meeting at R6	Duration	30 minutes
		Observer	Participant observer
		Organized by	Fresh Food Manager at R6
		Topic	Employee benefits and social events
		What was revealed?	R6 does not provide social events such as field trips or parties for their employees but they do organize events at R6 for Jordanian events such as Independence Day. R6 also participates in other events such as national events and marathons. However, R6 does provide good employee benefits such as social insurance, medical insurance and yearly bonuses for their employees.
		Perspective/ Theme/Contextual factor covered	Sustainability – Social – Social events and Employee benefits
	A tour at R6	Duration	35 minutes
		Observer	Participant observer
		Organized by	Fresh Food Manager
		Topic	The researcher saw the receiving dock, butchery, beef and yogurt display refrigerators, monitored refrigerators, first aid kit and hygiene and safety signs.
		What was revealed?	R6 was preparing for a Jordanian traditional event and they started to market it by giving out flyers to their customers and by posting it on social media.
		Perspective/ Theme/Contextual factor covered	Sustainability – Social – Social events Network- Resources – Physical Resources Innovation- Organizational Innovation -- Health and safety issues
Dyad Level	A meeting at yoghurt industry	Duration	40 minutes
		Observer	Non-participant observer
		Organized by	HR Manager at R6
		Topic	Yogurt industry cooperating with R6 in exchanging: information, products, money.
		What was revealed?	R6 was interested in collaborating with the yogurt industry to plan and exchange data and information via an ERP system (Enterprise Resource Planning System), but the yogurt industry was not very interested. The challenge R6 faced was the yogurt industries lack of knowledge about the ERP and trying to persuade them of its use.
		Perspective/ Theme/Contextual factor covered	Network – Activities - Planning activities and Exchange activities Network – Resources - Information resources
	A tour at yoghurt industry	Duration	35 minutes
		Observer	Non-participant observer
		Organized by	HR Manager at R6
		Topic	The researcher saw the refrigerated vehicles, pasteurizing room and machinery, different packaging machinery, refrigerators, refrigerated rooms, hygiene and safety signs, and certificates.
		What was revealed?	The yogurt industry does try to benefit from R6's knowledge on some topics but not all.
		Perspective/ Theme/Contextual factor covered	Network- Resources – Physical Resources Innovation- Organizational Innovation - Health and safety issues and Certificates Network – Actor Positioning - Position Imbalance

Network Level	A meeting with yogurt packaging company	Duration	40 minutes
		Observer	Non-participant observer
		Organized by	Fresh Food Manager at R6
		Topic	What R6 expects from the yogurt packaging company in terms of the containers.
		What was revealed?	R6 has their own product line for around 300 products, one of which is yogurt and organic products, hence R6 contracted with this packaging company to provide them with efficient production and packaging; their own packaging containers, varying in size, recyclable or biodegradable and truthful labelling.
		Perspective/ Theme/Contextual factor covered	Innovation- Product Innovation - Packaging and Eco-labeling and Organic products Sustainability- Social - Truthful product labeling and descriptions Sustainability- Economic - Efficient production and packaging
	A tour with yogurt packaging company	Duration	35 minutes
		Observer	Non-participant observer
		Organized by	Fresh Food Manager at R6
		Topic	The researcher visited the yogurt packaging's warehouse; saw their machinery, certificates and different packages.
		What was revealed?	There is commitment, collaboration and a good relationship between R6 and the yogurt packaging company.
		Perspective/ Theme/Contextual factor covered	Network – Actor Positioning – Commitment Network- Resources – Physical Resources Innovation- Organizational Innovation - Certificates

* *Participant Observer*: the researcher would participate with the participants.

* *Non-Participant Observer*: the researcher would not participate with the participants.

5.3.6.3 Secondary Data for Case Study 6

Secondary data were collected and analyzed; Table 5.47 presents key findings at R6. It was evaluated that the secondary data is consistent with the findings in the interviews and observations. The information chosen is in line with the themes and contextual factors identified by the interviews.

Table 5.47: Secondary Data for R6-Case Study 6 (Author's own work).

Secondary Data for Retailer 6	
Date: Researcher collected data	January 2019
Source: Access to Archival Records and Document Data	<i>Documents</i> : From websites of the retailer, Government websites of sustainability projects and reports <i>Archival Records</i> : Financial Records (2018), Market Reports (2018), Meeting Minutes (2018) and Labor Conditions Report (2018)
Example of a finding: ▪ Financial Records (2018) ▪ Description of Stakeholders (2017)	One available report examined, discussed the collaboration between R6, a Central Slaughterhouse beef supplier and the Ministry of Health, where they discuss several topics such as health inspection certificates, records kept, licensing authority of practice from the Ministry of Health and hygiene certificates.
Perspective/Theme/Contextual factor covered	Network – Actor Positioning – Commitment Innovation- Organizational Innovation - Health and safety issues and Certificates
Example of a finding: ▪ Financial Records (2018)	One of the available projects examined, discussed the implementation of the environmentally-friendly technology, LED lights at R6, it revealed that their use of electricity had reduced and their cost reduced by 35% by the first year. It was also mentioned by adopting this environmentally-friendly technology it raised their industry standards in line with environmental performance.
Perspective/Theme/Contextual factor covered	Innovation- Process Innovation - Adopting environmentally-friendly technologies and To raise industry standards in line with environmental performance and Managing cost/ Sustainability – Environmental - Energy control
Example of a finding: • Labor Conditions Report (2018)	One of the available reports discussed R6's labor conditions, such as wages, working hours, shifts, days off. Wages are given on time and fairly depending on employee workload, experience and education. The conditions at R6 are safe as health and safety measures are taken to keep in line with safety at R6.
Perspective/Theme/Contextual factor covered	Sustainability – Social - Safe and fair labor conditions

5.4 Conclusion

This chapter provided a description of all six cases as well as the findings of the fieldwork. It discussed individually each of the six case study findings from the semi-structured interviews, observations and secondary data. This chapter was to explore and examine SOI in food SC in each case study. The four key perspectives and their themes were explored and examined and re-refined in this stage. Newly emerged contextual factors were grouped for each theme. Chapter 5 has generated a checklist matrix for each case (Appendices I-N) which reflects a summary of the interviewees' response for each contextual factor for each key theme, which will be used for the cross-case analysis.

The next chapter will discuss the findings from the cross-case analysis in order to explain and evaluate the phenomenon of SOI in food SC and key research enquiry.

Chapter Six: Cross-Case Analysis, Findings and Discussion

6.1 Introduction

In the previous chapter, Chapter 5, the analysis and findings for each individual case were provided. This chapter presents the cross-case analysis, findings and discussion. The main purpose of conducting cross-case analysis is to get an in-depth understanding and explanation for the research undertaken. Miles et al. (2020, p. 95) explains, “*Multiple cases help the researcher find cases to strengthen a theory, built through examination of similarities and differences across cases. [...]. Multiple cases not only pin down the specific conditions under which a finding occurs but also help us form the more general categories of how those conditions may be related.*”

This chapter delineates the cross-case analysis, findings and discussion. **Section 6.2** highlights the key stages the research followed to explain the key analysis and findings across the cases. **Section 6.3** provides discussion of the participants’ demographic. **Section 6.4** provides discussion of the analysis, findings and the theoretical perspectives: network, entrepreneurship, innovation and sustainability, which contribute to SOI in food SC of retailers. In **Section 6.5**, there is also a discussion of the theoretical underpinning of SOI in food SCM. The propositions are discussed and the research questions are answered. **Section 6.6** presents a discussion of the final holistic conceptual framework constructed and the developed typologies. Finally, a conclusion is provided in **Section 6.7**.

6.2 Description of Analyzing across Cases

This research follows key stages to explain the key analysis and findings across the six cases based on the four perspectives, their themes and contextual factors at three levels of actor, dyad and network. It discusses different responses, coding, themes, matrices, network models, propositions and patterns used in order to explain the key findings (Table 6.1).

Table 6.1: Key Stages of Analyzing across Cases (Author's Own Work)

Stage	Description
Stage A	<p>The <i>interviews, observations and secondary data</i> were coded, analyzed and classified into Checklist Matrices for each individual case. The outcomes were labeled as H (High), M (Moderate), and L (Low) orientation to SOI, which allows for comparison and contrast into each <i>Case-Checklist Matrix</i> (Appendices I-N).</p> <p>A Case-Checklist Matrix was constructed in order to explore and analyze the field data (Miles et al., 2020). Miles et al. (2020, p. 139) explains, “<i>A checklist format makes data collection more systematic, enables verification and encourages comparability</i>” For each case, the matrix includes the theoretical perspectives, themes and contextual factors (codes) to understand their contribution to SOI in food SC. The data entered in each matrix is based on the interviewees; their contents from their responses (✓, √-, x) were analyzed then totaled and extracted into labels (H, M, L) (Miles et al., 2020), and supported by observations and secondary data (See Appendices I-N). Based on the contextual factors of each them for each case, those factors that received strong emphasis of orientation to SOI were labeled H (High), some were labeled M for (Moderate) orientation to SOI and L for (Low) orientation to SOI. Then, these are aggregated for each level based on their average. Having the outcomes labeled and aggregated in this manner allows for comparison and contrast. Checklist matrices were applied to enhance the display of new understandings and findings arose in order to construct further matrices (see below) to explain any emerging associations (Miles et al., 2020).</p>
Stage B	<p>As “<i>cross-case analysis first depends on coherent within-case information</i>” (Miles et al., 2020, p.132). A Case-effects matrix “<i>displays data on one or more outcomes in as differentiated a form as the study requires. The term ‘effect’ means outcomes of something</i>” (Miles and Huberman, 1994, p. 137). Hence, a <i>Case-Effects Matrix</i> (Appendix O) was derived from the data of the Checklist Matrices (Appendices I-N) in Stage A. The data in this matrix is then sorted with the intention of ordering the cases by degrees of the major cause of interest, constructing a <i>Case-Order-Effects Matrix</i> (Table 6.2). This is to show the diverse effects for each case and to be able to explain any outcomes. The outcomes were labeled as H (High), M (Moderate) and L (Low), which was derived based on the average of the three levels for each theme. Then the overall orientation of SOI in SC was derived based on the average of the theoretical perspective. This allows for comparison and contrast in order to understand any similarities and differences across cases.</p>

Stage C	A Case Predictor-Outcome Matrix (Appendix P) was constructed in order to “ <i>understand and explain how several contributing factors function together in relation to different levels of a criterion measure</i> ” (Miles and Huberman, 1994, p. 217). With the intention of comparing between cases and to examine the cases by degrees of the main outcome, hence a Case-Order Predictor-Outcome Matrix (Appendix Q) was created. A Case-Order Predictor-Outcome Matrix is ordering the cases by degrees in the Case Predictor-Outcome Matrix (Appendix P). Thus, the data found in the Case-Ordered Effects Matrix (Table 6.2) will be supplemented with the data found in the Checklist Matrices (Appendices I-N) to construct the Case Predictor-Outcome Matrix (Appendix P). The data in this matrix is then sorted with the intention of ordering the cases by degrees of the main outcome, constructing <i>a Case-Order-Predictor-Outcome Matrix</i> (Appendix Q); this matrix is divided into four parts (Tables 6.3, 6.4, 6.5 and 6.6), which are the four perspectives with the purpose of comparing and examining between cases. The outcomes were labeled as H (High), M (Moderate) and L (Low), which were first derived based on the average of responses for each contextual factor at each level. Second, these were aggregated for each level based on their average for each theme. Finally, the overall contribution of each theoretical perspective to SOI was aggregated based on the average of their themes for each level. Having the outcomes labeled and aggregated allows for comparison and contrast.
Stage D	A Network Model is a mapping of nodes associated by links that show interrelationships between variables and re-creates the storyline of the phenomenon (Saldaña, 2016). The arrows illustrate the direction of influence. <i>A network model</i> was constructed for each perspective (Figures 6.1, 6.2, 6.3 and 6.4) in order to illustrate how the perspective, its themes and contextual factors orientation the phenomenon of SOI. Then <i>an aggregated network model</i> (Figure 6.5) was constructed to illustrate how all four perspectives (network, entrepreneurship, innovation and sustainability) orientation to SOI in food SC as well as illustrating the storyline of the phenomenon. This is by providing evidence and <i>replication</i> throughout all the cases to examine the proposed association of the key themes and SOI stages: establishing, developing and implementing.
Stage E	Stage E explains associations and emerging associations to provide propositions (Section 6.5.2). This allowed to <i>build explanations</i> and identify <i>a set of propositions</i> to summarize key conclusions on the phenomena of SOI in food SC and the key associations.
Stage F	To develop a final conceptual framework based on validating the Proposed Conceptual Framework (Figure 4.2) from the findings of the cross case analysis. <i>Pattern matching</i> is applied across all cases in order to provide <i>a Holistic Conceptual Framework</i> (Figure 6.6) and expanding the perspectives to theory building approach on SOI in food SCM.

As noted above, the outcomes were labelled either H (High), M (Moderate) or L (Low), allowing for comparison and contrast (Miles and Huberman, 1994; Miles et al., 2014; 2020). Hence, Miles et al. (2020, p. 279) explains, “*A lot of counting goes on in the background when judgments of qualities are being made. When we identify a theme or a pattern, we are isolating something that (a) happens a number of times and (b) consistently happens in a specific way. The ‘number of times’ and ‘consistency’ judgements are based on counting. When we make a generalization, we amass a swarm of particulars and decide, almost unconsciously, which particulars are there more often, which matter more than others, which go together. When we say that something is ‘important,’ ‘significant,’ or ‘recurrent,’ we have come to that estimate, in part, by making counts, comparisons, and weights. So it is important in qualitative research to know (a) that we are sometimes counting and (b) when it is a good idea to work self-consciously with frequencies and when it is not. There are three good reasons to resort to numbers: to see rapidly what you have in a large batch of data; to verify a hunch or hypothesis; and to keep yourself analytically honest, protecting against bias.*”

6.3 Analyzing Participant Demographics

The demographic information supplied data about the participants of this research, which aided in the interpretation of the findings. The demographics were age, gender, education, country of education and years of experience. It emerged that age played a large role in innovation; as the employees were young they were more creative and innovative compared to someone older (e.g. case 4). The numbers of years of experience showed that employees had a good understanding and are aware of the factors affecting their firm but some were not up-to-date with the latest techniques or technologies they can use (e.g. case 5). Previous research (e.g. Alexander et al., 2015; Jones and George, 2016) indicated it is good to have a balance between the age groups and the years of experience in order to have a workforce that is innovative and aware. Having female employees showed that they have different viewpoints and ideas to male employees and this may lead to more creativity and innovation. Prior research (e.g. Alexander et al., 2015; Jones and George, 2016) found that diverse gender employees perform better than single gender groups as this widens the talent pool, enriches collaboration, provides different viewpoints and enhances performance, and this might lead to more creativity. The highest level of education for employees indicates they can more efficiently achieve tasks that involve critical thinking and literacy. Prior literature (e.g. Andrews and Higson, 2008; Lonsdale et al., 2011) suggested that education increases creativity and induces entrepreneurship and this in turn enhances productivity. The countries where the interviewees studied ranged from the UK, USA, UAE and Jordan, this suggests that they may, in addition to the formal education, have learnt about different cultures, traditions, personal growth and broadened their horizons; which may have affected entrepreneurial thinking and are more innovative.

According to previous literature (e.g. Al-Oun, 2008; Khraim et al., 2011), international food retailers in developing countries in the Middle East seem to be more innovative and more concerned with sustainability, hence they are more productive than their national food retailers. This is contrary to the findings, where a national retailer was ordered as the highest in contribution to SOI in SC (see Table 6.2), they were then followed by the three international retailers and finally the last two national retailers. This suggests that both national and international retailers could make a similar contribution to orientation of SOI. This also revealed that both international and national retailers could have orientation of SOI requirements with similar levels depending on several aspects, such as what resources they have, how innovative they are, their entrepreneurial characteristics and their sustainability goals. Both international and national retailers have to abide by the Jordanian regulations and laws; whereas the international retailers also have to abide by regulations from their main headquarters based outside of Jordan, which may be challenging (e.g. case 1).

6.4 Theoretical Perspectives Contributing to SOI in Food SCM

This section provides the analysis, findings and discussion for the theoretical perspectives: network, entrepreneurship, innovation and sustainability, which contribute to SOI in food SC of retailers. All the cases indicate an orientation to SOI; this matches the proposed conceptual framework (Figure 4.2) for the four theoretical perspectives. Discussion of the findings is supported with the Case-Ordered Effects Matrix, the Case Predictor-Outcome Matrices and the network models.

6.4.1 Similarities and Differences of SOI in food SCM









































































As shown in Table 6.2, case 4 for the supply chain of R4 has a higher orientation to SOI, followed by case 1, case 2, case 3, case 6 with case 5 being the lowest. Firstly, comparing the perspective network across cases, cases 4 and 1 are both high with the similarity of their themes actor position and activities as high while their resources are both moderate. Cases 2, 3, 6 and 5 are different, with a moderate orientation to SOI; with the similarity of their themes actor position and resources are all moderate, while case 6 theme activities is low compared to cases 2, 3 and 5, which are moderate.

Secondly, comparing the perspective entrepreneurship across cases, cases 1, 2 and 3 are all moderate, with the similarity of their theme intrapreneurship as moderate. The theme corporate entrepreneurship is similar for cases 1 and 3 as they are both moderate while case 2 is low. The entrepreneurial HR is similar for cases 1 and 2 as they are both moderate while case 3 is low. Cases 6 and 5 are different, with a low orientation to SOI; with the similarity of their themes corporate entrepreneurship, intrapreneurship and entrepreneurial HR all being low. However, case 4 compared to the cases is high, with its theme intrapreneurship being moderate, similar to cases 1, 2 and 3.

Thirdly, comparing the perspective innovation across cases, cases 4 and 1 are both high with the similarity of their themes product and process innovation as high while their organizational innovation are both moderate. Cases 2, 3 and 6, are all moderate with the similarity of their themes product and organizational innovation being moderate, case 3 process innovation is low compared to cases 2 and 6. However, case 5 compared to the rest of the cases is low, with its theme process innovation being moderate, similar to cases 2, 4 and 6.

Finally, comparing the perspective sustainability across cases, cases 4, 1 and 2 are high with the similarity of themes: environmental and economic as high while their theme social are moderate. Cases 3, 6 and 5 are all moderate, with the similarity of themes environmental and economic being moderate, while case 3 theme social is low compared to cases 6 and 5, which are moderate.

Table 6.2: Case-Ordered Effects Matrix: Network, Entrepreneurship, Innovation and Sustainability contributions to SOI in Food SC of Retailers. ((Author's own work) Adapted from Miles and Huberman, 1994, p. 209; Miles et al., 2014, 2020).

Perspectives	Themes	Themes Contributing to SOI in SC of Retailers											
		Case 4- (R4)		Case 1- (R1)		Case 2 (R2)		Case 3 - (R3)		Case 6- (R6)		Case 5- (R5)	
		Overall for SC of R4		Overall for SC of R1		Overall fo SC of R2		Overall for SC of R3		Overall for SC of R6		Overall for SC of R5	
Network	Actor position	H		H		M		M		M		M	
	Activities	H		H		M		M		L		M	
	Resources	M		M		M		M		M		M	
Entrepreneurship	Corporate Entrepreneurship	H		M		L		M		L		L	
	Intrapreneurship	M		M		M		M		L		L	
	Entrepreneurial HR	H		M		M		L		L		L	
Innovation	Product Innovation	H		H		M		M		M		L	
	Process Innovation	M		H		M		L		M		M	
	Organizational Innovation	H		M		M		M		M		L	
Sustainability	Environmental	H		H		H		M		M		M	
	Social	M		M		M		L		M		M	
	Economic	H		H		H		M		M		M	



H: High orientation to SOI



M: Moderate orientation to SOI



L: Low orientation to SOI

6.4.2 Network Perspective Contributing to SOI

Table 6.3 underlines the point that the Network perspective has a positive contribution to SOI in SC of Retailers, as the overall findings of all the cases illustrates a high or moderate orientation to SOI. As shown in Table 6.3 below, cases 4 and 1 were clearly the exemplars for SOI in food SC, as both cases were ordered as high, whereas cases 2, 3, 6 and 5 were ordered as moderate orientation on SOI. The network perspective has three themes: *actor position, activities and resources*:

a) Actor Positioning: This first theme, at the actor and dyad levels, they were all similarly categorized as high or moderate. At the network level it differed as some were categorized as having a low orientation to SOI. The research found that **the position imbalance** across cases 4 and 1 at all three levels had positive orientation to their SOI. On the other hand, it differed across cases 3, 6 and 5 at all three levels, where there was little orientation to their SOI. This confirmed that cases 4 and 1 have the focal actor' power in the chain and they cooperate with other actors along the chain to improve the other chain actors' performance, which in turn enhances the focal actors' performance. While case 2 did not discuss or comment on position imbalance, it was revealed from the observations and secondary data that they do not cooperate with other actors along the chain in regards to improving the other chain actors' performance.

It was found that **leadership** across cases 4, 1, 3 and 6 at the actor level had positive orientation to SOI. It differed across cases 2 and 5 at the actor level, with little orientation to SOI. Leadership across cases 1, 2, 3, 6 and 5 at the dyad level had little orientation to SOI, while case 4 contrasted with this, as it had positive orientation to SOI. Leadership across cases at the network level was similar as they all had little orientation to SOI. This confirmed that cases 4, 1, 3 and 6 at the actor level were guiding and motivating others to achieve the retailers' goals. It was also confirmed at the dyad level for case 4 that the focal actor was assisting and leading them with their knowledge and experience. Furthermore, at the network level, the focal actor was not leading them as much as at the actor and dyad levels as they all had little orientation to SOI. It was found that **reputation** across cases at the actor and dyad levels had positive orientation to SOI. At the network level, for cases 2 and 3 there was little orientation to SOI while cases 4, 1, 6 and 5 had positive orientation. This confirmed that the majority of the actors consider their reputation in terms of the perception of past, current and potential customers, hence indicating an orientation to SOI positively.

The findings showed that **brand image** across all cases at the actor and dyad levels had positive orientation to SOI. This differed at the network level for case 3, where there was little orientation to SOI, while cases 4, 1, 2, 6 and 5 had positive orientation. This confirmed that all the retailers consider their brand image of high importance while the majority of the rest of the actors across the

supply chain consider the brand image of the retailer they collaborate with as highly important in terms of the public's opinion about the retailer's corporate actions and this therefore influences SOI. It was found that **commitment** across all cases at the actor and dyad levels had positive orientation to SOI. Nevertheless, this differed at the network level for cases 6 and 5, where there was little orientation to SOI, while cases 4, 1, 2 and 3 had positive orientation. This confirmed that the majority of the actors across the supply chain believe that it is important to be committed to fulfilling agreements with each other in order to have orientation to SOI.

b) Activities: for this theme at the actor and dyad levels, the majority were similarly categorized as high or moderate. However, at the network level it differed as some were categorized as having a low orientation to SOI. It is found that the **planning activities** across cases 4, 1, 2, 3 and 5 at the actor level had positive orientation to SOI. On the other hand, it differed across the dyad level for case 6, where there was little orientation to SOI, while the rest of the cases had positive orientation. At the network level for cases 1, 2, 3, 6 and 5 there was little orientation to SOI, but case 4 had positive orientation. This confirmed that all the focal retailers, as well as the majority of the dyadic actors, consider planning activities for their business plan with other chain actors as a significant aspect, in contrast to most of the network actors, who did not. If the network actors planned their activities better with other chain actors this might have positive orientation to SOI.

It was found that **organizing activities** at the actor level across cases 4, 1, 3, 6 and 5 had positive orientation to SOI, while case 2 differed as it had little orientation. At the dyad level for cases 4, 1, 3 and 6 there was positive orientation, while cases 2 and 5 had little orientation to SOI. It differed across the network level for cases 2, 3, 6 and 5, which had little orientation, while only cases 4 and 1 had positive orientation to SOI. This confirmed that the majority of the focal actor and dyadic actors had a good link between people, resources and their implementation and other actors in the chain, hence leading to positive orientation to SOI. It was revealed that if the network actors organized their activities better with other chain actors this might have positive orientation to SOI.

The research found that **controlling activities** similarly at the actor and dyad level across cases 4, 1, 2, 3 and 6 had positive orientation to SOI, while only case 5 differed as it had little orientation. It differed across the network level for cases 4, 2, 3, 6 and 5, which had little orientation, while only case 2 had positive orientation to SOI. This confirmed that the majority of the focal actors and dyadic actors collaborate with other chain actors to control and enhance their performance. It was revealed that if the network actors improved their controlled activities with other chain actors this might have positive orientation to SOI. It was found that **exchange activities** at the actor level across all cases

had positive orientation to SOI. But it differed across the dyad level, where cases 4, 1, 2 and 5 had positive orientation, while cases 3 and 6 had little orientation to SOI. At the network level, only case 3 had little orientation while the other cases had positive orientation to SOI. This confirmed that all the focal retailers and the majority of the actors at dyad and network levels considered exchange activities an important aspect in indicating an orientation to SOI as they sort out activities where products, services, money and technologies can be exchanged with SC actors.

c) Resources: or the third theme, resources at the actor and dyad level, all cases were similarly categorized as high or moderate. However, at the network level it differed as some were categorized as low orientation to SOI. It is found that the **financial resources** across cases 4, 1, 2, 3 and 6 at the actor and dyad levels had positive orientation to SOI, while case 5 had little orientation. It differed across the network level, where cases 6 and 5 had little orientation, while cases 4, 1, 2 and 3 had positive orientation. This confirmed that the majority of the actors at focal actor, dyad and network levels have financial resources, either internal finance, shared finance between dyads or investors from their networks, which have positive orientation to SOI.

It was found that **information resources** across cases 4, 1, 2, 5 and 6 at the actor and dyad levels had positive orientation, while case 3 had little orientation to SOI. It differed across the network level, where cases 2, 3 and 5 had little orientation, while cases 4, 1 and 6 had positive orientation to SOI. This confirmed that the majority of the focal and dyadic actors and half of the network actors have information resources from data, information, knowledge and/or experience which have positive orientation to SOI. In fact, if the network actors improved their information resources with other chain actors this might have positive orientation to SOI. It is found that **physical resources** across all cases at both the actor and dyad levels had positive orientation to SOI. On the other hand, it differed at the network level, where cases 2, 3, 6 and 5 had little orientation, while cases 4 and 1 had positive orientation. This confirmed that the focal actor and dyadic actors have tangible assets to achieve their goal, and hence this has positive orientation to SOI. It was revealed that if the network actors improved their physical resources (e.g. cooling/digital vehicles to distribute products), with other food chain actors, this might have positive orientation to SOI.

It was found that **personnel resources** at the actor level across cases 4, 1, 3 and 6 had positive orientation, while cases 2 and 5 differed as they had little orientation to SOI. At the dyad level, cases 4, 1 and 3 had positive orientation, while cases 2, 6 and 5 differed as they had little orientation. At the network level across cases there was little orientation to SOI. This confirmed that the majority of the focal retailers have personnel resources and use them efficiently to recruit, manage and train

their staff in order to improve them. It was revealed at both the dyad and network levels that they needed to use their personnel resources efficiently and to put in more effort to increase their resources in order to have positive orientation to SOI.

To conclude, the network perspective has positive contribution to SOI in the SC of Retailers. It was found that the interaction of the three themes of the network (actor position, activities and resources) are necessary for effective and enhanced benefits across food chains. This is in line with previous research (e.g. Hakansson, 1987; Lenney and Easton, 2009; Guercini et al., 2011; Aarikka-Stenroos et al., 2014). Previous research encouraged future researchers to study from the dyad and network perspective across the chain actors (e.g. Wilhelm, 2011; Bellamy et al., 2014). Hence, this research undertook this to understand SOI in SCM from the network perspective across the actor, dyad and network levels, which will be beneficial to explain SOI across the SC. The research found that when the three themes interacted together across the three levels the overall performance of the supply chain was stronger and may lead to positive orientation to their SOI. It also showed that there were relationships, which established quality communication, which allowed actors across the supply chain to have access to knowledge, activities and resources greater than their capabilities, therefore producing long-term relationships in the SC. This was in line with previous literature (e.g. Nagurney, 2010; Aarikka-Stenroos et al., 2014; De Vargas Mores et al., 2018).

Table 6.3: A Case-Ordered Predictor-Outcome Matrix: Network contribution to SOI in Food SC of Retailers. ((Author's own work) Adapted from Miles and Huberman, 1994; Miles et al., 2014; Miles et al., 2020, p. 267).

Case-Ordered Predictor-Outcome Matrix: Network contribution to SOI in SC of Retailers																					
Perspectives	Themes	Contextual Factors	Case 4 (R4)			Case 1 (R1)			Case 2 (R2)			Case 3 (R3)			Case 6 (R6)			Case 5 (R5)			
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	
Network	Actor position	-Position Imbalance	H	H	H	M	M	M	N/A	N/A	N/A	L	L	L	L	L	L	L	L	L	L
		-Leadership	M	M	L	M	L	L	L	L	L	M	L	L	M	L	L	L	L	L	L
		-Reputation	H	H	M	H	H	M	H	M	L	H	M	L	H	H	M	H	H	M	M
		-Brand Image	H	H	M	H	H	M	H	M	M	H	M	L	H	H	M	H	H	M	M
		-Commitment	H	H	M	H	H	M	H	M	M	H	M	M	M	M	L	M	M	L	L
	Aggregate		H	H	M	H	H	M	H	M	M	H	M	L	M	M	L	M	M	L	L
	Activities	-Planning activities	H	H	M	H	H	L	M	M	L	M	M	L	M	L	L	M	M	L	L
		-Organizing activities	H	H	M	H	H	M	L	L	L	M	M	L	M	L	L	M	M	L	L
		-Controlling activities	M	M	L	M	M	M	M	M	L	M	M	L	M	M	L	L	L	L	L
		-Exchange activities	H	H	M	H	H	M	H	M	M	H	L	L	H	L	M	H	H	M	M
Aggregate		H	H	M	H	H	M	M	M	L	M	M	L	M	L	L	M	M	L	L	
Resources	-Financial resources	H	M	M	H	H	H	H	H	M	H	H	M	M	M	L	L	L	L	L	
	-Information resources	H	M	M	H	M	M	M	M	L	L	L	L	H	M	M	M	M	L	L	
	-Physical resources	H	H	M	M	M	M	M	M	L	M	M	L	M	M	L	M	M	L	L	
	-Personnel resources	M	M	L	H	H	L	L	L	L	M	M	L	M	L	L	L	L	L	L	
	Aggregate		H	M	M	H	M	M	M	M	L	M	M	L	M	M	L	M	M	L	L
	Overall Contribution from Network Perspective to SOI		H	H	M	H	H	M	M	M	L	M	M	L	M	M	L	M	M	L	L

H: Contextual factor has high orientation to SOI

M: Contextual factor has moderate orientation to SOI

L: Contextual factor has low orientation to SOI

It was concluded in this research that the retailer, focal actor, could use its power in the SC to help and guide other actors towards enhancing sustainability (e.g. Lambert, 2008; Petljak et al., 2018), as well as acting as leaders that guide and motivate in order to achieve their goals (e.g. Pathak et al., 2014). Their reputation (e.g. Sayed and Sunjka, 2016) and brand image (e.g. Sayed and Sunjka, 2016) was found to be essential as well as their commitment (e.g. La Londe, 2002; Michalski et al., 2018) with other actors in the SC, their employees and customers. This research findings showed that planning activities (e.g. Lenney and Easton, 2009) for their business plan at the three levels and organizing activities (e.g. Guercini et al., 2011) that link people, resources and their work implementation at the three levels are important. Controlling activities (e.g. Guercini et al., 2011) are also important when they work at the three levels in order to control and enhance their performance and exchange activities (e.g. Lenney and Easton, 2009), where products, services, money and technologies can be exchanged at the three levels. The findings also indicated that financial resources (e.g. Lenney and Easton, 2009) are important, both internal finance and shared finance between dyads or investors from their networks. Information resources (e.g. Pathak et al., 2014; Bellamy et al., 2014) such as data, information, knowledge and experience, physical resources (e.g. Pathak et al., 2014), which are tangible assets in order to achieve their goal and personnel resources (e.g. Bellamy et al., 2014) used to recruit, manage and train their staff in order to improve them are also important.

It was revealed that the emergent contextual factors for actor position, activities and resources across the cases (see above Table 6.3) are important sub-themes that have orientation to SOI in SCM. It was found that each theme has positive orientation to SOI. Hence, the contextual factors of each theme are important when interacting together in order to enhance SOI in the food SC of retailers. It was also clear from this research that the three themes should interact together in order to enhance SOI in the SC (see Figure 6.1). The actors need to establish and organize their activities and consider the use of their resources, along with building their actor positions. Hence, the retailer, as focal actor should simultaneously consider the actor position, activities and resources; this should be done at all three levels, in order to successfully lead establishing and further developing SOI across the supply chain. This was indicated in cases 4 and 1, with positive orientation to SOI at all three levels, as these cases simultaneously operated with the actor position, activities and resources, while the other cases 2, 3, 6 and 5 had positive orientation at the actor level and dyad level but had a lower orientation at the network level.

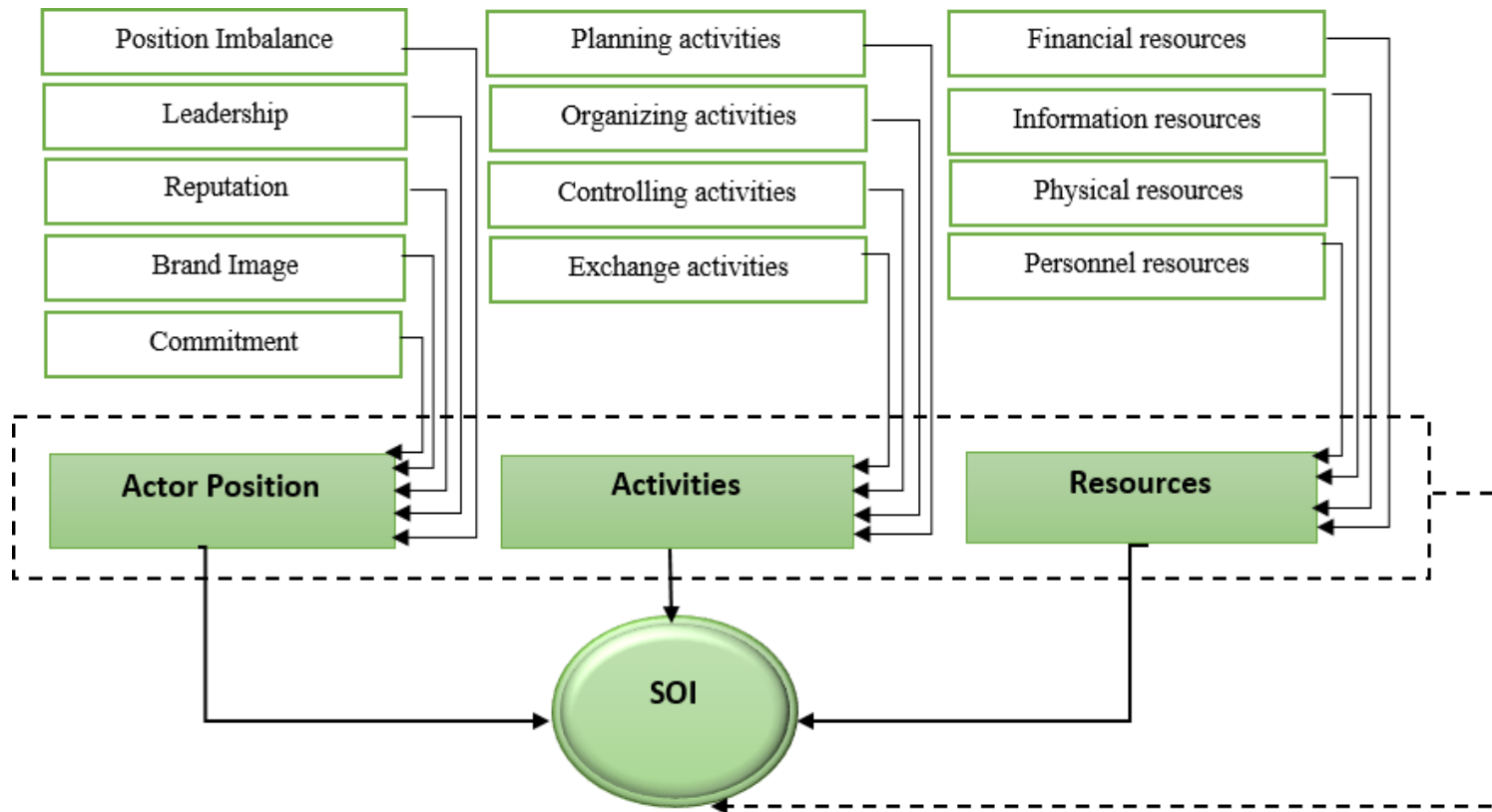


Figure 6.1: Network Model for Network Perspective ((Author's own work) Adapted from Saldaña, 2016).

6.4.3 Entrepreneurship Perspective Contributing to SOI

Table 6.4 shows that the perspective Entrepreneurship makes a positive contribution to SOI in food SC of Retailers, as all cases indicate an orientation to SOI. Cases 4, 1, 2 and 3 are ordered as moderate; however, cases 6 and 5 were ordered as having a low orientation to SOI. This entrepreneurship perspective has three themes: *corporate entrepreneurship, intrapreneurship and entrepreneurial HR*:

a) Corporate Entrepreneurship: or this theme at the actor level, the majority were all similarly categorized as high or moderate. At the dyad and network levels it differed as some were categorized as low orientation to SOI. It was found that the stages of establishing and developing **innovative ideas** at the focal actor level, across all cases, all similarly indicate an orientation to SOI positively. At the dyad level, cases 2, 6 and 5 differed as they had little orientation, while cases 4, 1 and 3 had positive orientation to SOI. At the network level, cases 1, 2, 3, 6 and 5 had little orientation, while case 4 differed and had positive orientation to SOI. This confirmed that all the retailers go through the process of conceiving, fostering, launching and managing an innovative idea, while at the dyad and network levels only a few actors had knowledge of what the process is. It was revealed that if the retailers informed the chain's actors better this might improve those actors' performance.

The research found that the **retailer supports innovation** across all cases as they all have positive orientation. At the dyad level, the majority had positive orientation, except for case 6, which had little orientation to SOI. At the network level, cases 2, 3 and 6 had little orientation but cases 4, 1 and 5 had positive orientation. This confirmed that all the retailers support innovation and that the retailer interacts with its dyadic actors to support innovation. It was revealed that if the retailers interacted better with their network actors to support innovation this may improve the other SC actors' performance, enhancing SOI. It was found that the retailer provides **resources and easy accessibility** across the majority at the actor level. All have positive orientation except case 5, which had little orientation to SOI. At the dyad level, cases 6 and 5 had little orientation and cases 4, 1, 2 and 3 had positive orientation. At the network level, the majority had little orientation, except case 1, which had positive orientation to SOI. This confirmed that the majority provide resources such as financial, information, physical and personnel resources as well as easy accessibility to them and that the majority interact with the dyad actors in regards to providing and exchanging resources. It was found that if the retailers interacted better with the network actors in providing resources this could improve the other chain actors' performance, hence enhancing SOI.

This research indicated that the retailer **structures for an intrapreneurial environment** across cases 4, 1 and 3 had positive orientation at the actor and dyad levels, while cases 2, 6 and 5 differed as they had little orientation to SOI. At the network level, cases 2, 3, 6 and 5 had little orientation and only cases 4 and 1 had positive orientation. This confirmed that, though all the retailers support innovation, not all of them provide an intrapreneurial environment where the retailer allows mistakes and failures. In addition, having multidisciplinary teams may lead to enhancing SOI. It was found that if the retailers interacted better with their dyads and networks in structuring an intrapreneurial environment this could improve the chain actors' performance, thereby enhancing SOI in SC.

It was found that **developing individual managers for corporate entrepreneurship** at the actor level for cases 4 and 6 had positive orientation while the rest of the cases had little orientation to SOI. At the dyad level, only case 4 had positive orientation and the other cases had little orientation. Similarly, all the cases at the network level had little orientation to SOI. This confirmed that only a minority of the retailers had a concern for developing individual managers for corporate entrepreneurship. It was found that if all retailers considered developing individual managers into intrapreneurial catalysts as an important aspect this might lead to positive orientation to implementing SOI. It was revealed that if the retailers interacted better with their dyad and network actors in developing managers for corporate entrepreneurship this may improve the other chain actors' performance, thereby enhancing SOI in SC. It was found that **culture** at the actor and dyad levels for cases 4, 1 and 6 had positive orientation while cases 3 and 5 had little orientation to SOI. At the network level cases 3, 6 and 5 had little orientation and cases 4 and 1 had positive orientation. This confirmed that culture, either external and/or internal, influences most of the retailers. It was revealed that it is important to either merge or divide internal/external culture when the retailer works with its dyad and network actors. It should be noted that case 2 did not comment on culture.

b) Intrapreneurship: or the second theme, intrapreneurship at the actor level, the majority were all similarly categorized as high or moderate. At the dyad and network levels it differed as some were categorized as having a low orientation to SOI. The research found that intrapreneurs are **innovative and creative** at the actor level across all cases and similarly indicate an orientation to SOI positively. At the dyad level, cases 6 and 5 had less orientation, while in contrast the other cases had positive orientation. However, at the network level, cases 4 and 1 had positive orientation and the rest of the cases had less orientation to SOI. This confirmed that all the retailers consider intrapreneurs (some of their internal employees) as being innovative and creative, which may lead to positive orientation to SOI. It was found in several cases, when the retailer worked with their

dyad actor, that the retailer considered the employees of the dyad actor as being innovative and creative based on the nature of what they were discussing and trying to solve. It was revealed in several cases, when the retailer worked with their network actor, that the retailer considered the network's employees as not being innovative and creative, and that they should consider thinking outside of the box, which may lead to better problem solving and the ability to improve their performance related to SOI in SC.

It was suggested that firms take the **risk and responsibility** at the actor level across all the cases similarly indicate an orientation to SOI positively. At the dyad level the majority had positive orientation except for case 3, which had little orientation. At the network level, cases 2, 3, 6 and 5 had little orientation and cases 1 and 4 had positive orientation to SOI. This confirmed that all the retailers take risk or responsibility when the developing and implementation of an innovative idea has been discussed, which may lead to positive orientation to SOI. It was revealed that when the retailer is jointly planning and problem solving for mutual benefit with their dyadic actor that they both take the risk and responsibility of implementing an innovative idea. It was found that when the retailer considers jointly planning and problem solving with their network actors they should consider both taking the risk and responsibility of implementing an innovative idea, hence leading to better problem solving and this can improve their performance, hence enhancing SOI.

This research showed that intrapreneurs applying **firms' management policies and structure** at both the actor and dyad level had positive orientation, but across all cases at the network level this differed as they all had little orientation to SOI. This confirmed that all the retailers have knowledge that their intrapreneurs apply the management policies and structure, which may lead to positive orientation to SOI. However, when the retailer worked with its dyad and network actors it revealed that their intrapreneurs should consider applying their firms' management policies and structure better, as this may enhance SOI. Intrapreneurs use the **firms' resources efficiently** at the actor level; the majority had positive orientation, except case 5, which had little orientation to SOI. At the dyad level, cases 4, 1 and 3 had positive orientation, but cases 2, 6 and 5 differed as they had little orientation. Across all cases at the network level they had little orientation to SOI. This confirmed that the majority of the retailers consider that intrapreneurs should make use of the actors' resources efficiently as an important aspect that may lead to positive orientation to SOI. It was revealed at both the dyad and network levels that they needed to use the actor's resources efficiently for SOI.

The research found that employees at the actor level for cases 4, 1, 2 and 6 would receive their **fixed salary plus a bonus or reward** if their innovative idea was implemented, hence having positive

orientation. However, cases 3 and 5 would not receive a bonus if their idea was implemented, hence having little orientation to SOI. At the dyad level, cases 4, 1 and 2 had positive orientation, while cases 3, 6 and 5 had little orientation. At the network level, the majority had little orientation except case 4, which had positive orientation to SOI. This confirmed that the majority provide a bonus or reward in addition to their fixed salary if their employees' innovative idea was implemented and this may lead to positive orientation to SOI. It was revealed at both the dyad and network levels that if their employees received their fixed salary plus a bonus or reward if their innovative idea was implemented this would make them more innovative and creative which may enhance SOI.

c) Entrepreneurial HR: For the third theme, entrepreneurial HR at the focal actor level, all the cases were similarly categorized as high or moderate. At the dyad and network levels it differed as some were categorized as having low orientation to SOI. It was found that at the actor level in cases 4, 1 and 2 people believed their HR understand **the whole context of their business**, hence having positive orientation. However, cases 3, 6 and 5 did not believe their HR understand the whole business context, hence having little orientation to SOI. At the dyad and network level, cases 2, 3, 6 and 5 have little orientation, while only cases 4 and 1 have positive orientation. This confirmed that several retailers and a few dyad and network actors believe their HR understand the whole context of their business. It was revealed that if the HR really did understand the whole factors affecting their firm either the retailer, dyad and network actors, including how and why decisions are made in order to achieve their business goals, this could lead to positive orientation to SOI.

It was indicated that at the actor level across all cases, HR that **motivate and lead their employees** have positive orientation to SOI. At the dyad level, cases 6 and 5 had little orientation, while cases 4, 1, 2 and 3 had positive orientation. At the network level, the majority of cases had little orientation except for case 1, which had positive orientation to SOI. This confirmed that all the retailers believe that their HR motivate and lead their employees, hence having positive orientation to SOI. However, when the retailer worked with its dyad and network actors it revealed that their HR should consider motivating and leading employees better as this may enhance SOI. At the actor level across all cases, HR are **drivers of success**, hence having positive orientation to SOI. At the dyad level, cases 6 and 5 had little orientation, while cases 4, 1, 2 and 3 had positive orientation. At the network level, the majority of the cases had little orientation except for case 1, which had positive orientation to SOI. This confirmed that all the retailers believe that their HR are drivers of success. However, when the retailer worked with its dyad and network actors it revealed that their HR should consider being better drivers of success to their employees and when engaging with other actors, as this may enhance SOI.

The research found that at the actor level across all cases, **HR think like entrepreneurs**, hence having positive orientation to SOI. At the dyad and network level, cases 3, 6 and 5 had little orientation, while cases 4, 1 and 2 had positive orientation. This confirmed that all the retailers believe that their HR thinks like entrepreneurs, they think ‘outside of the box’ and/or are innovative, hence leading to positive orientation to SOI. Yet, when the retailer worked with its dyad and network actors it revealed that their HR should consider thinking like entrepreneurs as this might enhance SOI in food SC. It was found that at actor level across all cases, HR are considered to be **good decision makers**, hence having positive orientation to SOI. At the dyad level, cases 2 and 3 had little orientation, while cases 4, 1, 6 and 5 had positive orientation. At the network level, the majority of the cases had little orientation except cases 4 and 1, which had positive orientation. This confirmed that all the retailers believe that their HR are good decision makers, hence leading to positive orientation to SOI. However, when the retailer worked with its dyad and network actors it revealed that their HR should consider being better decision makers as this may enhance SOI.

Drawing on the above, the entrepreneurship perspective makes positive contribution to SOI in the SC of Retailers. It was found that the three themes of entrepreneurship (corporate entrepreneurship, intrapreneurship and entrepreneurial HR) are important in maintaining competitiveness and achieving goals. Organizations need to engage in sustained entrepreneurial efforts. This is in line with previous research (Nason et al., 2015; Jay and Gerard, 2015; Gómez-Cedeño et al., 2015). However, it was noticed in previous research that there was a need to investigate more and in-depth on the orientation of corporate entrepreneurship on SOI along the SC actors (Klewitz and Hansen, 2014), the role of intrapreneurs across the actors in the supply chain to understand SOI (e.g. Steward et al., 2010; Jay and Gerard, 2015) and entrepreneurial HR at all three levels (Gómez-Cedeño et al., 2015). Hence, to add on previous research by understanding SOI from the three themes of entrepreneurship perspective across the actor, dyad and network levels, which will be beneficial in analyzing supply chains from this perspective. The research found that when the three themes interacted together across the three levels the food supply chain was stronger and this may lead to positive orientation to SOI. It also provided rich understandings of how chain actors integrate the operations and activities between the focal actor (the retailer) as CE and other chain actors; this is in line with prior literature (e.g. Roscoe et al., 2015; Gómez-Cedeño et al., 2015). It was shown that the focal actor (the retailer) as well as its HR and other employees, and the dyad and network actors should have entrepreneurial characteristics to lead to better connecting of economic growth across them and make contributions in terms of new knowledge to all.

Table 6.4: A Case-Ordered Predictor-Outcome Matrix: Entrepreneurship contribution to SOI in Food SC of Retailers. ((Author's own work)
Adapted from Miles and Huberman, 1994; Miles et al., 2014; Miles et al., 2020, p. 267).

Case-Ordered Predictor-Outcome Matrix: Entrepreneurship contribution to SOI in SC of Retailers																				
Perspectives	Themes	Contextual Factors	Case 4 (R4)			Case 1 (R1)			Case 2 (R2)			Case 3 (R3)			Case 6 (R6)			Case 5 (R5)		
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network
Entrepreneurship	Corporate Entrepreneurship	- Stages of innovative ideas	H	H	M	H	M	L	H	L	L	M	M	L	M	L	L	H	L	L
		- Retailer supports innovation	H	H	M	H	M	M	H	M	L	H	M	L	H	L	L	H	M	M
		- Retailer provides resources/accessibility	H	H	L	H	H	H	M	M	L	M	M	L	M	L	L	L	L	L
		- Retailer structures/ intrapreneurial enviro	H	M	M	M	M	M	L	L	L	H	M	L	L	L	L	L	L	L
		- Developing individual managers for CE	M	M	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L
		- Culture	H	H	M	M	M	M	N/A	N/A	N/A	L	L	L	M	M	L	L	L	L
	Aggregate		H	H	M	H	M	M	M	L	L	M	M	L	M	L	L	L	L	L
	Intrapreneurship	- Are innovative and creative	H	M	M	H	M	M	M	M	L	M	M	L	H	L	L	H	L	L
		- Firm takes the risk and responsibility	H	M	M	H	M	M	M	M	L	M	L	L	H	M	L	H	M	L
		- Apply firms’ mgt. policies/structure	M	M	L	H	H	L	H	M	L	H	M	L	M	M	L	M	M	L
		- Use of firms’ resources efficiently	M	M	L	H	H	L	M	L	L	H	M	L	M	L	L	L	L	L
		- Fixed salary + Bonus/reward (if any)	H	M	M	M	M	L	H	M	L	L	L	L	M	L	L	L	L	L
	Aggregate		H	M	M	H	M	L	M	M	L	M	M	L	M	L	L	M	L	L
Entrepreneuria IHR	- Understand whole context/business	H	H	M	H	H	H	M	L	L	L	L	L	L	L	L	L	L	L	
	- Motivate and lead their employees	M	M	L	M	M	M	M	M	L	M	M	L	M	L	L	M	L	L	
	- Driver of success	M	M	L	M	M	M	M	M	L	M	M	L	M	L	L	M	L	L	
	- Entrepreneurial thinking	H	H	M	M	M	M	M	M	M	M	L	L	M	L	L	M	L	L	
	- Good decision makers	H	H	M	M	M	M	M	L	L	M	L	L	M	M	L	M	M	L	
Aggregate		H	H	M	M	M	M	M	M	L	M	L	L	M	L	L	M	L	L	
Overall Contribution from Entrepreneurship Perspective to SOI		H	M	M	H	M	M	M	M	L	M	M	L	M	L	L	M	L	L	

H: Contextual factor has high orientation to SOI

M: Contextual factor has moderate orientation to SOI

L: Contextual factor has low orientation to SOI

In this research, it was revealed that the chain actors have stages of establishing and developing innovative ideas, which is the process of conceiving, fostering, launching and managing an innovative idea (Cases 1-6). It was found that it is important for retailers to support innovation (e.g. Kuratko and Morris, 2013; Nason et al., 2015), provide resources (e.g. Nason et al., 2015) such as financial, information, physical and personnel resources and provide easy accessibility to these resources, developing individual managers into intrapreneurial catalysts (e.g. Birkinshaw, 1997; Hornsby et al., 2009) and that retailers should provide a structure that supports an intrapreneurial environment (e.g. Orchard et al., 2018) that allows mistakes and failures, in addition to having multidisciplinary teams. This also affects culture (e.g. Orchard et al., 2018). Either internal or external culture may have an effect on a retailer. It is important that an intrapreneur is innovative and creative (e.g. Veronica et al., 2013), when an intrapreneur does comes up with an innovative idea that the enterprise takes the risk and/or responsibility of implementing it (e.g. Baruah and Ward, 2014) and that intrapreneurs should receive a bonus/reward if their innovative idea is implemented (e.g. Orchard et al., 2018) as this motivates them and other employees to be innovative. Intrapreneurs should apply the retailers' management policies and structure (e.g. Morris and Kuratko, 2002; Baruah and Ward, 2014) and making use of the actors' resources efficiently (e.g. Baruah and Ward, 2014). HR understands the whole business context (e.g. Menon, 2012), such as understanding the factors affecting their retailer and their decisions of business goals, as well as their HR motivating and leading their employees and they are drivers of success (e.g. Miller, 2006; Grünhagen et al., 2014). Along with this, their HR should think like entrepreneurs (e.g. Gómez-Cedeño et al., 2015).

This research confirmed that the contextual factors of each theme of corporate entrepreneurship, intrapreneurship and entrepreneurial HR are important when interacting together in order to enhance SOI. The three themes should interact together in order to enhance SOI in SCM (Figure 6.2). The focal actors need to establish themselves in terms of the three themes together with their employees as intrapreneurs. The focal actor should simultaneously establish and develop the three themes; this should be done at all three levels, to successfully implement SOI. This was strong evidence in cases 4 and 1, with positive orientation to SOI at all three levels, as these cases simultaneously used the three themes, while the other cases had lower orientation at the dyad and network level. It was revealed that a focal actor that is considered a corporate entrepreneur should consider actor position in addition to activities and resources, while their intrapreneurs and entrepreneurial HR help in building their actor position and activities as well as efficiently use their resources. Hence, there is a link between the network perspective and entrepreneurship perspective.

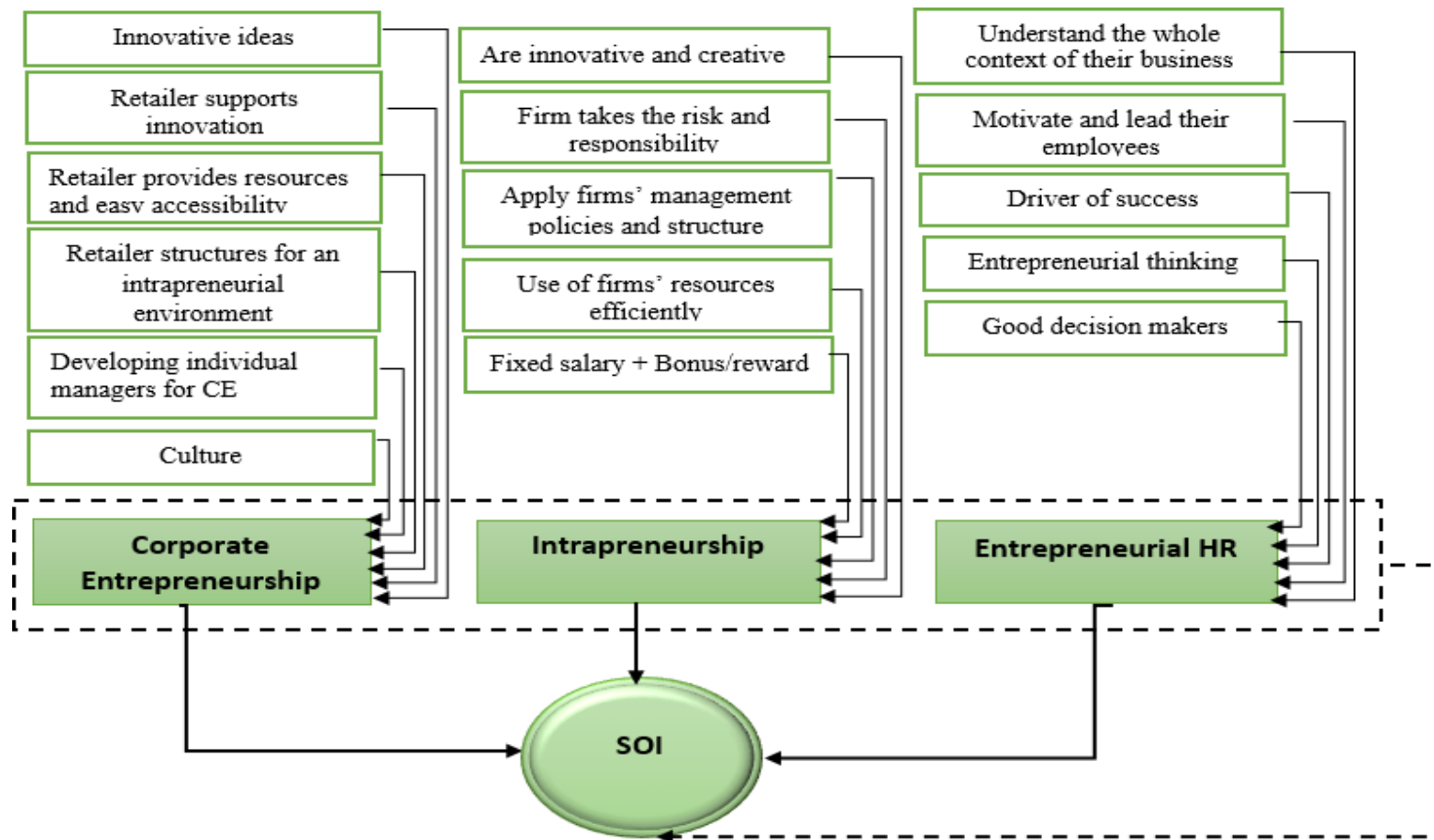


Figure 6.2: Network Model for Entrepreneurship Perspective ((Author's own work) Adapted from Saldaña, 2016))

6.4.4 Innovation Perspective Contributing to SOI

Table 6.5 outlines how the perspective Innovation makes a positive contribution to SOI in the SC of Retailers, as most of all cases show positive orientation to SOI. As shown in the table below, cases 4 and 1 are ordered as high, cases 2, 3 and 6 are ordered as moderate; however, case 5 was ordered as having a low orientation to SOI. The innovation perspective has three themes: *product innovation, process innovation and organizational innovation*:

a) Product Innovation: For the first theme, at the actor level, all the cases were similarly categorized as high or moderate. At the dyad level the majority were similarly categorized as high or moderate except one case and at the network level it differed as some were categorized as having a low orientation to SOI. It was found that when **staying competitive** at the actor and dyad levels all the cases had positive orientation. At the network level, cases 2, 3 and 5 differed as they had little orientation and cases 4, 1 and 6 had positive orientation to SOI. This confirmed that all the retailers and dyadic actors believe that staying competitive is important, hence leading to positive orientation to SOI. It was revealed that the network actors should try better tactics to stay competitive to lead to positive orientation to SOI. The research found that **seizing market opportunities** at the actor and dyad levels all the cases had positive orientation. But, at the network level, cases 2, 3, 6 and 5 differed as they had little orientation and only cases 4 and 1 had positive orientation to SOI. This confirmed that all the retailers and dyadic actors believe that seizing market opportunities is important, leading to positive orientation to SOI. However, it was revealed that the network actors should try seizing market opportunities to lead to positive orientation to SOI.

It was found that **designing for sustainability** at the actor level across all cases had a similarly positive orientation to SOI. At the dyad level, cases 6 and 5 had little orientation while the rest of the cases had positive orientation. At the network level, the majority had little orientation, except case 1, which had positive orientation to SOI. These confirmed that all the retailers design for sustainability and consider it as an important aspect, which may lead to positive orientation to SOI. The dyad and network actors should try better to design practices for sustainability, such as energy saving properties, recyclability, eco-friendly materials, product shelf-life, reducing raw material, which might lead to positive orientation to SOI. The factor of **packaging material** for the majority of the cases at actor levels had positive orientation, except in case 6, where it had little orientation to SOI. At the dyad level, cases 6 and 5 had little orientation while the rest of the cases had positive orientation. The majority of the cases at the network level had a little orientation except case 1, which had positive orientation. This confirmed that the majority of the retailers search for efficient packaging systems to reduce costs or use biodegradable packaging and consider this an important

aspect, leading to positive orientation to SOI. However, the dyad and network actors should be more concerned with packaging materials, which might lead to positive orientation to SOI.

It was found that **eco-labelling** at the actor level for cases 4, 1, 6 and 5 had positive orientation while cases 2 and 3 had little orientation to SOI. At the dyad level this differed as cases 2, 3, 6 and 5 had little orientation and only cases 4 and 1 had positive orientation. At the network level, the majority of the cases had a little orientation except case 1, which had positive orientation. This confirmed that the majority of the retailers consider eco-labelling as an important aspect, which may lead to positive orientation to SOI. It was also revealed that the dyad and network actors should be more concerned about labelling products into certain environmental categories such as organic and recyclable, which might lead to positive orientation to SOI. It was found that **life-cycle analysis** at the actor level for all cases had positive orientation to SOI. At the dyad level, cases 2, 3 and 5 had little while cases 4, 1 and 6 had positive orientation. At the network level, cases 4, 1, 2 and 3 had positive orientation whereas cases 6 and 5 had little orientation. This confirmed that all the retailers consider life-cycle analysis important in order to have positive orientation to SOI. It was revealed that the dyad and network actors should be more concerned about the inventory process to manage product life cycle, to optimize the inventory with consideration for the inventory type related to customer demand, which might lead to positive orientation to SOI. It was found that **organic products** at both the actor and dyad levels across all cases similarly had positive orientation to SOI. At the network level only cases 3 and 6 had little orientation while the rest of the cases had positive orientation. This confirmed that all the retailers have organic products, which may have positive orientation to SOI. However, when the retailer worked with its dyad and network actors it was revealed that they should consider the importance of organic products as this may enhance SOI.

b) Process Innovation: For this theme, at the actor level, all the cases were similarly categorized as high or moderate. At the dyad level the majority were similarly categorized as high or moderate except one case and at the network level it differed as some were categorized as having low orientation to SOI. The research found that at the actor level for **managing cost**, the majority of the cases similarly had positive orientation except case 3, which had less orientation to SOI. At the dyad level, cases 3 and 6 differed from the rest as they had less orientation while cases 4, 1, 2 and 5 had positive orientation. However, at the network level, only cases 1 and 2 had positive orientation and cases 4, 3, 6 and 5 had less orientation to SOI. This confirmed that the majority of the retailers are concerned with cost saving in their production processes to attain economic benefits. It was revealed that the majority of the dyad and network actors should consider methods of cost saving in order to attain economic benefits, which in turn may have positive orientation to SOI. At the actor level for

adopting environmentally friendly technologies, all of the cases similarly had positive orientation to SOI. At the dyad level, the majority of the cases similarly had positive orientation except cases 6 and 5, which had less orientation to SOI. At the network level, cases 2, 6 and 5 had less orientation while cases 4, 1 and 3 had positive orientation to SOI. This confirmed that all the retailers and the majority of the dyadic members are concerned with adopting environmentally friendly technologies. However, some of the network actors should reconsider adopting these technologies, leading to SOI.

It was found that at the actor level, **raising industry standards in line with environmental performance**, the majority similarly had positive orientation except case 3, which had less orientation to SOI. At the dyad level, the majority also had less orientation except case 1 and 6, which had positive orientation to SOI. At the network level, only case 1 had positive orientation while the other cases had less orientation to SOI. This confirmed that the majority of the retailers find it important to raise their industry standards in line with environmental performance. However, it was revealed that the dyad and network actors should reconsider trying to enhance their requirements relating to environmental performance, which may have positive orientation to SOI. It was also found that at the actor level for **responding to external pressures and regulatory changes**, all of the cases had positive orientation to SOI. At the dyad level, only case 3 had less orientation while the rest had positive orientation. At the network level, the majority had positive orientation except cases 3 and 6, which had less orientation to SOI. This confirmed that all the retailers and the majority of the dyad and network members consider it important to know how and when to respond to external demands such as customer demand and government regulations, which may have positive orientation to SOI.

For **handling waste**, at the actor level, all had positive orientation to SOI. At the dyad level, the majority had positive orientation except cases 4 and 3, which had less orientation. At the network level, cases 4, 2 and 3 had less orientation while cases 1, 6 and 5 had positive orientation to SOI. This confirmed that all of the retailers find it important to try to handle waste in various ways. However, it was revealed that the dyad and network actors should try more methods of solutions in relation to recycling, water and air pollution, which may have positive orientation to SOI. Finally, it was found that at both the actor and dyad levels for **logistics**, all similarly had positive orientation to SOI. At the network level, the majority had less orientation, except case 1, which had positive orientation. This confirmed that all of the retailers and dyadic members find logistics important. However, the network actors should consider working better on their logistics, such as transportation networks and distribution channels, which may have positive orientation to SOI.

c) Organizational Innovation: For the third theme, at the actor level, all the cases were categorized as high or moderate. At the dyad level the majority were similarly categorized as high or moderate except one case and at the network level which differed as some were categorized as having low orientation to SOI. The research found that at the actor level for **certificates**, all of the cases similarly had positive orientation to SOI. However, at the dyad level, the majority of the cases had positive orientation, except case 5, which had less orientation. On the other hand, at the network level, all of the cases had positive orientation. This confirmed that all of the retailers and network members and the majority of the dyad members find being certified with certificates such as ISO 22000 and HACCP important, which may have positive orientation to SOI.

It was found that at both the actor and dyad levels for **stakeholders' management**, all of the cases had positive orientation to SOI. At the network level, only case 3 had less orientation to SOI, while the other cases similarly had positive orientation. This confirmed that all of the retailers and dyadic actors and the majority of the network actors find stakeholders' management such as contracts and communications (such as conferences, meetings, exhibitions) between each other important, which may have positive orientation to SOI. It was also found that at the actor level for **engaging employees in developing a sustainable business**, all of the cases had positive orientation to SOI. At the dyad level, cases 6 and 5 had little orientation while the other cases had positive orientation. At the network level, cases 3, 6 and 5 had little orientation while cases 4, 1 and 2 had positive orientation to SOI. This confirmed that all of the retailers find it important to engage their employees in developing a sustainable business. However, it was revealed that more dyad and network actors should engage their employees in a sustainable business, which may have positive SOI.

It was found that at all three levels for **health and safety issues** had positive orientation to SOI. This confirmed that all of the retailers, dyad and network actors find health and safety issues important, such as the different health and safety measures taken as well as any training provided, which may have positive orientation to SOI. It was also found that at both the actor and dyad levels for **a sustainability vision**, the majority similarly had positive orientation, except case 6 had little orientation to SOI. At the network level, most of the cases had little orientation except case 1, which had positive orientation. This confirmed that the majority of the retailers and dyadic actors find the sustainability vision important. However, it was revealed that the network members should be concerned with the sustainability vision, such as designing and implementing visions based on sustainability within their businesses, which may have positive orientation to SOI.

At both the actor and dyad level for **code of conduct**, the majority of the cases had positive orientation except cases 2 and 5, which had little orientation to SOI. On the other hand, at the network level, most of the cases had little orientation except cases 1 and 3, which had positive orientation. This confirmed that the majority of the retailers and dyadic members find the code of conduct important. However, it was revealed that more network members should be more concerned with the code of conduct such as ethics and transparency, which may have positive orientation to SOI. The research found at the actor level, for **environmental policy**, that only cases 4 and 3 had positive orientation while the rest of the cases had little orientation to SOI. On the other hand, at the dyad level, the majority of the cases had little orientation except case 4, which had positive orientation. At the network level, all of the cases had little orientation to SOI. This confirmed that a few of the retailers find having and implementing environmental policies important. However, it was revealed that the dyad and network actors should be more concerned with environmental policies and how and why they are implemented, which may have positive orientation to SOI.

In summary, the innovation perspective makes positive contribution to SOI in SC of Retailers. It was found that the three themes of innovation, product, process and organizational innovation, are significant in a firm's survival and that focal actors can reach innovation in order to benefit from know-how, technology and knowledge that may be distributed across other actors, which is in line with previous research (Miemczyk et al., 2012; Narasimhan and Narayanan, 2013). Conversely, it was noticed in previous research that there was a need for an in-depth study on the orientation of product, process and organizational innovation on SOI along the supply chain actors (e.g. Pesonen, 2001; Ballot et al., 2015). Therefore, this research embarked to understand SOI in SCM from the innovation perspective across the actor, dyad and network levels, which will be beneficial to understand how actors can compete in markets based on different innovational methods (e.g. Miemczyk et al., 2012; Narasimhan and Narayanan, 2013). The research found that when the three themes are integrated across the three levels, hence, the whole supply chain was stronger and may lead to positive orientation to SOI. It also provided rich understandings of how and why being innovative either as a company or as an employee across all three levels is important. It was revealed that being innovative in the supply chain is a collaborative effort, which should involve all chain actors with the intention of building resilience and ensuring survival in the market; this is in line with prior research (e.g. Cousins et al., 2011; Rueda et al., 2017).

Table 6.5: A Case-Ordered Predictor-Outcome Matrix: Innovation contribution to SOI in Food SC of Retailers. ((Author's own work) Adapted from Miles and Huberman, 1994; Miles et al., 2014; Miles et al., 2020, p. 267).

Case-Ordered Predictor-Outcome Matrix: Innovation contribution to SOI in SC of Retailers																				
Perspectives	Themes	Contextual Factors	Case 4 (R4)			Case 1 (R1)			Case 2 (R2)			Case 3 (R3)			Case 6 (R6)			Case 5 (R5)		
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network
Innovation	Product Innovation	-Staying competitive	H	H	M	H	H	M	M	M	L	H	M	L	H	H	M	H	M	L
		-Seizing market opportunities	H	H	M	H	H	H	M	M	L	H	M	L	H	M	L	H	M	L
		-Design for sustainability	H	H	L	M	M	M	M	M	L	M	M	L	M	L	L	M	L	L
		-Packaging material	M	M	L	H	H	H	M	M	L	M	M	L	L	L	L	M	L	L
		-Eco-labelling	M	M	L	M	M	M	L	L	L	L	L	L	H	L	L	M	L	L
		-Life-cycle analysis	M	M	M	M	M	M	M	L	M	M	L	M	M	M	L	M	L	L
		-Organic products	H	H	M	H	H	H	H	H	M	M	M	L	H	M	L	H	M	M
	Aggregate		H	H	M	H	H	M	M	M	L	M	M	L	H	M	L	M	L	L
	Process Innovation	- Managing costs	M	M	L	M	M	M	M	M	M	L	L	L	M	L	L	M	M	L
		- Adopting envir friendly technologies	H	M	M	H	H	H	M	M	L	H	M	M	M	L	L	M	L	L
		- To raise standards/envir performance	M	L	L	M	M	M	M	L	L	L	L	L	M	M	L	M	L	L
		- Response to ext. pressures/reg. changes	H	M	M	H	H	M	H	H	M	M	L	L	H	M	L	M	M	M
		- Handling waste	H	L	L	H	H	H	M	M	L	M	L	L	H	M	M	H	M	M
		- Logistics	H	H	L	H	H	M	M	M	L	M	M	L	M	M	L	H	M	L
	Aggregate		H	M	L	H	H	M	M	M	L	M	L	L	M	M	L	M	M	L
	Organizational Innovation	- Certificates	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	L	M
		- Stakeholders management	H	H	M	H	M	M	H	H	M	M	M	L	H	M	M	H	M	M
		- Engaging employees/ sust. business	H	H	M	H	H	M	H	M	M	H	M	L	M	L	L	M	L	L
		- Health and safety issues	H	H	M	H	H	H	H	M	M	M	M	M	H	H	M	H	M	M
		- Sustainability vision	M	M	L	M	M	M	M	M	L	M	M	L	L	L	L	M	M	L
		- Code of conduct	M	M	L	M	M	M	L	L	L	H	M	M	H	M	L	L	L	L
		- Environmental policy	M	M	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L
	Aggregate		H	H	M	H	M	M	H	M	M	M	M	L	H	M	L	M	L	L
	Overall Contribution from Innovation Perspective to SOI		H	H	M	H	H	M	M	M	L	M	M	L	H	M	L	M	L	L

H: Contextual factor has high orientation to SOI

M: Contextual factor has moderate orientation to SOI

L: Contextual factor has low orientation to SOI

It was revealed that it is important for focal actors to stay competitive (e.g. Klewitz and Hansen, 2014), seize market opportunities (e.g. Klewitz and Hansen, 2014) and to design for sustainability (e.g. Martín-Tapia et al., 2010), such as energy saving properties, recyclability, eco-friendly materials, shelf-life and reducing the use of raw material. It was also indicated that their efficient packaging systems is important to reduce cost or using biodegradable packaging and eco-labelling. A life-cycle analysis was found important to optimize inventory related to customer demand.

This research showed that focal actors manage costs in terms of cost saving in their production processes to attain economic benefits and adopting environmentally-friendly technologies (e.g. Klewitz and Hansen, 2014). It was also shown that they raise industry standards in line with environmental performance (e.g. Michelsen and Fet, 2010) and responding to external demands such as customer demand and government regulations. Handling waste (e.g. Klewitz and Hansen, 2014) such as recycling, sewage, water and air pollution and the logistics in terms of efficient transportation networks and distribution channels are essential for focal actors and chain actors (e.g. Fernández-Viñé et al., 2010). The findings showed that being ISO 22000 and HACCP certified is important. It was also indicated that focal actors should manage their stakeholders in regards to contracts and communications between each other and also engage employees in a sustainable business (e.g. Jenkins, 2009). They also need to be up to date with health and safety issues and having sustainability vision (e.g. Crals and Vereeck, 2005) in terms of implementing visions based on sustainability. In addition, they should consider the code of conduct in regard to ethics and transparency and implementing environmental policies (e.g. Bos-Brouwers, 2010).

Hence, the contextual factors of each theme are important when interacting together in order to enhance SOI. It was also clear that product, process and organizational innovation should interact together in order to enhance SOI in the SC (see Figure 6.3). The focal actors need to establish, develop and implement innovation and simultaneously build up the three innovation themes at all three levels, in order to successfully implement SOI. This was pointed out in cases 4 and 1 with positive orientation to SOI at all three levels, as these cases simultaneously built up their blended innovation, while the other cases had lower orientation at the dyad and network level. It was suggested that an actor as a corporate entrepreneur should be innovative. The corporate entrepreneur, their intrapreneurs and entrepreneurial HR help in establishing and implementing innovation and should consider the activities and resources they have and efficiently use them. They should consider their actor position in an innovative way in order to survive in a competitive market. Hence, there is a link between the three perspectives: network, entrepreneurship and innovation.

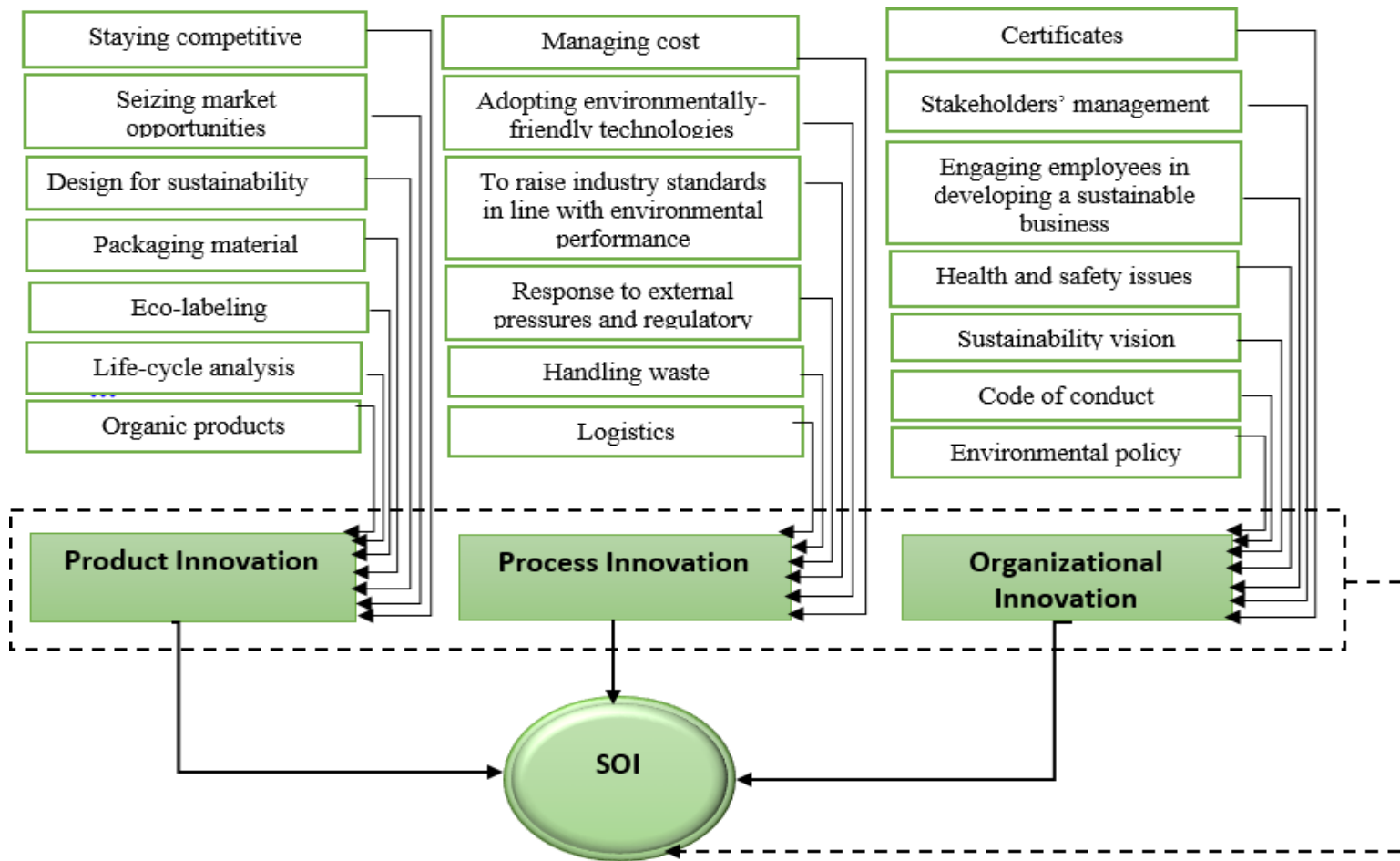


Figure 6.3: Network Model for Innovation Perspective ((Author's own work) Adapted from Saldaña, 2016).

6.4.5 Sustainability Perspective Contributing to SOI

Table 6.6 outlines how the perspective Sustainability makes a positive contribution to SOI in SC of Retailers, as the overall of all cases show an orientation to SOI. As shown in table 6.6, cases 4, 1 and 2 are ordered as high, cases 3, 6 and 5 are ordered as having a moderate orientation to SOI. The sustainability perspective has three themes: *environmental, social and economic*:

a) Environmental: For the first theme, at the actor and dyad level, all the cases were similarly categorized as high or moderate. At the network level it differed as some were categorized as having a low orientation to SOI. The research found that at both the actor and dyad levels for managing water, cases 4, 1, 2 and 3 had positive orientation while cases 6 and 5 had little orientation to SOI. On the other hand, at the network level, all cases had less orientation. This confirmed that several of the retailers and dyadic actors consider **managing water** important. However, it was revealed that network actors should be more concerned about managing water and understand how and why they should manage water, which may have positive orientation to SOI. It was found that at the actor level for **energy control** all the cases had positive orientation to SOI. At the dyad level, the majority had positive orientation except case 3, which had less orientation. At the network level, cases 2 and 3 had less orientation and the other cases had positive orientation. This confirmed that all of the retailers consider energy control important. However, it was revealed that more dyad and network members should be more concerned with energy control and understand how and why they could control their energy usage, which may have positive orientation to SOI.

At both the actor and dyad level for **recycling**, all cases had positive orientation to SOI. On the other hand, at the network level, cases 1, 3 and 6 differed as they had less orientation and cases 4, 2 and 5 had positive orientation. This confirmed that all of the retailers and dyad actors consider recycling important. However, it was revealed that more network actors should be more concerned about recycling and understand how and why they should recycle, which may have positive orientation to SOI. It was found that at both the actor and dyad level for **environmental awareness**, the majority of the cases had positive orientation except case 6, which had less orientation to SOI. At the network level, cases 2, 3 and 6 differed as they had less orientation and cases 4, 1 and 5 had positive orientation. This confirmed that the majority of the retailers and dyadic actors consider environmental awareness important. However, it was revealed that more network members should be more concerned with environmental awareness and its importance in food retail, which may have positive orientation to SOI.

b) Social: For social sustainability at the actor level, all the cases were similarly categorized as high or moderate. At the dyad level the majority were categorized as high or moderate except one case and at the network level it differed as all except one case were categorized as having a low orientation to SOI. It was found that at the actor and dyad levels for **training and workshops**, all of the cases had positive orientation to SOI. However, at the network level, only case 2 had less orientation compared to other cases, which had positive orientation. This confirmed that all of the retailers and dyadic actors and the majority of the network actors consider training sessions and workshops to improve performance, skills and knowledge, which may have positive orientation to SOI.

The findings confirmed for **social events** at the actor level that cases 4, 1, 2 and 6 had positive orientation, while cases 3 and 5 had less orientation to SOI. At the dyad level, cases 2, 3, 6 and 5 had less orientation while cases 4 and 1 had positive orientation. At the network level, all the cases had less orientation to SOI. This confirmed that the majority of the retailers arrange social events for their employees and they consider them to be important. It was revealed that more dyad and network actors should be more concerned with arranging social events, which may have positive orientation to SOI. It was found that **diversity** at the actor level across all cases similarly had positive orientation to SOI. At the dyad level, case 3 had less orientation while the other cases had positive orientation. At the network level, only case 1 had positive orientation and the other cases had less orientation. This confirmed that the majority of the retailers consider diversity important and believe they have diverse products and diverse targeted customers. However, it was revealed that more dyad and network actors should reconsider diversity, which may have positive orientation to SOI.

It was found that at the actor and dyad levels for **community impact**, all had positive orientation to SOI. At the network level, only case 4 had positive orientation while the other cases had less orientation. All the retailers consider themselves as having an orientation to the community. The retailers also consider their dyadic actors to have an orientation to the community, such as career opportunities and product image. However, it was revealed that the network actors should consider their community impact, leading to SOI. It was found that **safe and fair labor conditions** at the actor and dyad levels across all cases had positive orientation to SOI. At the network level it differed as all had little orientation. This confirmed that all the retailers consider themselves to have safe and fair labor conditions. The retailers also consider their dyadic actors to have safe and fair labor conditions. It was revealed that the network actors should consider better labor conditions, indicating an orientation to SOI. At the actor level, **employee benefits** had positive orientation to SOI. At the dyad level, the majority of cases had little orientation except case 5, which had positive orientation.

At the network level, all had little orientation. This confirmed that all the retailers have employee benefits such as private medical insurance, social security, food coupons and monthly discounts. However, it was revealed that the dyad and network actors should provide better employee benefits as this may motivate their employees to work better and this might have positive orientation to SOI.

The research found that at the actor level for **truthful product labelling and descriptions**, cases 4, 1 and 5 similarly had positive orientation to SOI, while cases 2, 3 and 6 had little orientation. At the dyad level, cases 4, 2, 3 and 6 had little orientation while only cases 1 and 5 had positive orientation. At the network level, the majority had little orientation except case 1, which had positive orientation. This confirmed that some of the retailers believe it is important to have truthful product labelling and descriptions. However, it was revealed that the dyad and network actors should reconsider the importance of truthful product labelling and descriptions, which may have positive orientation to SOI. It was found that at the actor level for **customer health and safety** all the cases similarly had positive orientation to SOI. At the dyad level, the majority of the cases had positive orientation except case 3, which had little orientation. At the network level, cases 2, 3, 6 and 5 had little orientation, while only cases 4 and 1 had positive orientation. This confirmed that all of the retailers believe it is important to be concerned with customer health and safety. The retailers also consider their dyadic actors to care for customer health and safety. However, it was revealed that network actors should consider better care for their customer health and safety, leading to SOI.

*c) **Economic***: For the third theme, economic sustainability at the actor and dyad levels, all the cases were similarly categorized as high or moderate. However, at the network level it differed as some were categorized as having a low orientation to SOI. The research found that **profitability and tax** across all three levels had positive orientation to SOI. This confirmed that all actors at the retailer, dyad and network levels are concerned with different profitability sources and tax issues. However, it was revealed that all actors enhance their profitability and also keep up to date with tax as this may have positive orientation to SOI. It was found that the **economic interests of external stakeholders** across all three levels had positive orientation to SOI. This confirmed that all chain actors consider the economic interests of external stakeholders as important and this may have positive orientation to SOI. It was found that at the actor and dyad levels for **competitive procurement**, across cases 4, 1, 6 and 5 had positive orientation while cases 2 and 3 had little orientation to SOI. At the network level, the majority had little orientation while only case 5 had positive orientation. All of the retailers and dyadic actors believe it is important to have competitive procurement and they understand their advantages. However, it was revealed that network actors should reconsider the importance of their procurement to be better competitors, leading to SOI.

It was found that **customer satisfaction** at the actor and dyad levels across all cases had positive orientation to SOI. At the network level, cases 2, 6 and 5 had little orientation while cases 4, 1 and 3 had positive orientation. This confirmed that all of the retailers believe customer satisfaction is important, such as how the retailer meets customer expectations and how they handle customer complaints. The retailers also consider their dyadic actors to have good customer satisfaction. It was revealed that network actors should reconsider the importance of their customer satisfaction, which may have positive orientation to SOI. It was found that **efficient production and packaging** at the actor and dyad levels across all cases had positive orientation to SOI, while at the network level all had little orientation. This confirmed that all of the retailers and dyadic actors believe efficient production and packaging is important. However, it was suggested that the network actors should reconsider efficient production and packaging, leading to an orientation to SOI.

To conclude, the sustainability perspective makes positive contribution to SOI in SC of Retailers. It was found that the three themes of the network (environmental, social and economic) are important in order to enhance the overall sustainability performance, which is in line with previous research (e.g. Esfahbodi et al., 2016). Conversely, there is a lack in previous research on sustainability performance for economic, social and environmental sustainability in the supply chain at all three levels, the actor, dyad and network (e.g. Flint and Golcic, 2009; Miemczyk et al., 2012; Narasimhan and Narayanan, 2013). Therefore, this research embarked on this to understand SOI in SCM from the sustainability perspective across the actor, dyad and network levels, which will be beneficial in analyzing supply chains and their sustainability performance. Some key findings from are that when the three themes interacted together across the three levels the supply chain was stronger and may lead to positive orientation to SOI. It also provided rich understandings of how the focal actor (retailers) interacts with other actors along the chain network, leading to environmental issues of reductions in resources and packaging waste and social issues of the welfare of the actor's workforce as well as the economic issues considered (e.g. Ahi and Searcy, 2013; Carter and Easton, 2011; Roscoe et al., 2015). The findings suggested that the focal actor (the retailer) as well as dyad and network actors should consider environmental, social and economic sustainability in order to enhance sustainability performance across the SC, which is in line with previous research (e.g. Miemczyk et al., 2012; Roscoe et al., 2015; Esfahbodi et al., 2016).

Table 6.6: A Case-Ordered Predictor-Outcome Matrix: Sustainability contribution to SOI in Food SC of Retailers. ((Author's own work) Adapted from Miles and Huberman, 1994; Miles et al., 2014; Miles et al., 2020, p. 267).

Case-Ordered Predictor-Outcome Matrix: Sustainability Contribution to SOI in SC of Retailers																				
Perspectives	Themes	Contextual Factors	Case 4 (R4)			Case 1 (R1)			Case 2 (R2)			Case 3 (R3)			Case 6 (R6)			Case 5 (R5)		
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network
Sustainability	Environmental	- Managing water	M	M	L	M	M	L	H	H	L	M	M	L	L	L	L	L	L	L
		- Energy control	H	H	M	H	H	M	M	M	L	M	L	L	H	H	M	M	M	M
		- Recycling	H	H	M	H	H	L	H	H	M	H	M	L	H	M	L	H	M	M
		- Environmental awareness	H	H	M	H	H	M	H	H	L	M	M	L	L	L	L	M	M	M
	Aggregate		H	H	M	H	H	M	H	H	L	M	M	L	M	M	L	M	M	M
	Social	- Training and workshops	H	H	H	H	H	H	M	M	L	H	H	H	H	M	M	H	M	M
		- Social events	H	M	L	H	M	L	H	L	L	L	L	L	M	L	L	L	L	L
		- Diversity	H	M	L	H	M	M	M	M	L	M	L	L	H	M	L	M	M	L
		- Community impact	H	M	M	M	M	L	M	M	L	M	M	L	M	M	L	H	M	L
		- Safe and fair labor conditions	M	M	L	H	M	L	M	M	L	M	M	L	M	M	L	M	M	L
- Employee benefits		M	L	L	H	L	L	H	L	L	M	L	L	M	L	L	H	M	L	
- Truthful product labelling/descriptions		M	L	L	H	M	M	L	L	L	L	L	L	L	L	L	M	M	L	
- Customer health and safety	H	M	M	M	M	M	M	M	L	M	L	L	H	M	L	M	M	L		
Aggregate		H	M	L	H	M	M	M	M	L	M	L	L	M	M	L	M	M	L	
Economic	- Profitability and Tax	H	H	H	H	H	H	H	H	M	H	H	M	H	M	M	H	M	M	
	- Economic interests/ext.stakeholder	H	H	M	H	H	M	H	H	H	M	M	M	H	M	M	M	M	M	
	- Competitive procurement	M	M	L	M	M	L	L	L	L	L	L	L	M	M	L	H	M	M	
	- Customer satisfaction	H	H	M	H	H	M	H	M	L	M	M	M	H	H	L	H	H	L	
	- Efficient production and packaging	H	M	L	M	M	L	M	H	L	M	M	L	M	M	L	M	M	L	
Aggregate		H	H	M	H	H	M	H	H	L	M	M	M	H	M	L	H	M	M	
Overall Contribution from Sustainability Perspective to SOI		H	H	M	H	H	M	H	H	L	M	M	M	M	M	L	M	M	M	

H: Contextual factor has high orientation to SOI

M: Contextual factor has moderate orientation to SOI

L: Contextual factor has low orientation to SOI

In this research, it was indicated that managing water (e.g. Tasca et al., 2017), controlling energy (e.g. Christopher, 2016), recycling and being aware of the environmental issues (e.g. Petljak et al., 2018) are important to be environmentally sustainable. This research found that it is important to provide different training and workshops (e.g. Jenkins, 2009), as well as conducting social events (e.g. Choi and Ng, 2011) such as field trips for the employees and having diversity (e.g. Christopher, 2016) such as diversity in products and diverse customers. Other important concepts are community impact such as career opportunities and product image, customer health and safety at the retailer level and safe and fair labor conditions for employees (e.g. Christopher, 2016). It is also important to provide employee benefits (e.g. Choi and Ng, 2011) such as private medical insurance, social security, food coupons and to be truthful in regards to product labelling and descriptions (e.g. Bos-Brouwers, 2010). The findings showed that profitability and tax (e.g. Christopher, 2016) is an important issue faced by the retailer or affected by other chain actors, as are the economic interests of the retailers' different external stakeholders (e.g. Sheth et al., 2011) and having competitive procurement (e.g. Christopher, 2016) along with customer satisfaction (e.g. Choi and Ng, 2011), including customer expectations, complaints and efficient packaging (e.g. Sheth et al., 2011).

Hence, the contextual factors of each sustainability theme are required to interact together in order to enhance SOI. It was clear from this research that three themes should also interact together in order to enhance SOI in the SC (Figure 6.4). The focal actors and SC actors need to establish, develop and implement environmental, social and economic sustainability. This research concluded that the focal actor should simultaneously develop sustainability themes; this should be done at all three levels, to successfully implement SOI. This was presented in cases 4, 1, 3 and 5 with positive orientation to SOI at all three levels, as these cases simultaneously developed and implemented the three themes, while the other cases had lower orientation at the dyad and network levels. It was revealed that in order for an actor that is considered a corporate entrepreneur to successfully establish and implement the three themes they should be innovative. Furthermore, their intrapreneurs and entrepreneurial HR should support them in establishing and implementing product, process and organizational innovation, which leads to environmental, social and economic sustainability. Their entrepreneurial employees should also consider the activities and resources they have and efficiently use them to be sustainable. A corporate entrepreneur should consider their actor position in an innovative way in order to enhance the chain sustainability. Hence, there is a link between the network, entrepreneurship, innovation and sustainability perspectives.

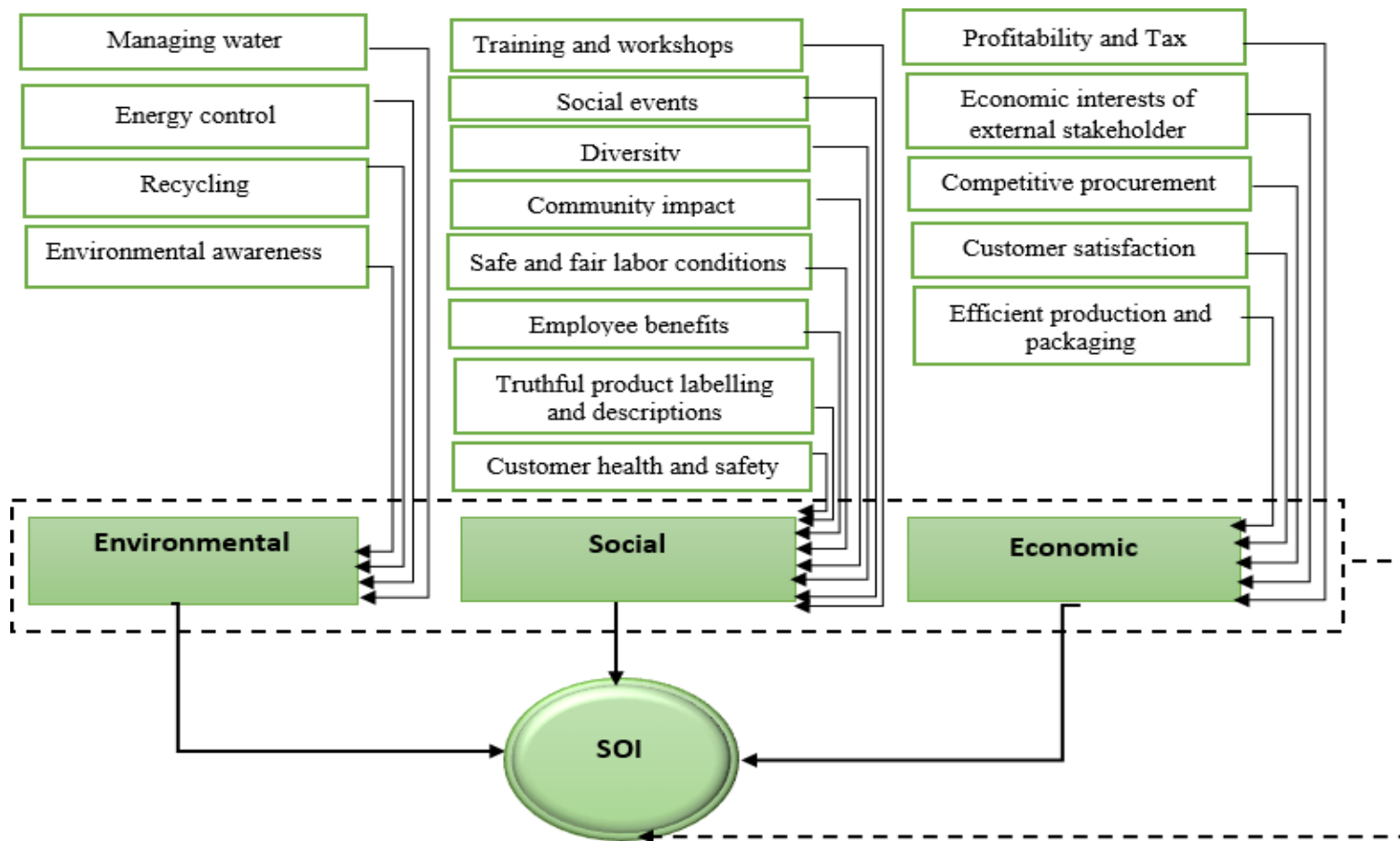


Figure 6.4: Network Model for Sustainability Perspective ((Author's own work) Adapted from Saldaña, 2016).

6.5 Theoretical Underpinning of SOI in Food SCM and Research Propositions

This section discusses the key findings of this research, providing insights and theoretical associations for SOI in SCM supported by previous research. This will lead to providing a holistic framework with the focus of the present research phenomenon corroborated by the identified perspectives. As well as providing typologies.

The interaction between the perspectives on SOI in SCM reveal the growing importance of network, entrepreneurship, innovation and sustainability in sustainable SCM rather than merely overlapping them. In previous research, there was an overlap in the theoretical perspectives, where some studies discussed some of them jointly in the context of SC and the association with SOI as it was not presented from a holistic approach at all three levels (actor, dyad and network), in addition, the interrelations amongst these perspectives were subsidiary in the few studies that were found (e.g. Yakovleva and Flynn, 2004; Martindale, 2010; Rueda et al., 2017; Behnam et al., 2018). Thus, the research aim is to critically understand the role of entrepreneurship and HR in supporting SOI in SC of food retailers in Jordan. More specifically, the association between innovation orientation and sustainability orientation is explored and explained in order to develop, examine and provide a novel conceptual framework.

Hence, the present findings confirmed that there is an association between the theoretical perspectives (network, entrepreneurship, innovation and sustainability) and SOI in food SCM. It was found that the interaction between the four theoretical perspectives is important in order to holistically understand SOI in the food SC. The findings have linked a set of themes for each perspective (see Figures 6.1- 6.4), providing an underpinning understanding for each perspective's orientation individually and together for SOI: establishing, developing and implementing in food SCM. Hence the following subsections discuss, firstly, the theoretical underpinning of SOI in food SCM (see Figure 6.5) and this leads to the formulation of the propositions, which assist in answering the research questions, hence leading to the final conceptual framework (see Figure 6.6) and key theoretical contributions.

6.5.1 Theoretical Underpinning: SOI in food SCM

The majority of the cases agreed that SOI is creating products, processes and/or organizational practices innovatively to generate environmental, social and economic value. This finding is an agreement with literature (e.g. Adams et al., 2016). Some cases considered SOI as the production and utilization of a novel method, service, product or process to enhance environmental, social and economic sustainability performance through its life cycle (e.g. Luqmani et al., 2017). Most of the cases agreed that to successfully enhance SOI they should not just focus only on eco-efficiency but also on social sustainability (e.g. Luqmani et al., 2017). It was concluded that it is a set of philosophies to understand the link between sustainability-oriented and innovation-oriented to generate values where orientation activities are oriented to sustainability (e.g. Adams et al., 2016).

Several cases showed that when focal actors aim to integrate SOI in SCM they need to integrate sustainability strategies and sustainable innovations across the SC at all three levels (actor, dyad, network) and sometimes this can be a challenge (e.g. Neutzling et al., 2018). It was found in some cases that they understand, in order to expand sustainability orientation across the SC, all SC actors should be innovative in their management methods, such as developing sustainable products or services across the SC, therefore influencing various SC structures and focusing on sustainable SC performance (e.g. Beske and Seuring, 2014; Akhavan and Beckmann, 2016). In many cases, they agreed that in order to integrate SOI across the SC they need to develop innovative sustainable SCM strategies, depending on the combined relationships between all the actors, such as collaboration and partnerships, therefore leading to enhancing sustainable SC performance (e.g. Neutzling et al., 2018).

This research provides key insights into the theoretical underpinning of SOI based on three key stages. *Firstly*, most of the cases understand the importance of **establishing SOI** and practicing it, where focal actors as corporate entrepreneurs (CE) need to have entrepreneurial characteristics (Kuratko et al., 2014; Nason et al., 2015). The focal actor as CE needs to begin with itself in terms of establishing SOI in their enterprise by building innovative, entrepreneurial and qualified employees to attribute to the internal culture (e.g. Adams et al., 2016). The focal actor also needs to consider their actor position in addition to establishing and organizing their activities and considering the use of their resources for their retailing organization in terms of their operations and employees. The focal actor coordinates and collaborates with other chain actors to benefit from their activities and resources. Furthermore, the focal actor's intrapreneurs and entrepreneurial HR should help in their actor positioning, perform activities and efficiently use their resources across the food supply chain. It was found in the majority of cases that the focal actor should simultaneously

consider the actor position, activities and resources at all three levels, in order to lead to better connecting of economic growth and bring contributions in terms of new knowledge and strategies (Nason et al., 2015). Hence, the first stage is to successfully establish SOI for the focal actor then across the SC; at dyad and network levels.

Secondly, most of the case demonstrated the importance of **developing SOI** and to effectively continue to practice it, as this is the core stage. It is shown in all the cases that at first focal actors have the goal of optimization for both processes and products with incremental innovation towards enhancing sustainability within their organization (Adams et al., 2016; Luqmani et al., 2017; Neutzling et al., 2018). Second, shown by the majority of the cases, the focal actor focuses on organizational transformation where sustainability is their focus and becomes more deeply rooted in their organization's strategies and culture in order to create value. During these activities, collaboration between their immediate stakeholders (dyad level) helps produce SOI. Finally, shown by cases 4 and 1, the focal actor's attentions to systems building as the mindset of the organization shifts towards SOI more in terms of their business purpose. The main point is that a network of actors rather than just the focal actor creates sustainability value collaboratively. Focal actors should develop innovations to solve complex problems and enhance sustainability, hence shifting to new business paradigms, which influences their actors as stakeholders across all three levels (actor, dyad and network) (Adams et al., 2016; Neutzling et al., 2018).

Thirdly, most of the cases understand the importance of **implementing SOI** and efficiently practicing it, across the actors of the SC in order to enhance innovation activities and sustainability chain performance. They also understand that due to the competition in the Jordanian market, they should have entrepreneurial characteristics and be innovative with the intention of achieving high-level sustainability performance. This is in line with previous research (e.g. Schaltegger, 2002; Klewitz and Hansen, 2014). The majority of the cases agreed that innovation-orientation consists of creating an innovative product or service before the competitors, and it may involve adopting new techniques, skills, resources, activities and organizational management in order to provide creativity and change for a member in the SC. This is in line with previous research (e.g. Klewitz and Hansen, 2014). It was found that all the cases care about customer loyalty and satisfaction by developing long-term customer relationships and satisfying customer needs as a result of their creativity to establish new ideas and compete in the market with their innovative product and hence are innovation-oriented. This is in line with previous research (e.g. Lii and Kuo, 2016). It was found in some of the cases that other SC actors cultivate innovation if they work with innovation-oriented

firms such as the retailer and if they are in the processes of SOI. This is in line with previous research (e.g. Klewitz and Hansen, 2014; Goodman et al. 2017).

Drawing on the above, there is an interaction between the theoretical perspectives, which is important in order to holistically understand SOI in the SC. The findings have linked a set of themes for each perspective, providing an underpinning understanding for each perspective's orientation individually and together rather than overlapping on SOI, as illustrated in **Figure 6.5**. This is an aggregated network model to illustrate how all four perspectives (see **Figures 6.1- 6.4**) orientation to SOI for establishing, developing and implementing stages in food SCM. Hence the proposed framework is explained across cases and this model is to illustrate the storyline of the phenomenon by providing validating evidence and replications throughout all the cases.

It is also important to highlight the perspectives of scholarly insights, which called for better directions of SOI conceptualization in a holistic way on all three levels (actor, dyad and network levels) as this will provide a holistic insight (e.g. Luqmani et al., 2017; Neutzling et al., 2018). Hence, drawing on this scholarly background, the present research conceptualizes SOI in SCM in the context of the food SC of retailers as:

‘The concept of SOI is the intentional changes to the focal actors’ (as corporate entrepreneurs) philosophy to create products, processes and/or organizational practices innovatively to generate environmental, social and economic value by establishing, developing and implementing successful linkages between sustainability-orientation and innovation-orientation at the actor, dyad and network levels.’ (Author’s own work).

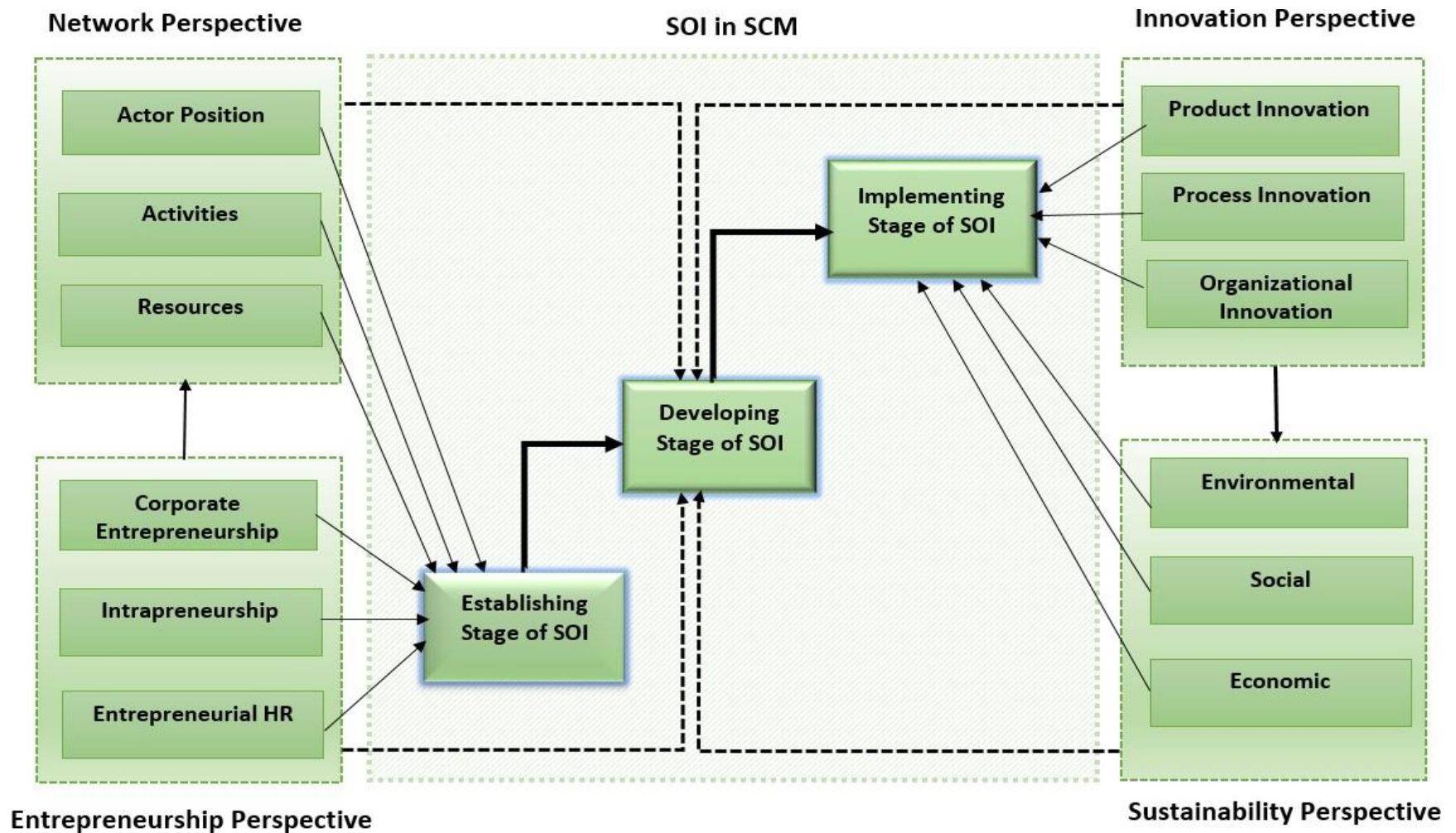


Figure 6.5: Aggregated Network Model for SOI In Food SCM ((Author's own work) Adapted from Saldaña, 2016).

Drawn from the above, this research provides a typology of three stages of SOI in food SCM suited to build SOI at the actor level, dyad level and network level across the SC, in the Jordanian food-retailing sector. From the present research, the main findings are used to demonstrate suggestions and recommendations of three key stages of SOI in SCM, Table 6.7.

Table 6.7: Typology of the Three Stages of SOI in SCM (Author's own work)

Stages of SOI	Description	Focus	Potential Outcome
Beginner Stage of SOI in SCM	<i>Establishing Stage of SOI</i> (See section 6.5.1)	Focal actor establishes SOI <i>only at actor level</i> in the supply chain.	<i>Low level</i> of sustainability performance across the whole supply chain
Intermediate Stage of SOI in SCM	<i>Developing Stage of SOI</i> (See section 6.5.1)	Focal actor develops SOI with existing actors at <i>only dyad levels</i> in the supply chain	<i>Moderate level</i> of sustainability performance across the whole supply chain
Progressive Stage of SOI in SCM	<i>Implementing Stage of SOI</i> (See section 6.5.1)	Focal actor implements SOI with major existing <i>actors across</i> the supply chain.	<i>High level</i> of sustainability performance across the whole supply chain

6.5.2 Research Propositions

The researcher argues that SCM is used as the main theoretical foundation with the facility to integrate the theoretical perspectives (network, entrepreneurship, innovation and sustainability). Hence, propositions have been formulated and discussed in order to reflect the association between the four perspectives and SOI in food SCM. The developed propositions, based on the findings of this research supported by replication logic across all cases, will assist in answering the research questions. Theorists and practitioners may use these propositions in future research, for example in a different contextual setting or to test a model.

The research began with conducting the systematic literature review (Chapter 2), where one of the key findings was to identify the theoretical themes that underlie the role of SOI in food SCs (see Chapter 2; Tables 2.5, 2.7, 2.9, 2.11), hence leading to the construction of the initial conceptual framework (see Figure 2.17). Later, expert interviews were conducted to refine this initial framework and to refine the case interview protocol- questions, hence from the findings the proposed conceptual framework associated to the key perspectival themes was constructed (see Figure 4.2). **Thus, this achieved RO1**, as several authors called for an understanding of the contribution of the theoretical themes for SOI in SCM (e.g. Bernardes, 2010; Braziotis et al., 2013; Beske and Seuring, 2014; Luzzini et al., 2015; Tasca et al., 2017).

P1 below is formulated to reflect in achieving RO3 in order to answer RQa. This is in regards to how relationships and networks are formed by the focal actors to achieve SOI in the food SC. It was found that the interaction of the three themes of the network (actor position, activities and resources) are necessary for effective and enhanced benefits across SCs (Guercini et al., 2011; Aarikka-Stenroos et al., 2014). All of the cases showed that the focal actor needs to establish and organize their activities (planning, organizing, controlling and exchange activities) (e.g. Lenney and Easton, 2009; Guercini et al., 2011) and consider the use of their resources (financial, information, physical and personnel resources) efficiently (e.g. Lenney and Easton, 2009; Pathak et al., 2014; Bellamy et al., 2014). The majority of the cases indicated that the focal actor needs to construct their actor position, in regards to building their brand image and reputation as well as being committed leaders. In some cases, it was apparent that the focal actor as an entrepreneurial retailer should use their position imbalance positively across the SC working with other dyadic and network actors (see Table 6.2). Hence, the focal actor should simultaneously consider actor position, activities and resources to establish SOI; this should be established and developed at all three levels: actor, dyad and network, in order to successfully implement SOI across the SC. This research found that implementing the network perspective is important for the members of the SC's competitive advantage (e.g. Wilson, 1995; Nagurney, 2010; Bellamy et al., 2014). It was concluded that the chain actors work in networks to improve sustainability SC performance (Harland, 1996). It was also indicated that the network perspective in SCM could be a source of innovation (Bellamy et al., 2014). Therefore, the following is proposed:

***P1:** Network perspective in terms of actor position, activities, and resources has positive orientation on establishing SOI in regard to innovation orientation and sustainability orientation in food SCM.*

P2 below is formulated to reflect in achieving RO2 in order to answer RQb. This is regarding how focal actors, with entrepreneurial characteristics, associated in the chain to build an enterprise of innovation as the first stage of SOI in the food SC. The majority of the cases indicated that for a focal actor to be a corporate entrepreneur they need to provide entrepreneurial context for their employees in order to succeed. The focal actor needs to provide training sessions, workshops and exhibitions for its employees in order for them to have better knowledge and information around different topics (e.g. teamwork, code of conduct, quality control and sustainability). It was revealed that it is the responsibility of the HR to organize adequate and relevant training, workshops, and exhibitions throughout the year for all level of employees. The majority of the cases indicated that their HR needs to understand the different factors of affecting their retailer (e.g. the decisions made in order to achieve their business goals), making good decisions (e.g. recruiting the best employees),

motivating, leading and driving their employees to success as well as having the characteristics of an entrepreneur (e.g. being innovative and to think ‘outside of the box’). Several cases suggested that for a focal actor to be a corporate entrepreneur not only should they support innovation but they should also provide and structure an entrepreneurial environment that allows mistakes and failures, in addition to having multidisciplinary teams (see Table 6.3). It was found that in food SC, the focal actor (retailer) ought to perform as CE. In turn this creates the value of innovation activities, hence leading to better sustainability performance (e.g. Meyer, 2009; Nason et al., 2015).

Contrary to the findings, some of the literature argues that an entrepreneur does not fundamentally have to be innovative (e.g. Koellinger, 2008; Nason et al., 2015). However, this research revealed the more innovative an entrepreneur is the more likely they are to survive in a competitive market, with a better economic growth and enhanced sustainability performance (e.g. Kuratko et al., 2014; Nason et al., 2015). It was found that the more an entrepreneur is motivated to be innovative the more successful they are compared to a less motivated entrepreneur (e.g. Bosma et al., 2010; Sandberg et al., 2013; Nason et al., 2015). Being capable of establishing and developing sustainability strategies is usually affected by the innovation power of the focal actor (retailer) and its dyads and network in the SC (e.g. Van Bommel, 2011; Boons et al., 2013). It was suggested that the focal actor not only forms an innovative team for internal qualification and skills but also for them to build their skills, knowledge, and innovation with their dyad and network employees in order to establish and enhance SOI across the SC. Therefore, the following is proposed:

***P2:** Entrepreneurship perspective in terms of corporate entrepreneurship, intrapreneurship and entrepreneurial HR has positive orientation on establishing SOI in food SCM.*

P3 below is formulated to reflect in achieving RO2 in order to answer RQb. It was revealed that the focal actor as a corporate entrepreneur needs to build innovative, entrepreneurial and qualified employees to attribute to the internal culture (e.g. Orchard et al., 2018). The focal actor also needs to consider their actor position in addition to organizing their activities and considering the use of their resources. Several cases indicated that the focal actors’ intrapreneurs and entrepreneurial HR need to help shape their actor position as a focal entrepreneur and activities as well as efficiently using their resources for better practicing SOI in food SCs. It was suggested in the majority of the cases that the focal actor should simultaneously consider actor position, activities and resources at all three levels, in order to lead to better connecting of economic growth and make contributions in terms of new knowledge and strategies from and to the other SC actors (Nason et al., 2015). Therefore, the following is proposed:

***P3:** The more the focal actor and/or other chain actors apply the Entrepreneurship perspective (in terms of corporate entrepreneurship, intrapreneurship and entrepreneurial HR) the higher the network perspective capabilities for SOI in food SCM.*

P4 below is formulated to reflect in achieving RO4 in order to answer RQc, in regards to how innovative enterprises are linked to innovative activities in order to build an enterprise of SOI at the three levels in the food SC. It was found in some cases that in order to expand sustainability orientation across the chain, all actors should be innovative in their management methods, such as developing sustainable products or services across the chain, thereby influencing various SC structures and focusing on sustainable performance (e.g. Beske and Seuring, 2014). They also agreed that in order to build an enterprise of SOI and integrate SOI across the SC they need to develop innovative sustainable SCM strategies depending on the combined relationships between all the actors, such as collaboration and partnerships (e.g. Neutzling et al., 2018).

However, first the focal actor needs to build itself in SOI and to effectively continue to develop and practice it. All the cases indicated that at first focal actors have a goal of optimization for both processes and products with incremental innovation towards enhancing sustainability within their organization (Adams et al., 2016; Luqmani et al., 2017; Neutzling et al., 2018). Then, the focal actor focuses on organizational transformation, where sustainability is their main focus. During these activities, collaboration between their immediate stakeholders (dyad level) helps produce SOI. Lastly, shown from a few cases, the focal actor focuses on systems building as they focus further on SOI in terms of their business purpose, implying that a network of actors rather than just the focal actor creates sustainability value collaboratively. Hence, focal actors ought to develop and implement innovations to enhance sustainability, therefore shifting to new business paradigms which influence their actors as stakeholders across all three levels (actor, dyad and network) (Adams et al., 2016; Neutzling et al., 2018). It was revealed that entrepreneurs are innovative at different levels of achievement; entrepreneurs include focal actors (retailer), actors in dyads and networks as well as their employees (e.g. Nason et al., 2015; Roscoe et al., 2015). The following is proposed:

***P4:** The higher the level of involvement between the different actors of the supply chain (moving from actor-to-dyad-to-network level) when establishing SOI the higher the capabilities of developing SOI in food SCM.*

P5 below is formulated to reflect in achieving RO4 in order to answer RQc. This research concluded that if the focal actor applies product, process and organizational innovations which lead to environmental, social and economic sustainability across the actors of the SC this will assist in building and implementing SOI. The majority of the cases suggested that it is important to stay

competitive (e.g. Klewitz and Hansen, 2014), seize market opportunities (e.g. Klewitz and Hansen, 2014) and design for sustainability (e.g. Biondi et al., 2002; Martín-Tapia et al., 2010), such as with energy saving properties, recyclability, eco-friendly materials, product shelf-life and reducing raw material (see Table 6.4), hence implementing SOI. The majority of the cases indicated that it is important to have efficient packaging systems to reduce costs or use biodegradable packaging (e.g. Bos-Brouwers, 2010) and to have eco-labelling for organic and recyclable products (e.g. Hansen and Grosse-Dunker, 2013). Hence, with the focal actor considering these issues and their collaboration with its dyads they can discuss methods to achieve this, implementing SOI.

This research showed that adopting environmentally-friendly technologies (e.g. Klewitz and Hansen, 2014) is a key issue for all the SC's actors to collaborate together in order to solve complex issues innovatively. Several cases showed that being able to respond to external demands (e.g. customer demand and government regulations) and raising industry standards in line with environmental performance is something all actors should consider together and influence each other, hence building and implementing SOI. The consideration of handling waste (e.g. Klewitz and Hansen, 2014) across the SC can also help in developing and implementing SOI. The collaboration between the relevant chain actors in regards to efficient logistics is essential to implement SOI. The majority showed that stakeholder management, including contracts and communications between each other, engaging employees in developing a sustainable business, being certified with ISO 22000 and HACCP and having sustainability vision is important to be across the SC in order to build and implement SOI. Therefore, the following is proposed:

***P5:** The more the focal actor applies the innovation perspective (product, process and organizational) that leads to sustainability (environmental, social and economic factors) across the different actors, the greater the implementation of SOI in food SCM.*

P6 below is formulated to reflect in achieving RO5 in order to answer RQd, in regards to what the capabilities for focal actors of SOI are to enhance their sustainability performance at three levels in the food supply chain. It was clear from this research for a focal actor (retailer) in the SC that has the criteria of a corporate entrepreneur to successfully establish, develop and implement SOI in food supply chain at actor, dyad and network levels. Then a focal actor should be innovative in order to achieve optimization for both processes and products with incremental innovation towards establishing and enhancing environmental, social and economic sustainability within their organization. Later, focal actors should focus on activities of organizational transformation, where sustainability is their focus and is implanted in the organization's strategies to create value. During these activities, collaboration between their stakeholders (e.g. distributor, packaging, government

body) across all three levels helps to produce and enhance SOI, leading to better sustainability performance across the SC. Their intrapreneurs and entrepreneurial HR should support the focal actors in establishing, developing and implementing product, process and organizational innovation, which leads to environmental, social and economic sustainability, while considering the activities and resources they have and efficiently use them to be sustainable. The focal actor should later focus on systems building as the mind-set of the organization shifts towards SOI in order to develop innovations to enhance sustainability. This may influence their stakeholders (e.g. manufacturer, warehouse, raw material suppliers) across all three levels. A corporate entrepreneur should consider their actor position in an innovative way in order to enhance sustainability across the SC, thereby enhancing sustainability performance. Therefore, implementing efficient SOI across the entire supply chain, led by the focal actor, has positive orientation to the strength of sustainability performance for the whole food SC. Therefore, the following is proposed:

***P6:** The greater the application of establishing, developing and implementing SOI with a focus on the sustainability perspective (environmental, social and economic factors) across the supply chain, the greater the strength of sustainability performance in food SCM.*

6.6 Final Conceptual Framework

6.6.1 Holistic Conceptual Framework

A Holistic Conceptual Framework (Figure 6.6) was constructed to understand the phenomenon of SOI in food SCM, more specifically, the association between innovation orientation and sustainability orientation, through the four network, entrepreneurship, innovation and sustainability perspectives. **Thus, this achieved RO6.** This final framework is linked with the perspectives and the empirical research findings. The case studies have been explored and explained in order to develop, examine and provide a novel conceptual framework. Several cases indicated that there is a link and interaction between the four perspectives in order to establish, develop and implement SOI across the food SC. Hence, replication was applied across these cases in order to provide refinement and validation for the final framework. Thus, this research provides this holistic framework as a key novel contribution to theory in the field of SCM.

The research began with conducting the systematic literature review, hence leading to constructing **an Initial Conceptual Framework (see Figure 2.17, Chapter 2)**. The initial framework suggested that SCM is used as the main theoretical foundation for this research, with the ability to accommodate the network, entrepreneurship, innovation and sustainability perspectives to understand SOI in food SC. Several perspectival high-order themes for each perspective were identified based on the systematic literature review, which are related to the role of SOI in food SCs.

As seen in Figure 2.17, the high-order themes for the network perspective are actors, resources, and activities; for the entrepreneurship perspective they are corporate entrepreneurship, intrapreneurship and entrepreneurial HR; for the innovation perspective they are product, process and risk taking; and for the sustainability perspective they are environmental, social and economic.

Later, expert interviews were conducted to refine the initial framework, hence, based on the key findings, the initial framework was revised and **a Proposed Conceptual Framework was newly provided (Figure 4.2, Chapter 4)**. This framework proposed beginning with the themes of the entrepreneurship perspective that should be devoted to integrating the network perspective at the actor, dyad and network levels to have orientation to SOI in SCM. Retailers, as focal actors, play a key role in the food supply chain; they should apply corporate entrepreneurship, intrapreneurship and entrepreneurial HR. Hence, there is a link between the focal actors as corporate entrepreneurs and the development of focal actor positioning, their activities and their resources at the actor, dyad and network levels. Furthermore, the themes of entrepreneurship are linked with the network perspective in order to have progressive orientation to SOI, with regards to the innovation and sustainability perspectives. The findings confirmed that the SOI concept is formed based on an integrated link between innovation orientation and sustainability orientation. Hence, the focal actor as a corporate entrepreneur should implement product, process and organizational innovation in order to enhance innovation orientation, and should implement the environmental, social and economic aspects in order to enhance sustainability orientation. Therefore, the key themes are confirmed from the findings, which refined the initial framework, by either integrating or removing themes. One of the high-order themes for innovation (risk-taking) was removed and another high-order theme (organizational innovation) was integrated. Other concepts such culture and business risks were suggested to be considered when doing a case study. This assisted the researcher to restructure the perspectives in a different order as well as to reconstruct the themes by better linking the identified perspectives. SCM remains the foundational perspective and the four other perspectives are incorporated in SCM to study the phenomenon, SOI, in a holistic view.

Finally, case studies were conducted to refine the proposed framework. Hence, based on the key findings of the cross case analysis, the researcher revised the proposed framework to refine it; therefore **a Final Holistic Conceptual Framework (Figure 6.6, Chapter 6)** is constructed. Four cases have confirmed the theoretical links between the four key perspectives and SOI, which in turn have orientation to sustainability performance as can be seen in the six propositions. The other two cases have confirmed little support to the links; however, they assisted in confirming the importance of the interaction of the four perspectives and three stages of SOI in order to enhance sustainability

performance across the supply chain as well as assisting in the refinement stages. The holistic framework includes the six propositions that were developed to identify and analyze the association between the four perspectives and SOI in SCM. The propositions helped in answering the research questions (see Section 6.5.2).

Therefore, the process of exploring and explaining within and across cases has led to an improvement in the final conceptual framework by confirming and newly adding underpinning insights. The research has achieved the necessary validity, reliability and trustworthiness requirements and it thus confirmed and contributed to the following:

- The findings have confirmed key themes for each perspective and their orientation to SOI in food SCM. The research has newly added the contextual factors (sub-themes) that mainly emerged from the triangulation and replication across cases (see **Tables 6.2, 6.3, 6.4, 6.5 and 6.6**).
- The findings have linked a set of themes for each perspective, providing an underpinning understanding for each perspective's orientation individually and together rather than overlapping on SOI to holistically understand SOI in the food SC (see **Figures 6.1, 6.2, 6.3 and 6.4**).
- The findings have conceptualized SOI in a broader way on all three levels (actor, dyad and network) in a food SC as this will provide a holistic insight. More importantly, this research has provided key insights into the theoretical underpinning of SOI in food SCM based on three key stages (establishing, developing and implementing stages of SOI) (see **Figure 6.5**).
- The final holistic framework illustrates the direction of orientation between the stages and across the four perspectives in order to be harmonized as patterns in a holistic way. It has provided six new propositions (See **Section 6.5.2; P1-P6**) that have established a new theoretical link of the four key perspectives, SOI and sustainability performance in food SCM (see **Figure 6.6**).

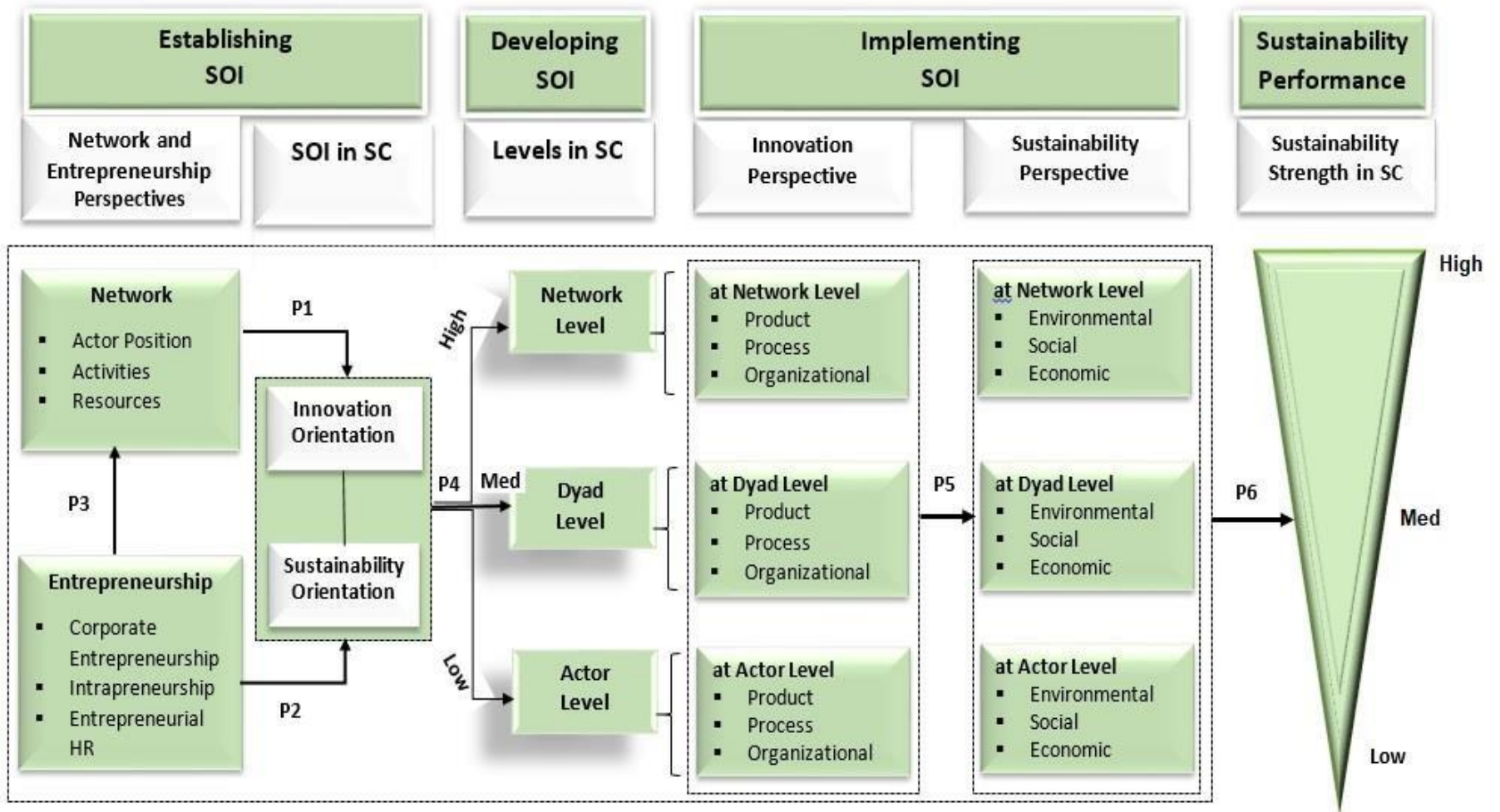


Figure 6.6: Holistic Conceptual Framework of SOI in Food SCM (Author's own work).

6.6.2 Typologies

Figure 6.6 has provided a holistic conceptual framework for SOI in food SCM. This framework was constructed after it was examined and evaluated based on the stages of exploratory and explanatory research, including eight expert interviews, within cases analysis (30 interviews, 18 observations and secondary data) and across case analysis. Triangulation methods and replication logic were also applied in data collection and analysis. Thus, the research followed rigor steps in order to ensure validity, reliability and trustworthiness, hence, the present findings have concluded that there is a positive association between the four theoretical perspectives, SOI and sustainability performance in food SCM. The final conceptual framework then was sent to two academic researchers in Jordan, who are experts in food SC. They have verified that the framework does provide good understanding of SOI in food SC and both academics and practitioners can benefit from it and the way SOI should be established, developed and implemented in the food retail industry at the three levels.

Drawing from the above, this research advances a typology of SCM suited to building SOI in the Jordanian food-retailing sector. The key findings from the present research are used to highlight contrasting suggestions and recommendations for finding SOI that may exist in food SC of retailers (focal actors). Table 6.8 shows the links between the six propositions and the new typologies for the three types of SOI in food SC.

Table 6.8: Typology of SOI in Food SC (Author's own work)

Types of SOI in SC	Description	Focus	Potential Outcome
Strong SOI in SCM	Implementing <i>strongly</i> network, entrepreneurship, innovation and sustainability perspectives at three levels (actor, dyad and network).	Focal actor establish, develop and implement SOI with major existing <i>actors across</i> the supply chain.	<i>High level</i> of sustainability performance across the whole supply chain
Moderate SOI in SCM	Implementing <i>moderately</i> network, entrepreneurship, innovation and sustainability perspectives at three levels (actor, dyad and network)	Focal actor establish, develop and implement SOI with existing actors at <i>only dyad levels</i> in the supply chain	<i>Moderate level</i> of sustainability performance across the whole supply chain
Weak SOI in SCM	Implementing <i>weakly</i> network, entrepreneurship, innovation and sustainability perspectives at three levels (actor, dyad and network)	Focal actor establish, develop and implement SOI at <i>only actor level</i> in the supply chain	<i>Low level</i> of sustainability performance across the whole supply chain

6.7 Conclusion

The chapter has delineated the holistic conceptual framework for deeper understanding of SOI in food SCM in Jordan. The chapter has presented key findings and discussion across the case studies. The key findings have explained the food SC of retailers across the six cases, focusing on SOI in food SCM. The research has concluded that there is a positive association between the four theoretical perspectives (network, entrepreneurship, innovation and sustainability), SOI and sustainability performance. Thus, the research aim, questions and objectives have been achieved (See Chapter 7, Table 7.1).

The next chapter will present an overview of the chapters, research contributions and implications, limitations and suggested future research and researcher's reflection.

Chapter Seven: Conclusion

7.1 Introduction

This chapter provides a summary of the present research, research contributions, research limitations and suggested future research, and research reflection. In **Section 7.2**, an overview of the thesis chapters is provided. A summary of the achievements of the research aim and questions are also presented in Table 7.1. In **Section 7.3**, the research contributions, implications and recommendations are outlined (See Figure 7.1 for overview of research contributions). In **Section 7.4**, the research limitations and suggested future research are outlined. Then the researcher's reflection will be offered in **Section 7.5** (See Appendix R for full details on researcher's reflection). Finally, **Section 7.6** presents the chapter summary of this research (See Figure 7.2 for overview of the thesis chapters).

7.2 Overview of the Findings

Chapter 1 introduced the main rationale for conducting this research, which is based on the foundation of SOI in SCM with the purpose of identifying the main aspects of SOI that contribute to an effective and sustainable SCM and to suggest how the adoption of SOI along the SC can enhance sustainable performance (Akhavan and Beckmann, 2016; Adams et al., 2016; Neutzling et al., 2018). Scholar authors and empirical research were reviewed, defining the research aim, so as to understand SOI in food SC in Jordanian food retailers. More specifically, the association between innovation orientation and sustainability orientation was explored and explained in order to develop, examine and provide a novel holistic conceptual framework.

In *Chapter 2* a systematic literature review was conducted which laid down the foundation theory of SCM with a focus on SOI enhancing sustainability performance. Then the research was narrowed down, leading to the identification of the four key perspectives: network, entrepreneurship, innovation and sustainability. Hence, the research gap was identified: that there is no theoretical framework for SOI in SCM, and there were overlaps amongst the high-order themes used by most of the four perspectives to understand SOI in SCM (e.g. Yakovleva and Flynn, 2004; Martindale, 2010; Rueda et al., 2017; Behnam et al., 2018). The research problem was also identified: that there is no framework for researchers and practitioners to abide by to enhance SOI in the food SC for retailers, especially in developing countries in the Middle East such as Jordan. In the light of the research gap and problem, the research aim and the research questions were generated (see section

1.5). Therefore, an initial conceptual framework was constructed to identify the enquiry of the undertaken study (see Figure 2.17).

Chapter 3 addressed and justified the research design and methodologies exploited. This research applied an interpretivist epistemological view and followed a qualitative method, employing an abductive approach. As far as the research design is concerned, first, an initial conceptual framework (see Figure 2.17) was constructed to examine the research focus and assist in guiding the empirical work. Secondly, expert interviews (see Chapter 4) were conducted to refine the initial conceptual framework and to refine the case study protocol-questions (Appendix G). Data were collected from eight experts: six HR managers (from the six retailers) and two academic researchers (from UK and Jordan). Therefore, a proposed conceptual framework (see Figure 4.2) was constructed based on the outcomes of the expert interviews. Thirdly, to examine and refine the proposed framework a multiple case study was conducted. The unit of analysis was the SC of retailers. This was applied to understand the case study of retailers in the context of the Jordanian food industry. Primary and secondary data were collected from six food retailers in Jordan, consisting of 30 semi-structured interviews (five different managers at each case), 18 observations (a meeting and a tour at the actor, dyad and network levels) and secondary data (archival records and documents). Individual cases were analyzed (see Chapter 5) and cross-case analysis was conducted (see Chapter 6). Therefore, this stage contributed to generating propositions, answering the research questions and constructing the final holistic conceptual framework as well as typologies were generated (see Chapter 6). This chapter discussed the research rigor in terms of validity, reliability and trustworthiness.

Chapter 4 discussed the findings of the eight expert interviewees. It was found that HR plays an important role in SC of retailers as HR engage in supply chain practices, they create and engage in different strategies focused on sustainability and HR play an important role in motivating employees to achieve the goals. The experts refined the initial conceptual framework. One of the high-order themes for innovation, risk-taking, was removed and another high-order theme, organizational innovation, was integrated. The concepts of culture and business risks were suggested to be explored. SCM remained the foundational perspective and the four other perspectives were combined in the SC to study the phenomenon, SOI, in a holistic view. The findings from the experts also helped to restructure the perspectives in a different order and to reconstruct the themes by better linking the identified perspectives. Furthermore, this refined the case study protocol-questions (Appendix G). Thus, based on the key findings a Proposed Conceptual Framework was newly provided (Figure 4.2, Chapter 4) and used in the multiple case studies.

Chapter 5 covered the findings of the six case studies individually, in terms of the findings from the semi-structured interviews, observations and secondary data. Each case study explored the four perspectives (network, entrepreneurship, innovation and sustainability) and their key themes across the SC. From the findings, contextual factors emerged for each theme and perspective; descriptions of the contextual factors were also provided (Tables 5.2, 5.3, 5.4 and 5.5). The findings of the six case studies individually were discussed based on all four perspectives, providing key quotes for each contextual factor that emerged. Most of the cases suggested that there is an association between the four perspectives and SOI in SCM. The findings from the observations at all three levels (actor, dyad and network level) and secondary data for each case were also discussed. These findings provided triangulation support of the contextual factors for the themes and their association with the phenomenon, hence ensuring validity, reliability and trustworthiness.

Chapter 6 outlined the findings and discussed the cross case analysis. The proposed conceptual framework (Figure 4.2, Chapter 4) was revisited to refine it based on the findings of the cross case analysis, therefore a final Holistic Conceptual Framework (Figure 6.6, Chapter 6) has been constructed. Four cases confirmed the theoretical links between the four key perspectives and SOI, which were in turn linked to sustainability performance as seen in the six propositions (see Section 6.5.2, P1-P6). The other two cases provided little support to the links; however, they assisted in confirming the importance of the interaction of the four perspectives and three stages of SOI (establishing, developing and implementing SOI) (See Section 6.5.1) in order to enhance sustainability performance across the SC as well as assisting in the refinement stages. The holistic conceptual framework includes the six propositions that were developed to identify and analyze the replicated associations between the four perspectives and SOI in SCM. The propositions provided evidence in achieving the research objectives in order to answer the research questions (discussed in Section 6.5.2). Therefore, the process of exploring and explaining within and across cases has led to improving the final conceptual framework by confirming and newly adding underpinning insights. The findings extended the validity and reliability of this research.

Table 7.1 below provides a summary of the achievements of the research aim and questions of this research.

Table 7.1: Achievements of Research Aim and Questions (Author's own work).

<p>Aim: To critically understand the role of entrepreneurship and HR in supporting SOI in SC of food retailers in Jordan. More specifically, the association between innovation orientation and sustainability orientation is explored and explained in order to develop, examine and provide a novel conceptual framework. It also provides managerial recommendations concerning the applicability of SOI in food SC.</p>	
<p>RQ- How are retailers supported by entrepreneurship and HR to establish and enhance SOI along their food SC in Jordan?</p>	
<p>RO1: To identify the theoretical themes by reviewing and synthesizing prior literature that highlight the role of SOI in food SCs.</p>	<p>Fulfilling objective 1, was derived first from the literature review based on a deductive approach by identifying key perspectival themes (See Chapter 2, Section 2.5) reflecting the researcher's theoretical interest and identifying research gaps. Second, the exploratory stage of the expert interviews as the first stage of the qualitative method was used to refine the initial key perspectival themes by confirming/rejecting and/or adding new themes in order to establish the foundation of the phenomenon of SOI in SCM (See Chapter 4, Section 4.3.2) to guide the data collection and analysis as well as to establish the initial conceptual framework</p> <p>Key Methods and Findings:</p> <ul style="list-style-type: none"> ▪ SOI was explored and identified as a significant role in SCM as the foundation of this study. ▪ Key themes were identified based on four perspectives (Network, Entrepreneurship, Innovation and Sustainability). ▪ An Initial Conceptual Framework was constructed to consistently guide data collection and analysis for expert interviews (See Figure 2.17) ▪ A Proposed Conceptual Framework was constructed to consistently guide data collection and analysis for case studies (See Figure 4.2)
<p>RQa: How are networks and dyadic relationships formed by retailers, as focal actors, to achieve SOI in the food SC?</p>	<p>Fulfilling RQa was through objective 3 and was supported by objective 1. It is attained by the network perspective, on how the actors across the SC work towards establishing their focal firm (actor level), relationships (dyad level) and networks (network level) in order to establish SOI in SCM. This was based on the case study strategy of both the exploratory and explanatory stages within and across the six cases.</p> <p>Key Methods and Findings:</p> <ul style="list-style-type: none"> ▪ Key themes of actor position, resources and activities towards achieving SOI were triangularly explored in each case in order to code the contextual factors that newly emerged across the cases (See Chapter 5, Table 5.2) ▪ The key themes were explained in order to replicate the findings across the cases, achieving key insights (See Chapter 6; Table 6.3, Figure 6.1) ▪ Key proposition provided: P1 (See Chapter 6, Section 6.5.2)
<p>RQb: How are focal actors associated to build an enterprise of innovation based on entrepreneurship, as the first stage of SOI at three levels in the food SC?</p>	<p>Fulfilling RQb was through objective 2 and was supported by objectives 1 and 3. This was achieved by the entrepreneurship perspective, on how the focal actors at the three levels (actor-dyad-network levels) work and participate as an enterprise of innovation in order to establish SOI in SCM. This was based on the case study strategy of both the exploratory and explanatory stages within and across the six cases.</p> <p>Key Methods and Findings:</p> <ul style="list-style-type: none"> ▪ Key themes of corporate entrepreneurship, intrapreneurs and entrepreneurial HR towards achieving SOI were triangularly explored in each case in order to code the contextual factors that newly emerged across cases (See Chapter 5, Table 5.3) ▪ The key themes were explained in order to replicate the findings across the cases, achieving key insights (See Chapter 6; Table 6.4, Figure 6.2) ▪ Key propositions provided: P2 and P3 (See Chapter 6, Section 6.5.2)

<p>RQc: How are innovative enterprises linked to innovative activities in order to build an enterprise of SOI at three levels in the food SC?</p>	<p>Fulfilling RQc was through objective 4 and was supported by objectives 1, 2 and 3. It was reached by the innovation perspective, on how the focal actors at the three levels (actor-dyad-network levels) work and participate as an enterprise of SOI in order to implement SOI in SCM. This was based on the case study strategy of both the exploratory and explanatory stages within and across the six cases.</p> <p>Key Methods and Findings:</p> <ul style="list-style-type: none"> ▪ Key themes of product, process and organizational innovation towards achieving SOI were triangularly explored in each case to code the contextual factors that newly emerged across cases (See Chapter 5, Table 5.4) ▪ The key themes were explained in order to replicate the findings across the cases, achieving key insights (See Chapter 6; Table 6.5, Figure 6.3) ▪ Key concepts that emerged: three stages: optimization, organizational transformation and system building newly emerged and were linked to the three levels. ▪ Key propositions provided: P4 and P5 (See Chapter 6, Section 6.5.2)
<p>RQd: What are the capabilities of focal actors towards SOI to enhance their sustainability performance at three levels in the food SC?</p>	<p>Fulfilling RQd was through objective 5 and was supported by objectives 1, 2, 3 and 4. It was attained by the sustainability perspective, on how the focal actors at the three levels (actor-dyad-network levels) work and participate as an enterprise of SOI in order to successfully implement SOI in SCM, hence enhancing the strength of sustainability performance in food SC. This was based on the case study strategy of both the exploratory and explanatory stages within and across the six cases.</p> <p>Key Methods and Findings:</p> <ul style="list-style-type: none"> ▪ Key themes of environmental, social and economic sustainability towards achieving SOI were triangularly explored in each case in order to code the contextual factors that newly emerged across cases (See Chapter 5, Table 5.5) ▪ The key themes were explained in order to replicate the findings across the cases, achieving key insights (See Chapter 6; Table 6.6, Figure 6.4) ▪ Key proposition provided: P6 (See Chapter 6, Section 6.5.2)
<p>Overall contribution to achieve the research aim</p>	<ul style="list-style-type: none"> ▪ A Holistic Conceptual Framework was constructed (See Chapter 6, Figure 6.6); RO6 was achieved. ▪ SOI as a key phenomenon in SCM was explored and explained. ▪ The four perspectives (network, entrepreneurship, innovation and sustainability) were incorporated in SCM, hence extending theory, to assist in explaining the phenomenon holistically in food SC.

7.3 Research Contributions

This research provides theoretical and methodological contributions as well as implications and recommendations (see Figure 7.1).

7.3.1 Theoretical Contributions

- 1) One of the main theoretical contributions of this thesis is the construction of a novel holistic conceptual framework of SOI in food SCM (Figure 6.6), which contributed to solving the research gaps and problem (see Section 1.5) as well as answering the research questions (see Section 6.5.2). The holistic conceptual framework provides the theoretical links between the four key perspectives (network, entrepreneurship, innovation and sustainability) and SOI in SCM, as well as the three stages of SOI (establishing, developing and implementing SOI) in order to enhance sustainability performance across the SC (at the actor, dyad and network levels). This research responds to previous authors who suggested the need to examine the association of four key perspectives (network, entrepreneurship, innovation and sustainability) and SOI in SCM (e.g. Yakovleva and Flynn, 2004; Martindale, 2010; Tasca et al., 2017; Luqmani et al., 2017; Rueda et al., 2017; Petljak et al., 2018; Anzola-Román et al., 2018; Behnam et al., 2018). This study extends the growing body of literature on SCM by adopting a novel holistic conceptual framework for SOI in food SC (e.g. Dairy and Meat SCs) by linking it with the four key perspectives. This novel framework has paved the way for further empirical research.
- 2) Another key theoretical contribution is that this research provides key insights into the theoretical underpinning of SOI based on three key stages (see Section 6.5.1). Firstly, this research suggested that focal actors establish SOI and practice it, which allow SOI to utilize two key perspectives: entrepreneurship and network. Secondly, they develop SOI and to effectively continue to practice it. Hence, the focal actors have the goal of optimization, organizational transformation and systems building as the mindset of the organization shifts towards SOI more in terms of their business purpose. During this stage, developing SOI, the four key perspectives were utilized: network, entrepreneurship, innovation and sustainability. Finally, the focal actors implement SOI and efficiently practice it across the supply chain in order to enhance innovation activities and sustainability performance. During this stage, mainly two key perspectives were focused on, namely innovation and sustainability. Hence, extending theory, the four perspectives (network, entrepreneurship, innovation and sustainability) assisted in explaining the phenomenon holistically in SCM. Drawing on this contribution, this research conceptualizes SOI in the context of the food SC of retailers (see Section 6.5.1).

- 3) This research provides typologies as foundations for exploring theory to practice of SOI in SC in food industry (see Table 6.7). The first typology is the three stages of SOI in food SC. This includes the ‘beginner stage’ to establishing SOI at the actor level, once achieved the next stage is the ‘intermediate stage’ to developing SOI at the dyad level and finally this leads to the third stage ‘progressive stage’ to implementing SOI across the food SC. The more the focal actor moves toward the progressive stage the higher the level of sustainability performance is achieved across the SC. The second typology is related to the three types of SOI in food SC (see Table 6.8). The first type is strong SOI, the second is moderate SOI and the third is weak SOI in SCM, which are when the four perspectives (network, entrepreneurship, innovation and sustainability) are strongly, moderately and weakly implemented at the three levels of actor, dyad and network. For example, the focal actor as an entrepreneurial retailer should work with dyadic actors and network actors in order to establish, develop and implement SOI across major actors within the food SC and thus in turn this will lead to high level of sustainability SC performance.
- 4) An additional key theoretical contribution of this thesis is extending theory, the four perspectives (network, entrepreneurship, innovation and sustainability) to assist in explaining the phenomenon holistically in SCM. In this thesis, a new construct of the four perspectives was structured to better explain SOI in SC. This is where the newly emerged contextual factors were added and linked to these themes and their perspectives (see Figure 6.6). Hence, this research provides the theoretical underpinning of the inter-relationship association (based on empirical findings) between each individual key perspective (network, entrepreneurship, innovation and sustainability) with SOI (see Section 6.5). As well as the association of the four key perspectives together with SOI (see Figure 6.5); providing an understanding of how all four perspectives simultaneously working together may enhance SOI. This research also links HR to SCM in order to better understand the phenomenon and enhance sustainability performance.
- 5) The final theoretical contribution of this thesis is understanding how SOI in SC has expanded our understanding of how actors can achieve sustainability in SC, developing sustainable supply chain management (SSCM). Extending theory, the four perspectives (network, entrepreneurship, innovation and sustainability) and constructing the four perspectives in a holistic structure assisted with a better understanding of SOI in SCM and how to enhance SOI in SC, hence enhancing sustainability performance in the supply chain and leading to SSCM.

7.3.2 Methodological Contributions

- 1) One of the methodological contributions of this thesis is the rigorous research design developed in order to answer the research questions and also aimed at constructing a novel holistic conceptual framework, by means of a qualitative methodology. Two main stages were conducted: expert interviews (six HR managers and two academic researchers) and multiple case studies (semi-structured interviews, observations and secondary data). The initial conceptual framework (see Figure 2.17) and the case study protocol- questions (Appendix G) were refined based on the findings from the expert interviews and a proposed conceptual framework (see Figure 4.2) was constructed. Next, six case studies, including 30 semi-structured interviews, 18 observations (at actor, dyad and network level) and secondary data ,were explored and used to examine the proposed conceptual framework in each case (see Chapter 5). Finally, cross-case analysis was conducted and explained (see Chapter 6), and this generated propositions, answered the research questions and the final holistic conceptual framework (see Chapter 6) was constructed based on the key patterns.
- 2) Another methodological contribution of this thesis is undertaking this research from the supply chain of retailers and conducting the level-oriented data collection and analysis. First, primary and secondary data were collected and analyzed at their actor level and with their dyad level and network level. This provided validation of the information gathered from the interviews, observations and documentary data, and led to significant findings. The different matrices (see Tables 6.2-6.6) were constructed to explore and analyze the field data, and these displayed data for each theme, hence making it possible to make comparisons and contrasts at the three levels. This led to network models (see Figures 6.1-6.4) for each perspective that were later grouped in an aggregated network model (see Figure 6.5); this was used to assist in the final construction of the final holistic conceptual framework (Figure 6.6). It is anticipated that the approaches generated in this study can be replicated in the context of other actors in the SC.
- 3) Finally, this research followed an analytical generalization of SOI in SCM, which will be beneficial for food retailers and their SCs in Jordan. Qualitative methods, including exploratory and explanatory stages, were conducted. These stages were mainly conducted by three methods: expert interviews, individual cases and across cases, applying triangulation and replication logic. This has led to confirming and refining the newly emerged constructs and their proposed associations to theoretically and empirically understand SOI in SCM incorporated with the four perspectives. Hence, the research pursued repeated iterations between the literature, data and

theory, reaching a high link between theory (Final Conceptual Framework) and the data that emerged (empirical findings), thus maximizing the reliability and validity for research rigor. Thus, this may be beneficial for food retailers (both national and international) and other chain actors in developing countries to enhance SOI in SC, leading to increasing sustainability performance. It can also be valuable for food retailers in other countries to enhance SOI in SC.

7.3.3 Research Implications and Recommendations

Key practical and managerial implications and recommendations provided in this research suggest salient practical significance for managers, policymakers, workers, researchers, and anyone involved in SOI in food SC. They are as follows:

- 1) A practical and managerial implication of this research was to assist top management in enhancing SOI in the food SC for retailers. This research formed a holistic conceptual framework of SOI in food SC (Figure 6.6), which in turn assisted the managers, especially in developing countries in the Middle East such as Jordan.
- 2) Another implication of this research was to assist different levels of managers at the actor, dyad and network levels by providing key insights into enhancing SOI by following the three stages of SOI in order to achieve better sustainability performance across the supply chain. First, a focal actor establishes SOI and practices it; second, develops SOI and to effectively continue to practice it; and finally, implements SOI and efficiently practices it across the actors of the SC in order to enhance innovation activities and sustainability performance.
- 3) An additional implication was to assist managers and policy makers at the actor, dyad and network levels by providing an understanding of how the themes of each individual perspective should be applied in order to enhance SOI. For example, actors should focus on developing their employees, providing adequate resources, providing an intrapreneurial environment, focus on developing their HR, providing relevant, adequate workshops and training and enhancing their policies such as entrepreneurship and sustainability policies. These actors should also provide an understanding of how all the themes of the four perspectives simultaneously working together may enhance SOI. For example, the focal actor must focus on itself first in regards to developing their actor positioning, activities, resources, building their companies entrepreneurially, developing their employees as intrapreneurs, as well as developing their HR.

- 4) A further implication was to assist HR managers, especially at the focal actor level, where retail management can rely on HR in developing organization functions and activities, including the selection of employees based on the interaction of the themes of the four perspectives. In addition, how HR managers can assist other managers in interacting with other employees and other supply chain managers. Hence, this will create a business culture that consists of SOI at three levels. Furthermore, HR managers should also assist other employees by motivating and leading them in order to lead to innovation, hence sustainability. Therefore, the action of HR towards the focal actor, other employees and other chain members assist in the success of SSCM such as HRs' role for operationalizing responsibilities and relationships in the supply chain and some HR practices, for example team organization, training, performance indicators, teamwork, and flexible job descriptions.
- 5) The final practical and managerial implication was to assist focal actor managers, chain managers, policy makers, workers and researchers in understanding the importance of the four perspectives (network, entrepreneurship, innovation and sustainability) in order to assist in enhancing SOI in SCM. The research will provide them with an understanding of the significance of the inter-relationship association (based on empirical findings) between each individual key perspective (network, entrepreneurship, innovation and sustainability) with SOI; as well as the association of the four key perspectives together with SOI (see Section 6.5). In addition to providing an understanding of how all four perspectives and their themes simultaneously work together may enhance SOI. By doing so, this implication would assist in understanding how and when enhancing SOI in food SC can be applied, hence enhancing sustainability performance in the SCM and leading to SSCM.

See Figure 7.1 for the overview of the research contributions.

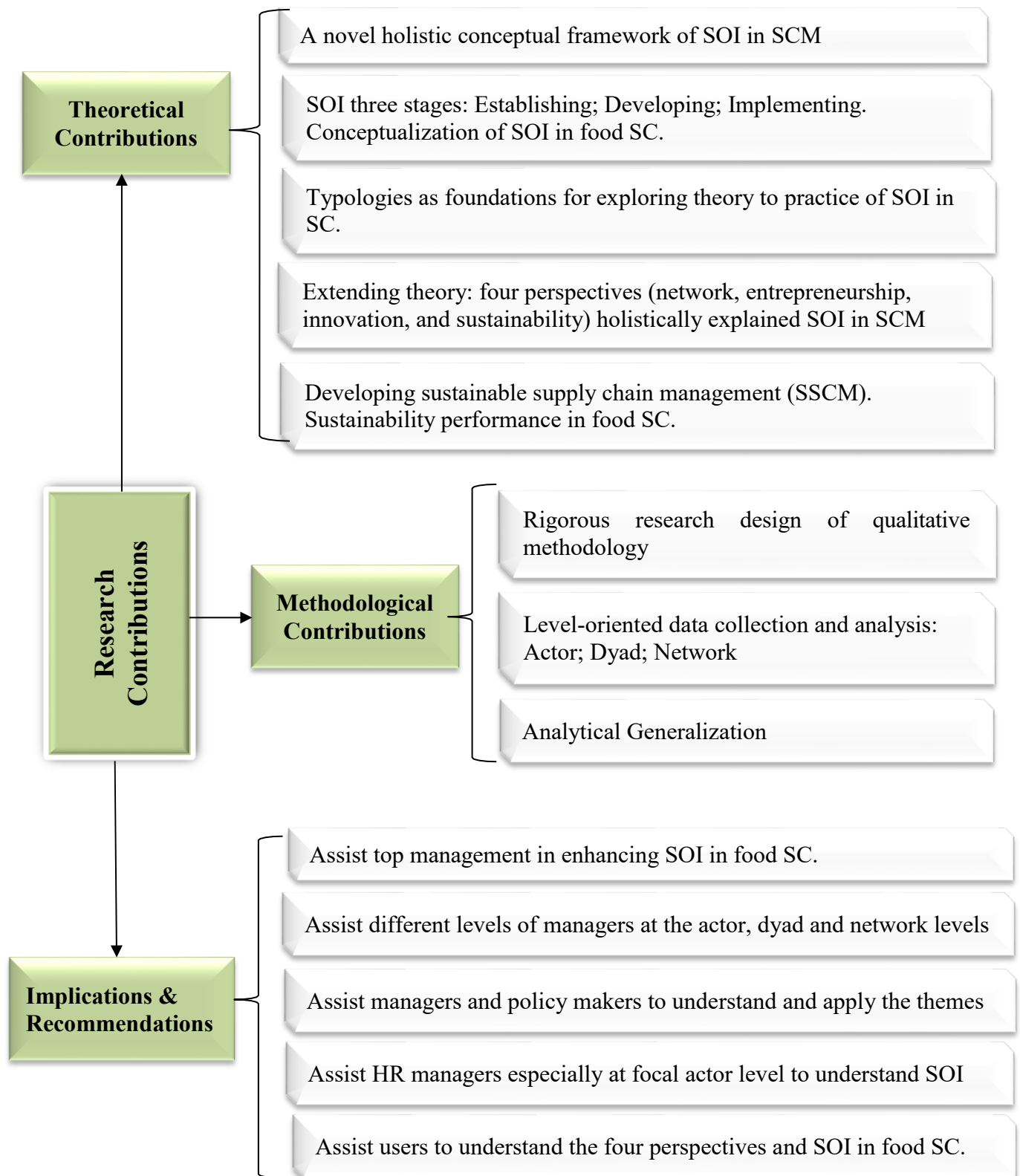


Figure 7.1: Overview of Research Contributions (Author's own work)

7.4 Limitations and Suggested Future Research

- 1) Developing a Final Holistic Framework of SOI in food SC was conducted in this research. The research design followed an interpretivist philosophy and an abductive approach, using qualitative methods of multiple-cases to understand the phenomenon of SOI in a real-life context in order to provide a novel holistic conceptual framework. The stages of data collection and analysis consisted of integrated aspects of validity and reliability to ensure research rigor and therefore to achieve the research questions and aim. The empirical data were collected from six retailers based on triangulation of interviews as a main source from the focal actor level, observations from the three levels of focal actor, dyad and network, and archival records and documents. However, this research has limitations in some aspects of validity, especially in the multiple sources of evidence, as the interviews were conducted only from the focal actors' perspective, the retailers along their food SCs. Thus, future research could expand on data triangulation based on conducting more interviews from other actor types, such as producers and distributors within the same food SC, in order to ensure the construct, internal and external validity more fully.
- 2) The four perspectives (network, entrepreneurship, innovation and sustainability) were applied to assist in explaining the phenomenon in SCM. The findings have linked a set of key themes for each perspective's effect individually and together rather than overlapping on SOI in order to holistically understand SOI. Future research could improve validation based on examining suitable associations between the contextual factors of these key themes and SOI in more depth to increase the internal validity of the framework.
- 3) Analytical generalization was provided in this research. The SC of retailers was the unit of analysis where the empirical data were linked to theory building (the initial, proposed and final conceptual frameworks) based on well-designed qualitative methods, including exploratory and explanatory stages. Although this research provided a positive attempt based on qualitative methods to critically understand and conceptualize SOI in the food SC of retailers in Jordan, conducting multi-techniques such as questionnaire or experiments within the used qualitative methods would have enhanced the research quality. It would also be possible to examine the final framework in the same empirical context using a quantitative method, such as a survey, in order to gain a statistical generalization. A future research path could be to conduct comparative research and examine the applicability of the final conceptual framework in similar empirical contexts in other developing countries or even developed countries.

- 4) HR managers as experts were chosen based on purposive sampling. HR managers were chosen as they understand the overall business context, hence playing a key role in organizations (Menon, 2012; Lengnick-Hall and Lengnick-Hall, 2013). HR is an important factor in having a successful supply chain (Ernst and Whinney, 1987). Therefore, there are benefits from collaboration and integration between the actors across the SC, such as cooperation and coordination, innovative strategies, information sharing between the actors of the SC and HR activities (Smith-Doerflein et al., 2011; Gómez-Cedeño et al., 2015). Hence, expert interviews were conducted to refine the initial conceptual framework and the case study protocol-questions. The HR managers recommended that the researcher contact other participants that fit the criteria and who have the ability to answer the interview questions with their knowledge and experience in the food SC, sustainability, innovation and entrepreneurship. However, this research has a limitation in the aspect of not focusing more on the perspective of HR managers regarding SOI in SCM. As it was highlighted in the findings, HR managers play an important role in the organization and they understand the whole context of their business in regards to understanding the factors affecting their firm from different points of view, including how and why decisions are made in order to achieve their business goals and how the retailer interacts with other actors in this regards. Therefore, a future research path could be to conduct semi-structured interviews to explore and examine SOI in food SC with a focus on HR managers' perspective at the three levels.

7.5 Reflection

Reflection is important for one to document their journey and to provide suggestions and references (Chang, 2019). Through reflection one will *“become accomplished at recognizing that they are learning and building skills continuously”* (Helyer, 2015, p. 23). Documenting a reflection allows one to challenge and question why they embarked on that task, in that way rather than how it was conducted (Chang, 2019). *“Reflection on the actions, thoughts and feelings that have arisen in a learning event can often provide an insight into learners' personal foundation of experience, into themselves, and into their ability to learn from this particular situation”* (Boud and Walker, 1990, p. 63). Therefore, the researcher's reflection throughout her PhD journey is provided (Appendix R).

7.6 Chapter Summary

This chapter has provided an overview of the chapters (Figure 7.2). The research aim and questions have been fulfilled (see Table 7.1). The research contributions, implications and recommendations have been highlighted (see Figure 7.1). The research limitations and suggested future research were acknowledged. Finally, the researcher's reflection was provided (see Appendix R).

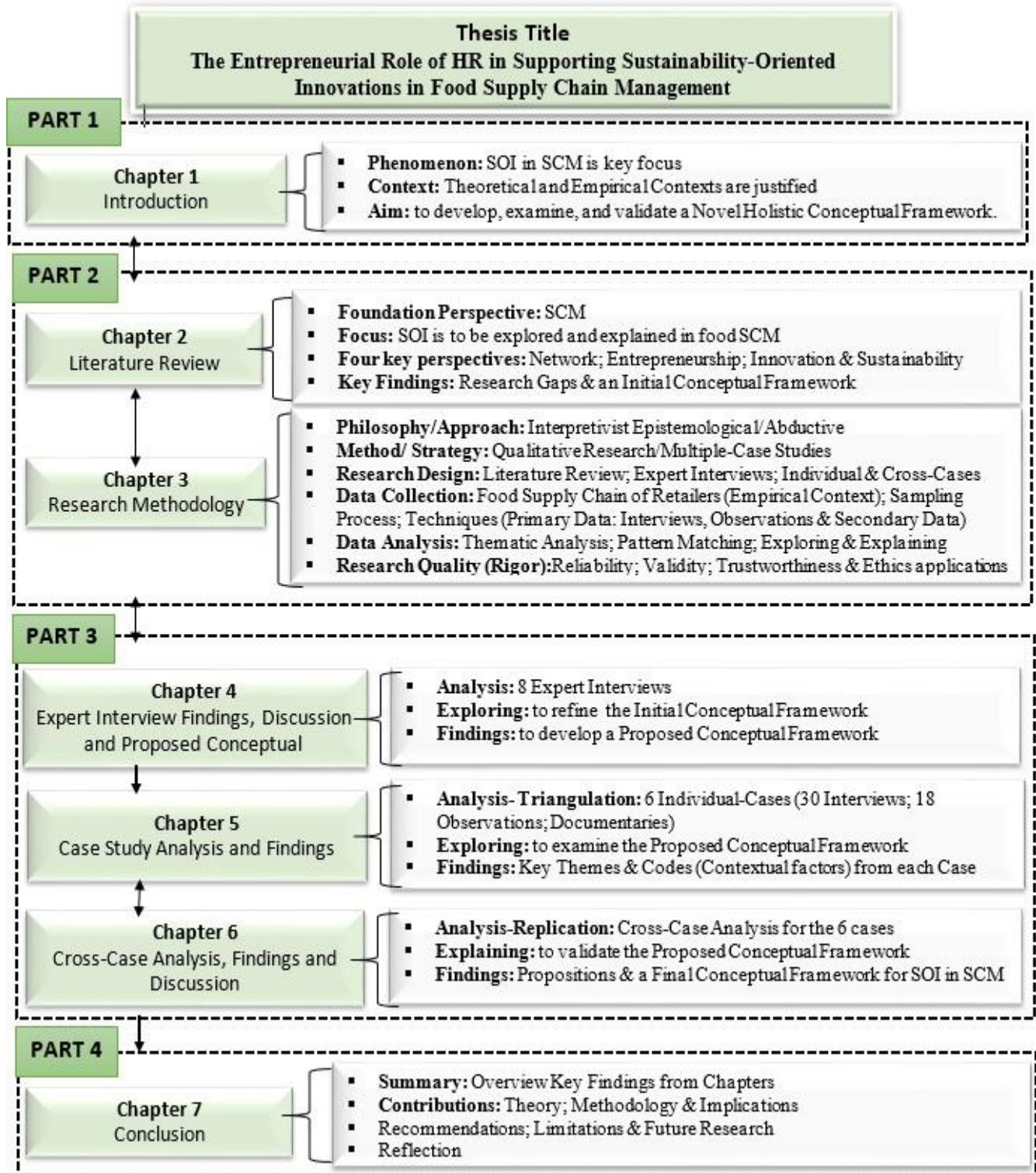


Figure 7.2: Overview of Chapters (Author's own work).

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Appendices

Appendix A: Key Search Strings

No.	Search Strings (Key Words)
1	Sustainability AND Innovation
2	Sustainability AND Network
3	Sustainability AND Entrepreneurship
4	Sustainability AND Corporate Entrepreneurship
5	Sustainability AND Intrapreneurship
6	Sustainability AND SCM
7	Sustainability AND Food Supply Chain
8	Sustainability AND Food Supply Chain AND HR
9	Sustainability AND Food Supply Chain AND Jordan
10	Sustainability AND Innovation AND Food Supply Chain
11	Sustainability AND Innovation AND Food Supply Chain AND Jordan
12	Sustainability AND Innovation AND Entrepreneurship
13	Sustainability AND Innovation AND Network
14	Sustainability AND Innovation AND Network AND Jordan
15	Innovation AND Network AND Food Supply Chain
16	Innovation AND Network AND Food Supply Chain AND HR
17	Innovation AND Network AND Food Supply Chain AND Jordan
18	Innovation AND Relationships AND Food Supply Chain
19	Innovation AND Entrepreneurship
20	Innovation AND Entrepreneurship AND Food Supply Chain
21	Innovation AND Entrepreneurship AND Food Supply Chain AND Jordan
22	Innovation AND SCM
23	Innovation AND Food Supply Chain
24	Innovation AND Food Supply Chain AND Jordan
25	SOI AND Innovation
26	SOI AND Network
27	SOI AND Entrepreneurship
28	SOI AND Corporate Entrepreneurship
29	SOI and Intrapreneurship
30	SOI AND Relationships
31	SOI AND SCM
32	SOI AND Food Supply Chain
33	SOI AND Food Supply Chain AND HR
34	SOI AND Food Supply Chain AND Jordan
35	SCM and Corporate Entrepreneurship
36	SCM and Intrapreneurship
37	SCM and HR

Appendix B: Participant Letter of Invitation

Version Number: LI1

Date: / /2018/9

Title of Project:	<i>“The Role of Entrepreneurship and Human Resources in Supporting Sustainability-Oriented Innovations in Food Supply Chain Management”</i>
Researcher:	Christine Hattar
Contact Details of Researcher	Email address: Christine.Hattar@Northampton.ac.uk Contact Number: XXXX

Dear Sir or Madam,

This is a letter of invitation to enquire if you would like to take part in a PhD research project regarding the topic of the role of entrepreneurship and Human Resources in supporting sustainability-oriented innovations in food supply chain management, by means of face-to-face interviews, which would last approximately 40-60 minutes to complete.

Before deciding whether you would like to participate, it is very important to understand the purpose of the research project and what it involves. Please read the Participant Information Form thoroughly, kindly find attached. Please do not hesitate to ask for more information or if something is unclear. If you would like to participate in this research project, please complete and return the Consent Form, kindly find attached.

Thank you for your time. If you have any inquiries, please do not hesitate to contact me.

Kind Regards,

Christine Hattar BSc, MSc (Hons), MRes
PhD Candidate
Faculty of Business and Law
University of Northampton
Email: Christine.Hattar@Northampton.ac.uk

Appendix C: Participant Information Form

Version Number: PIF1

Date: / /2018/9

Title of Project:	<i>"The Role of Entrepreneurship and Human Resources in Supporting Sustainability-Oriented Innovations in Food Supply Chain Management"</i>
Researcher:	Christine Hattar
Contact Details of Researcher	Email address: Christine.Hattar@Northampton.ac.uk Contact Number: XXXX

What is the purpose of this research project?

To understand the role of entrepreneurship and HR in supporting Sustainability-Oriented Innovations (SOI) in food supply chain management (SCM) in Jordanian food retailers. This research aims to evaluate SOI in food SCM. The researcher is seeking to capture your thoughts and perspectives towards this topic.

What the study involves?

The study involves, expert interviews and case studies, including interviews, observations, and archival records. The interview will be voice recorded and later transcribed by the researcher. The interview will last roughly 40-60 minutes.

What will happen to me if I take part?

You will sign a consent form declaring that you want to participate voluntarily. You will be asked questions regarding your knowledge to food SCM at your company. Interviews will be recorded and later transcribed by the researcher. The transcripts of the recorded interviews will be sent to you for any feedback. Follow up questions could be asked from you in a later stage in the research project. To continue to secure anonymity, your name will not be mentioned at any point.

Will participation involve any risks, physical discomfort, embarrassment, or harm?

There are no risks in this research project, nor physical discomfort, embarrassment or harm.

What will happen to the information?

The information obtained in the interview will not be shared with any party and will not be used for any other purpose other than research (PhD thesis and future publications of articles in journals and conferences).

What about the confidentiality of the organization?

The organization name nor employee names nor brand names collaborating with the organization will be mentioned. The researcher will make every attempt to guarantee anonymity. Everything will be number coded, encrypted, and saved in a password-protected folder on TUNDRA2 and a second copy on the researchers' personal networked drive at UoN for only the researcher whom will access them through her password-protected computer. Any hard documents of data will be saved in a locked cabinet in a safe place. At the end of the research, all details (name of organization, participants' name, and brand names) will be destroyed.

How will my taking part in this research project be kept confidential?

Your responses to the questions during the interview will be confidential; each interview and interviewee will be number coded to ensure confidentiality of personal identities so it will not be revealed. Interview recordings will also have a code number, will be encrypted, and saved in a password-protected folder on TUNDRA2 and a second copy on the researchers' personal networked drive at UoN on a password-protected computer. Any hard documents of data will be saved in a locked cabinet in a safe place. At the end of the research, the details of the participants will be destroyed.

Not sure about participating? Or Do I have to take part?

Participation is voluntary. It is up to you whether you would like to participate or not.

What will happen if I am unhappy during my participation in this project?

You can request to stop and withdraw any time during the interview and can request to withdraw any data after withdrawing. The interviewee is free to withdraw from this research project at any time during a period of one month from the start date of data collection. The participant can also request to withdraw any data after withdrawing from participation in the project during this period.

Why have I been chosen to participate in this research project?

You have been chosen because of your job position, experience, and/or knowledge in food SCM especially involving network, sustainability, innovation, and entrepreneurship.

Who has checked this research?

This research project has gone through full ethical scrutiny and all procedures have been risk assessed and approved by the Faculty of Business and Law, Research Ethics Committee at the University of Northampton, UK.

What are my contributions and the expected findings of this research project?

- This research's findings are expected to contribute to understand the links between innovation orientation and sustainability orientation for economic, social, and environmental issues in food SCM.
- By conducting expert interviews, your participation in the interview will be very valuable to refine the initial framework (see attached initial framework), for better conducting a case study in the later stage in the research. Expert interviews are also conducted to refine the case study protocol- questions.
- By developing a final conceptual framework, it can be used in future empirical research for organizations to achieve SOI in food SCM.
- Hence, your participation in the case study interviews, observations and archival records will be very valuable to collect the major data in order to understand the links between innovation and sustainability, to provide the final conceptual model of the current study and this will contribute to knowledge, managers, and policy makers.

How do I take part?

Contact the researcher using the contact details given below. She will inform you how to take part and will answer any queries.

Researcher Name: Christine Hattar

Contact Number: Jordan: XXXXX or UK: XXXXX

Email address: Christine.Hattar@Northampton.ac.uk

Appendix D: Consent Form for Retailer

PhD Research –Retailer approval of agreement to conduct research study

Version Number: CF-A

Date: / /2018/9

Title of Project:	<i>“The Role of Entrepreneurship and Human Resources in Supporting Sustainability-Oriented Innovations in Food Supply Chain Management”</i>
Researcher:	Christine Hattar
Contact Details:	Email Address: Christine.Hattar@Northampton.ac.uk Contact Number: XXXX

Our organization confirms that Christine Hattar from the University of Northampton, UK can conduct her research for her PhD study at our organization, with adherence to our organization and the University of Northampton research ethics. This will be in coordination with our human resource department for the support of the research requirements. This authorization will cover the period of 2018 to 2020.

1. We confirm that we have read and understood the information in the Invitation Letter, Participation Information Form and the Consent Form for the participants. We have had the opportunity to ask further questions and have been answered to our satisfaction. Circle: YES/NO
Please Initial
2. We have agreed that the researcher will conduct the research project at our organization, which includes interviews, observations, and relevant archival records on the research project. Circle: YES/NO
Please Initial
3. We freely agree to participate in this research. We understand that our participation is voluntary and that we are free to withdraw from this research project at any time during a period of one month from the start date of data collection. We can also request to withdraw any data after withdrawing from participation in the project during this period. Circle: YES/NO
Please Initial
4. We understand that the participant will have the opportunity to validate their content of the gathered data for any feedback, transcribed by the researcher. Circle: YES/NO
Please Initial
5. Final research findings will be shared with our organization, as this will be an opportunity for us to benefit from the research project. Circle: YES/NO
Please Initial
6. We understand that the research will be published as a PhD thesis, peer-reviewed articles in journals and conferences, without our organization name nor our employee names and brand names attached and the researcher will make every attempt to guarantee our anonymity. Circle: YES/NO
Please Initial
7. We have been given a copy of the participant information sheet and consent form to keep. Circle: YES/NO
Please Initial
8. We have read and fully understand this consent form as it is evidence for our approval of agreement to conduct this research project at our organization. Circle: YES/NO
Please Initial

Name of Organization:

Representative:

Address:

Name of Researcher:

Signature:

Date:

Signature of Researcher:

Appendix E: Consent Form: Expert Interviews/Case Study

Version Number: CF-B

Date: / /2018/9

Title of Project:	<i>"The Role of Entrepreneurship and Human Resources in Supporting Sustainability-Oriented Innovations in Food Supply Chain Management"</i>
Researcher:	Christine Hattar
Contact details of researcher	Email address: Christine.Hattar@Northampton.ac.uk Contact Number: XXXX

1. I have read, and I understand the Participant Information Form [Version number: PIF1 and Date: / /2018/9] and I have had the opportunity to ask further questions and have been answered to my satisfaction. Circle: YES/NO Please Initial
2. I freely agree to participate in this study. I understand that my participation is voluntary and that I am free to withdraw from this research project at any time during a period of one month from the start date of data collection. I can also request to withdraw any data after withdrawing from participation in the project during this period. Circle: YES/NO Please Initial
3. I agree to have my interview voice recorded and later transcribed by the researcher and emailed back to the participant for any feedback. Circle: YES/NO Please Initial
4. I understand that the PhD study will be published as a PhD thesis, peer-reviewed articles in journals and conferences, without my name attached and the researcher will make every attempt to guarantee my anonymity. Circle: YES/NO Please Initial
5. I have been given a copy of the Participant Information Sheet and Consent Form to keep. Circle: YES/NO Please Initial
6. I have read and fully understand this consent form. Circle: YES/NO Please Initial

Name of Organization:

Signature of Participant: _____

Date: _____

Name of Participant:

Signature of Researcher: _____

Name of Researcher:

Appendix F: Expert Interview Protocol-Questions

Section	Questions
Interviewee Information	<ul style="list-style-type: none"> ▪ What is your name? ▪ What is your education? Country of education? ▪ What is your work title? ▪ What is your experience?
Retailer Information	<ul style="list-style-type: none"> ▪ Where is the location of the main retailer building? ▪ How many branches are there? ▪ What is the year the retailer was established?
Food Supply Chain Management	<ol style="list-style-type: none"> 1) How do you define your food SCM? 2) How do you understand SOI (sustainability and innovation)?
Network Factors	<ol style="list-style-type: none"> 3) What are your network factors (activities, resources, actors, etc.) and how do you apply them at the three levels?
Entrepreneurship Factors	<ol style="list-style-type: none"> 4) How do you define an entrepreneur/entrepreneurship? 5) What are the entrepreneurial factors in your food supply chain? 6) What is the role of HR in your food supply chain?
Innovation Factors	<ol style="list-style-type: none"> 7) What are the innovation factors (process, product, and risk taking, etc.) and how do you apply them at the three levels?
Sustainability Factors	<ol style="list-style-type: none"> 8) What are the sustainability factors your retailer is concerned about? and your direct and indirect members? 9) How do you enhance sustainability performance at all three levels?
Initial Conceptual Framework	<ul style="list-style-type: none"> ▪ Would you like to add information on the research project? ▪ Would you like to ask any questions? ▪ To conclude, <i>(provide initial conceptual framework to interviewee)</i> what is your opinion on this framework?

Initial Conceptual Framework
(Insert Initial conceptual framework here)

Appendix G: Case Interview Protocol-Questions

Section	Questions
Interviewee Information (Source of Info.)	<ul style="list-style-type: none"> ▪ What is your name? ▪ What is your education/country? ▪ What is your work title? ▪ What is your experience?
Retailer Information (Case Study)	<ul style="list-style-type: none"> ▪ Where is the location? ▪ How many branches are there? ▪ What is the establishment year?
Food Supply Chain Information (Unit of Analysis)	<ol style="list-style-type: none"> 1. How do you define your food supply chain? 2. What are the key actors in your beef and yogurt supply chain? 3. How does your retailer understand SOI in food supply chains?
Network Factors (Objectives 1 & 3)	<ol style="list-style-type: none"> 4. What are your network factors and your relationship factors to support your network, and as a focal actor, how do you work towards your network? 5. How is the role of the focal actor related to your SOI? 6. How are the relationship (dyads) related to your SOI? 7. How are the network factors related to your SOI? 8. What are the network factors you apply at all three levels?
Entrepreneurship Factors (Objectives 1 & 2)	<ol style="list-style-type: none"> 9. How do you define an entrepreneur/entrepreneurship? 10. How does your entrepreneurial company (i.e. CE) support SOI? 11. How do you think an intrapreneur supports SOI? 12. What is the role of HR in supporting SOI? 13. What are the entrepreneurship factors you apply at all three levels?
Innovation Factors (Objectives 1 & 4)	<ol style="list-style-type: none"> 14. What are the innovation factors (process, product, organizational, etc.)? 15. How is process innovation related to your SOI? 16. How is product innovation related to your SOI? 17. How is organizational innovation related to your SOI? 18. What are the innovation factors you apply at all three levels?
Sustainability Factors (Objectives 1 & 5)	<ol style="list-style-type: none"> 19. What are the sustainability factors your retailer is concerned about? 20. How do you understand environmental sustainability towards SOI? 21. How do you understand social sustainability towards SOI? 22. How do you understand economic sustainability towards SOI? 23. What are the sustainability factors you apply at all three levels?
SOI in SCM (Objectives 1-5)	<ol style="list-style-type: none"> 24. How do you enhance SOI at your retailer, with your direct chain members and across your food supply chain? 25. How does SOI across the supply chain influence sustainability performance?
General Information	<ul style="list-style-type: none"> ▪ Would you like to add information on the research project? ▪ Would you like to ask any questions?
Proposed Conceptual Framework	<ul style="list-style-type: none"> ▪ To conclude, <i>(provide proposed conceptual framework to interviewee)</i> what is your opinion on this framework?

Proposed Conceptual Framework
(Insert proposed conceptual framework here)

Appendix H: Case Observations Protocol

Observations for SC of Retailer X			
Actor Level	Meeting	Duration	
		Observer	
		Organized by	
		Topic	
		What was revealed?	
		Perspective/Theme/contextual factor covered	
	Tour	Duration	
		Observer	
		Organized by	
		Topic	
		What was revealed?	
		Perspective/Theme/contextual factor covered	
Dyad Level	Meeting	Duration	
		Observer	
		Organized by	
		Topic	
		What was revealed?	
		Perspective/Theme/contextual factor covered	
	Tour	Duration	
		Observer	
		Organized by	
		Topic	
		What was revealed?	
		Perspective/Theme/contextual factor covered	
Network Level	Meeting	Duration	
		Observer	
		Organized by	
		Topic	
		What was revealed?	
		Perspective/Theme/contextual factor covered	
	Tour	Duration	
		Observer	
		Organized by	
		Topic	
		What was revealed?	
		Perspective/Theme/contextual factor covered	

Appendix I: Checklist Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers-Case 1-R1

((Author's own work) Adapted from Miles and Huberman, 1994, Miles et al., 2014; Miles et al., 2020)

Case 1- SC of Retailer 1																						
Perspect	Themes	Contextual Factors	Interviewee 1			Interviewee 2			Interviewee 3			Interviewee 4			Interviewee 5			Overall			Observation	Secondary data
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Across SC	Across SC
Network	Actor position	-Position Imbalance	√	√	√	x	x	x	√	√	x	√	√	√	x	x	√	M	M	M		
		-Leadership	x	x	x	√	√	x	√	x	√	x	x	x	√	√	x	M	L	L		
		-Reputation	√	√	√	√	√	√	√	√	x	√	√	x	x	√	√	H	H	M		
		-Brand Image	√	√	√	√	√	x	√	√	√	x	√	√	√	x	x	H	H	M		
		-Commitment	√	√	x	√	x	√	√	√	√	√	√	x	√	√	√	H	H	M		
	Aggregate:																	H	H	M	√√√	√√√
	Activities	-Planning activities	√	x	√	√	√	x	√	√	√	√	√	x	√	√	x	H	H	L		
		-Organizing activities	√	√	√	√	√	x	x	x	x	√	√	√	√	√	√	H	H	M		
		-Controlling activities	x	√	x	√	x	√	√	√	√	√	√	√	x	x	x	M	M	M		
		-Exchange activities	√	√	√	√	√	x	√	√	√	√	√	x	√	√	√	H	H	M		
Aggregate:																	H	H	M	√√√	√√√	
Resources	-Financial resources	√	√	√	√	√	√	√	√	√	√	x	x	√	√	√	H	H	H			
	-Information resources	√	√	x	√	√	√	√	√	√	√	x	√	x	x	x	H	M	M			
		√	√	√	√	x	x	x	x	x	x	√	√	√	√	√	M	M	M			
	-Physical resources	√	X	x	√	√	√	√	√	√	√	√	x	√	√	x	H	H	L			
	-Personnel resources																					
	Aggregate:																	H	M	M	√√√	√√√

Entrepreneurship	Corporate Entrepreneurship	- Stages of implementing innovative ideas	√ x √	x √ √	√ √ √	√ √ √	√ √ √	x x √	√ √ x	x x x	√ √ x	√ x √	√ x √	x √ √	√ x √	√ x √	x √ √	H H M L M	M M M L M	L M M L M				
		- Retailer supports innovation	x √	x √	x √	√ √	√ √	√ √	√ x	√ x	√ x	√ x	√ x	√ x	x x	x x	x x	M L	M L	M L				
		- Retailer provides resources and easy accessibility	√	x	x	x	x	x	√	√	√	√	√	√	√	x	√	√						
		- Retailer structures for an intrapreneurial environment																						
		- Developing individual managers for corporate entrepreneurship																						
		- Culture																						
		Aggregate:																	H	M	M	√√√	√√√	
		Intrapreneurship	- Are innovative and creative	√ √ √	√ √ √	√ √ x	√ x √	√ x √	√ x √	x √ √	x √ √	x √ √	√ √ √	X √ x	√ √ x	√ √ x	√ √ x	√ x √	√ x x	H H H M	M M H M	M M L L		
			- Firm takes the risk and responsibility	√ x	√ x	x x	√ x	√ x	√ x	√ x	√ √	√ √	√ √	√ √	x √	x √	√ √	√ x x	√ x x					
			- Apply firms' management policies and structure																					
- Use of firms' resources efficiently																								
- fixed salary + Bonus/reward (if any)																								
Aggregate:																		H	M	L	√√√	√√√		

	Entrepreneurial HR	- Understand the whole context of their business - Motivate and lead their employees - Driver of success -Entrepreneurial thinking - Good decision makers	√ x x √	√ x x √	√ x x √	x √ √ x	x √ √ x	x √ √ x	√ x x √	√ x x x	√ √ √ x	√ √ x √	√ x x √	√ √ x x	√ x √ x	√ x √ √	H M M M M	H M M M M	H M M M M				
	Aggregate:																	M	M	M	√√√	√√√	
Innovation	Product Innovation	-Staying competitive	√	√	√	√	√	x	√	√	√	√	x	x	√	√	√	H	H	M			
		-Seizing market opportunities	√	√	x	√	√	√	√	√	√	√	√	√	√	√	√	√	H	H	M		
		-Design for sustainability	√	√	√	√	√	√	√	x	x	x	x	√	√	√	x	x	M	M	M		
		-Packaging material	√	√	√	x	x	x	√	√	√	√	√	√	√	√	x	x	H	H	M		
		-Eco-labeling	x	x	x	√	√	√	√	√	√	√	x	x	x	√	√	√	M	M	M		
		-Life-cycle analysis	√	√	√	√	√	√	√	x	x	√	√	√	√	√	√	√	H	H	H		
		-Organic products																					
	Aggregate:																	H	H	M	√√√	√√√	
	Process Innovation	- Managing cost	x	x	x	√	√	√	x	x	x	√	√	√	√	√	√	M	M	M			
		- Adopting environmentally-friendly technologies	√	√	√	√	√	√	√	√	√	√	√	√	√	x	x	x	H	H	M		
- To raise industry standards in line with environmental performance		x	x	x	x	x	x	√	√	√	√	√	√	√	√	√	√	M	M	M			
- Response to external pressures and regulatory changes		√	√	√	√	√	√	√	√	x	√	√	√	√	√	x	x	H	H	M			
- Handling waste		√	√	√	√	√	√	√	√	√	x	x	x	√	√	√	H	H	M				
- Logistics																							
Aggregate:																	H	H	M	√√√	√√√		

Sustainability	Organizational Innovation	- Certificates	√	x	x	√	√	√	√	√	√	√	√	√	√	√	√	H	H	H		
		- Stakeholders management	√	√	√	x	x	x	√	√	√	√	√	√	√	x	x	H	M	M		
		- Engaging employees in developing a sustainable business	√	√	√	√	√	√	√	x	x	x	x	x	√	√	√	H	H	M		
		- Health and safety issues	√	√	√	√	√	√	x	x	x	√	√	√	x	x	x	H	M	M		
		- Sustainability vision	x	x	x	x	x	x	√	√	√	√	√	√	√	√	√	M	M	M		
		- Code of conduct	x	x	x	√	√	√	x	x	x	√	√	√	x	x	x	L	L	L		
		- Environmental policy																				
		Aggregate:																H	M	M	√√√	√√√
Sustainability	Environme	- Managing water	x	x	x	√	√	√	x	x	x	√	√	x	√	√	√	M	M	L		
		- Energy control	√	√	x	√	√	√	√	√	√	√	√	√	x	x	x	H	H	M		
		- Recycling	√	√	√	x	x	x	√	√	x	√	√	x	√	√	√	H	H	L		
		- Environmental awareness	√	√	√	√	√	x	√	√	√	√	x	x	√	√	√	H	H	M		
	Aggregate:																	H	H	M	√√√	√√√
	Social	- Trainings and workshops	√	√	x	√	√	√	√	√	√	√	x	√	√	√	√	H	H	H		
		- Social events	√	√	√	x	x	x	√	√	√	√	x	x	√	√	√	H	M	M		
		- Diversity	√	√	√	√	√	x	√	√	√	x	x	x	x	x	x	M	M	L		
		- Community impact	x	x	x	√	√	x	√	√	√	√	√	x	√	x	x	H	M	L		
Sustainability	Social	- Safe and fair labor conditions	√	√	√	√	x	x	√	x	x	√	√	√	√	x	x	H	L	L		
		- Employee benefits	√	√	√	√	√	√	√	√	√	√	x	x	√	√	√	H	M	M		
		- Truthful product labeling and descriptions	x	x	x	√	√	√	x	x	x	√	√	√	√	√	√	M	M	M		
		- Customer health and safety																				
	Aggregate:																	H	M	M	√√√	√√√

Economic	- Profitability and Tax	√	√	x	√	√	√	√	x	√	√	√	√	√	√	√	√	H	H	H		
	- Economic interests of external stakeholder	√	√	√	√	√	x	√	√	√	√	√	√	√	√	√	x	H	H	M		
	- Competitive procurement	x	x	x	√	√	x	√	√	√	x	x	x	√	√	√	√	M	M	L		
	- Customer satisfaction	√	√	√	√	√	x	√	√	√	√	√	√	x	x	x	x	H	H	M		
	- Efficient production and packaging	√	√	x	x	x	x	√	√	√	x	x	x	√	√	√	√	M	M	L		
Aggregate:																		H	H	M	√√√	√√√

√: Contextual factor is used in orientation to SOI

√-: Contextual factor is used in less orientation to SOI

X: no comment/NA

H: Contextual factor has high orientation to SOI (At least √√√ responses)

M: Contextual factor has moderate orientation to SOI (Equal √√ responses)

L: Contextual factor has low orientation to SOI (Up to √ responses)

√√√: Observations and Secondary Data are consistent with the findings in the interviews at each level (actor, dyad and network level)

Appendix J: Checklist Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers-Case 2-R2

((Author's own work) Adapted from Miles and Huberman, 1994, Miles et al., 2014; Miles et al., 2020)

Case 2- Retailer 2																						
Perspecti	Themes	Contextual Factors	Interviewee 1			Interviewee 2			Interviewee 3			Interviewee 4			Interviewee 5			Overall			Obse rvatio n	Secon dary data
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Across SC	Across SC
Network	Actor	-Position Imbalance	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	N/A	N/A	N/A		
		-Leadership	√	√	x	√	√	√	x	x	x	x	x	x	x	x	x	L	L	L		
		-Reputation	√	√	x	√	x	x	√	x	x	√	√	√	√	√	√	H	M	L		
		-Brand Image	√	√	√	√	√	√	√	√	√	√	√	x	√	x	x	H	M	M		
		-Commitment	√	√	√	√	x	√	√	√	x	x	x	x	√	√	√	H	M	M		
	Aggregate:																	H	M	M	√√√	√√√
	Activities	-Planning activities	√	√	√	x	x	x	x	x	x	√	√	√	√	√	x	M	M	L		
		-Organizing activities	x	x	x	√	√	√	√	√	√	x	x	x	x	x	x	L	L	L		
		-Controlling activities	√	√	√	√	√	x	x	x	x	x	x	x	√	√	√	M	M	L		
		-Exchange activities	√	x	x	√	√	√	√	√	√	√	√	√	√	x	x	H	M	M		
	Aggregate:																	M	M	L	√√√	√√√
	Resources	-Financial resources	√	√	x	√	√	√	√	√	√	√	√	√	√	x	x	H	H	M		
		-Information resources	x	x	x	√	√	√	x	x	x	√	√	√	√	√	x	M	M	L		
		-Physical resources	√	√	x	x	x	x	√	√	√	x	x	x	√	√	√	M	M	L		
		-Personnel resources	x	x	x	x	x	x	x	x	x	√	√	√	√	√	√	L	L	L		
	Aggregate:																	M	M	L	√√√	√√√

	Entrepreneurial HR	- Understand the whole context of their business	√	x	x	√	√	√	x	x	x	√	√	x	x	x	x	M	L	L			
			√	√	√	x	x	x	√	√	√	x	x	x	√	√	x	M	M	L			
			√	√	√	√	√	x	x	x	x	√	√	√	x	x	x	M	M	L			
			√	√	√	√	√	√	x	x	x	x	x	x	√	√	√	M	M	M			
			√	√	√				√	x	x		√	√		x	x		M	L	L		
			- Driver of success																				
		- Entrepreneurial thinking																					
		- Good decision makers																					
	Aggregate:																	M	M	L	√√√	√√√	
Innovation	Product Innovation	-Staying competitive	√	√	√	√	√	√	√	√	x	√	√	√	x	x	x	M	M	L			
		-Seizing market opportunities	√	√	√	√	√	x	√	√	√	x	x	x	√	√	√	M	M	L			
			x	x	x	x	x	x	√	√	√	√	√	√	√	√	x	M	M	L			
		-Design for sustainability	√	√	√	√	√	√	x	x	x	x	x	x	√	√	x	M	M	L			
			x	x	x	√	√	√	x	x	x	x	x	x	x	x	x	L	L	L			
		-Packaging material	x	x	x	x	x	x	√	√	√	√	√	√	√	√	x	√	M	L	M		
		-Eco-labeling	√	√	√	√	√	√	√	√	x		√	√	√	x	x	H	H	M			
		-Life-cycle analysis																					
		-Organic products																					
		Aggregate:																	M	M	L	√√√	√√√
Process Innovation	- Managing cost	√	√	√	x	x	x	x	x	x	√	√	√	√	√	√	M	M	M				
	- Adopting environmentally-friendly technologies	√	√	√	√	√	√	√	√	x	x	x	x	x	x	x	M	M	L				
		x	x	x	√	√	√	√	x	x	x	√	√	√	x	x	x	M	L	L			
		√	√	x	√	x	x	√	√	√	√	√	√	√	√	√	√	H	H	M			
		√	√	√	x	x	x	x	x	x	√	√	√	√	√	√	x	M	M	L			
	- To raise industry standards in line with environmental performance	x	x	x	√	√	√	√	√	√		x	x	x	√	√	x	M	M	L			
	- Response to external pressures and regulatory changes																						
	- Handling waste																						
	- Logistics																						
	Aggregate:																	M	M	L	√√√	√√√	

	Organizational Innovation	- Certificates	√	√	√	√	√	√	√	√	x	√	√	√	√	√	√	H	H	H		
		- Stakeholders management	√	√	x	√	√	√	√	√	√	√	x	x	√	√	√	H	H	M	M	
		- Engaging employees in developing a sustainable business	x	x	x	√	x	x	√	√	√	√	√	√	√	x	x	H	M	M	M	
		- Health and safety issues	√	√	√	x	x	x	√	√	√	x	x	x	√	√	√	M	M	L	L	
		- Sustainability vision	x	x	x	√	√	√	x	x	x	√	√	x	x	x	x	L	L	L	L	
		- Code of conduct	√	√	√	x	x	x	x	x	x	x	x	x	x	x	x	L	L	L	L	
		- Environmental policy	√	√	√	x	x	x	x	x	x	x	x	x	x	x	x	L	L	L	L	
	Aggregate:																	H	M	M	√√√	√√√
Sustainability	Environme	- Managing water	√	√	√	√	√	√	√	√	x	√	√	x	x	x	x	H	H	L		
		- Energy control	√	√	√	√	x	x	√	x	x	√	√	x	√	√	x	M	M	L		
		- Recycling	√	√	√	√	√	√	√	x	x	√	√	x	√	√	√	H	H	M		
		- Environmental awareness	x	x	x	√	√	√	√	√	√	√	√	x	√	√	x	H	H	L		
	Aggregate:																	H	H	L	√√√	√√√
	Social	- Trainings and workshops	x	x	x	√	√	√	x	x	x	√	√	√	√	√	x	M	M	L		
		- Social events	√	√	√	x	x	x	√	√	√	√	x	x	√	x	x	H	L	L		
		- Diversity	x	x	x	√	√	√	√	√	√	√	√	√	√	√	√	M	M	L		
		- Community impact	√	√	√	√	√	√	x	x	x	√	√	x	√	√	x	M	M	L		
		- Safe and fair labor conditions	√	x	x	√	x	x	√	√	x	√	x	x	√	√	√	H	L	L		
		- Employee benefits	√	√	√	x	x	x	x	x	x	x	x	x	x	x	x	L	L	L		
		- Truthful product labeling and descriptions	√	√	√	x	x	x	√	√	√	√	√	x	x	x	x	M	M	L		
		- Customer health and safety	√	√	√	x	x	x	√	√	√	√	√	x	x	x	x	M	M	L		
	Aggregate:																	M	M	L	√√√	√√√

	Economic	- Profitability and Tax	√	√	x	√	√	√	√	√	x	√	x	x	√	√	√	H	H	M		
			√	x	√	√	√	√	√	√	√	√	√	√	√	√	x	H	H	H		
		- Economic interests of external stakeholder	x	x	x	x	x	x	√	√	x	√	√	√	x	x	x	L	L	L		
			√	√	√	x	x	x	√	x	x	√	√	x	√	√	√	H	M	L		
			x	x	x	√	√	x	√	√	√	x	√	x	√	√	√	M	H	L		
		- Competitive procurement																				
		- Customer satisfaction																				
		- Efficient production and packaging																				
	Aggregate:																	H	H	L	√√√	√√√

- √: Contextual factor is used in orientation to SOI
- √-: Contextual factor is used in less orientation to SOI
- X: no comment/NA
- H: Contextual factor has high orientation to SOI (At least √√√√ responses)
- M: Contextual factor has moderate orientation to SOI (Equal √√√ responses)
- L: Contextual factor has low orientation to SOI (Up to √√ responses)
- √√√: Observations and Secondary Data are consistent with the findings in the interviews at each level (actor, dyad and network level)

Appendix K: Checklist Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers-Case 3-R3

((Author's own work) Adapted from Miles and Huberman, 1994, Miles et al., 2014; Miles et al., 2020)

Case 3- Retailer 3

Perspecti	Themes	Contextual Factors	Interviewee 1			Interviewee 2			Interviewee 3			Interviewee 4			Interviewee 5			Overall			Observation	Secondary data
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Across SC	Across SC
Network	Actor position	-Position	x	x	x	√-	√-	x	√-	√-	x	x	x	x	√-	√-	√-	L	L	L		
		Imbalance	x	x	x	x	x	x	√	√	√	√	√	√	√	x	x	M	L	L		
		-Leadership	√	x	x	√	√	√	√	√	x	√	√	√	√	x	x	H	M	L		
		-Reputation	√	√	√	√	√	x	√	x	x	√	x	x	√	√	√	H	M	L		
		-Brand Image	√	x	x	x	x	x	√	√	√	√	√	√	√	√	√	H	M	M		
		-Commitment																				
	Aggregate:																	H	M	L	√√√	√√√
	Activities	-Planning activities	x	x	x	√	√	√	√	√	x	√	√	x	x	x	x	M	M	L		
		-Organizing activities	√	√	√	x	x	x	x	x	x	√	√	x	√	√	√	M	M	L		
		x	x	x	x	√	√	x	√	√	√	√	√	√	x	x	x	M	M	L		
		-Controlling activities	√	√	√	√	√	√	√	x	x	√	x	x	√	x	x	H	L	L		
	Aggregate:																	M	M	L	√√√	√√√
	Resources	-Financial resources	√	√	√	√-	x	x	√	√	x	√	√	√	√	√	√	H	H	M		
		√	√	√	√	√	√	x	x	x	x	x	x	x	x	x	x	L	L	L		
		-Information resources	x	x	x	√	√	√	√	√	√	x	x	x	√	√	x	M	M	L		
		x	x	x	x	√	√	x	√	√	√	√	√	√	x	x	x	M	M	L		
	Aggregate:																	M	M	L	√√√	√√√

Entrepreneurship	Corporate Entrepreneurship	- Stages of implementing innovative ideas	x √ √	x √ √	x √ x	√ x √	√ x √	√ x √	x √ x	x √ x	x √ x	√ √ x	√ √ x	√ x x	√ √ x	√ x √	x x √	M H M	M M M	L L L		
		- Retailer supports innovation	√	√	√	√	x	x	√	√	x	√	√	√	x	x	x	H	M	L		
		- Retailer provides resources and easy accessibility	x	x	x	x	x	x	√	√	√	x	x	x	√	√	x	L	L	L		
		- Retailer structures for an intrapreneurial environment	√-	√-	√-	√-	√-	x	√	x	x	√-	√-	√-	x	x	x	L	L	L		
		- Developing individual managers for corporate entrepreneurship																				
		- Culture																				
	Aggregate:																	M	M	L	√√√	√√√
	Intrapreneurship	- Are innovative and creative	√ x	√ x	√ x	√ √	x √	x √	x √	x x	x x	√ √	√ √	x √	√ x	√ x	√ x	M M	M L	L L		
		- Firm takes the risk and responsibility	√	√	x	√	√	x	√	√	√	x	x	x	√	x	x	H	M	L		
		- Apply firms' management policies and structure	√	√	√	√	√	x	√	√	√	x	x	x	√	x	x	H	M	L		
		- Use of firms' resources efficiently	√-	x	x	√	√	√	x	x	x	√-	x	x	x	x	x	L	L	L		
		- fixed salary + Bonus/reward (if any)																				
	Aggregate:																	M	M	L	√√√	√√√

	Entrepreneurial HR	- Understand the whole context of their business - Motivate and lead their employees - Driver of success - Entrepreneurial thinking - Good decision makers	√- √ x √ √	√- √ x √ √	x √ x √ √	x √ x x √	x √ x x √	√ x √ √ x	√ x √ x x	√ x √ x x	√- √ √ √ x	x √ √ √ x	x √ √ √ x	√ x √ x √	√ x √ x x	√ x x x x	L M M M M	L M M L L	L L L L L			
	Aggregate:																	M	L	L	√√√	√√√
Innovation	Product Innovation	-Staying competitive	√ √ x √ x x √	√ √ x √ x x √	√ x √ x x x √	√ √ √ x √ x x	x √ x x x x x	x x √ x √ √ √	x x √ x √ √ x	x x √ x √ √ x	√ √ √ √ x x x	√ x √ √ √ x x	√ x √ √ x x x	√ √ x √ √ √ √	x √ x √ x x √	x √ x √ √ √ √	H H M M L M M	M M M M L L M	L L L L L M L			
		-Seizing market opportunities	x √ √ x x √	x √ √ x x √	x √ √ x x √	√ √ √ x √ x x	x √ x x x √ x	√ √ √ x √ √ x	√ √ √ x √ √ x	√ √ √ x √ √ x	√ x √ √ x x x	√ x √ √ x x x	√ x √ √ x x x	√ x √ √ x x x	√ x √ √ x x x	x x x √ √ √ √	M M M M L M M	M M M M L L M	L L L L L M L			
		-Design for sustainability	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	x x x x √	M M M M L M M	L L L L L M M	L L L L L M L		
		-Packaging material	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	M M M M L M M	M M M M L L M	L L L L L M L		
		-Eco-labeling	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	M M M M L M M	M M M M L L M	L L L L L M L		
	Aggregate:																	M	M	L	√√√	√√√
Innovation	Process Innovation	- Managing cost	√ x x √ x √	√ x x √ x √	√ x x √ x x	√ √ √ √ x x	√ √ √ x x x	√ √ √ x x x	x √ √ √ √ √	x x x x √ √	x x x x √ √	x √ √ √ √ √	x √ √ √ √ √	x √ √ √ √ √	x √ √ √ √ √	x √ √ √ √ √	x √ √ √ √ √	L H L M M M	L M L L L M	L M L L L L		
		- Adopting environmentally-friendly technologies	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	√ x x x x √	M M M M L M	L L L L L M	L L L L L L		
		- To raise industry standards in line with environmental performance	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	M M M M L M	M M M M L M	L L L L L L		
		- Response to external pressures and regulatory changes	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	M M M M L M	M M M M L M	L L L L L L		
		- Handling waste	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	√ x x x x x x	M M M M L M	M M M M L M	L L L L L L	
	Aggregate:																	M	L	L	√√√	√√√

		Organizational Innovation	- Certificates	√	√	x	√	√	√	√	√	√	√	√	√	√	√	H	H	H		
			- Stakeholders management	√	√	√	x	x	x	√	√	√	√	x	x	x	x	M	M	L		
			- Engaging employees in developing a sustainable business	√	√	√	x	x	x	√	x	x	√	x	√	√	√	H	M	L		
			- Health and safety issues	x	x	x	√	√	√	√	x	x	√	√	√	x	x	M	M	M		
			- Sustainability vision	√	√	√	√	x	x	x	√	x	√	√	√	√	√	M	M	M		
			- Code of conduct	x	x	x	√	√	√	√	√	x	x	x	√	x	x	H	M	L		
			- Environmental policy																			
	Aggregate:																	M	M	L	√√√	√√√
Sustainability	Environme	- Managing water	√	√	x	x	x	x	x	x	√	√	√	√	√	√	√	M	M	L		
		- Energy control	x	x	x	√	√	√	√	√	√	x	x	x	√	x	x	M	L	L		
		- Recycling	√	x	x	√	√	√	√	√	√	√	√	x	x	x	x	H	M	L		
		- Environmental awareness	√	√	√	x	x	x	x	x	x	√	√	√	√	√	√	M	M	L		
	Aggregate:																	M	M	L	√√√	√√√
	Social	- Trainings and workshops	√	√	√	x	x	x	√	√	√	√	√	√	√	√	√	H	H	H		
		- Social events	√-	√-	x	√-	√-	x	√-	√-	√-	√-	x	x	√-	x	x	L	L	L		
		- Diversity	√	√	x	√	√	√	√	√	x	x	x	x	x	x	x	M	L	L		
		- Community impact	√	√	x	x	x	x	√	√	√	√	√	√	√	√	√	M	M	L		
		- Safe and fair labor conditions	x	x	x	x	x	x	√	√	√	√	√	√	√	√	√	M	L	L		
- Employee benefits		√	√	√	√	x	x	x	x	x	x	x	x	√	√	√	M	L	L			
		- Truthful product labeling and descriptions																				
		- Customer health and safety																				
Aggregate:																	M	L	L	√√√	√√√	

	Economic	- Profitability and Tax	√	√	√	√	√	√	x	x	x	√	√	√	√	√	x	H	H	M		
		- Economic interests of external stakeholder	√	√	√	x	x	x	x	x	x	√	√	√	√	√	√	M	M	M		
		- Competitive procurement	x	x	x	x	x	x	√	√	x	x	x	x	√	√	√	L	L	L		
		- Customer satisfaction	x	x	x	√	√	√	√	√	√	x	x	x	√	√	√	M	M	M		
		- Efficient production and packaging	√	√	√	√	√	x	x	x	x	√	√	√	x	x	x	M	M	L		
	Aggregate:																	M	M	M	√√√	√√√

- √: Contextual factor is used in orientation to SOI
- √-: Contextual factor is used in less orientation to SOI
- X: no comment/NA
- H: Contextual factor has high orientation to SOI (At least √√√√ responses)
- M: Contextual factor has moderate orientation to SOI (Equal √√√ responses)
- L: Contextual factor has low orientation to SOI (Up to √√ responses)
- √√√: Observations and Secondary Data are consistent with the findings in the interviews at each level (actor, dyad and network level)

Appendix L: Checklist Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers-Case 4-R4

((Author's own work) Adapted from Miles and Huberman, 1994, Miles et al., 2014; Miles et al., 2020)

Case 4- Retailer 4																						
Perspect	Themes	Contextual Factors	Interviewee 1			Interviewee 2			Interviewee 3			Interviewee 4			Interviewee 5			Overall			Observation	Secondary data
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Across SC	Across SC
Network	Actor	-Position Imbalance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	H	H	H		
		-Leadership	✓	✓	x	✓	✓	✓	✓	✓	✓	x	x	x	x	x	x	M	M	L		
		-Reputation	✓	✓	✓	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	H	H	M		
		-Brand Image	✓	✓	✓	✓	✓	✓	✓	✓	x	✓	✓	✓	✓	✓	✓	H	H	M		
		-Commitment	✓	✓	✓	✓	✓	x	x	x	x	✓	✓	✓	✓	✓	✓	H	H	M		
	Aggregate:																	H	H	M	✓✓✓	✓✓✓
	Activities	-Planning activities	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	✓	✓	✓	H	H	M		
		-Organizing activities	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	H	H	M		
		-Controlling activities	✓	✓	✓	✓	✓	x	x	x	x	x	x	x	✓	✓	✓	M	M	L		
		-Exchange activities	x	x	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	H	H	M		
Aggregate:																	H	H	M	✓✓✓	✓✓✓	
Resources	-Financial resources	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	✓	✓	x	✓	H	M	M			
	-Information resources	✓	✓	✓	✓	✓	✓	x	x	x	✓	x	✓	✓	✓	✓	H	M	M			
	-Physical resources	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	H	H	M			
	-Personnel resources	x	x	x	✓	✓	✓	✓	✓	✓	x	x	x	✓	✓	✓	M	M	L			
	Aggregate:																	H	M	M	✓✓✓	✓✓✓

Entrepreneurship	Corporate Entrepreneurship	- Stages of implementing innovative ideas	√ √ √	√ √ √	√ x x	√ √ √	x √ x	√ √ √	√ √ x	√ √ √	√ √ √	x √ √	x √ √	√ √ x	√ x x	√ √ x	H H H	H H H	M M L		
		- Retailer supports innovation	√	√	√	√	√	√	x	√	√	x	x	√	√	√	H	M	L		
		- Retailer provides resources and easy accessibility	x	x	x	x	x	x	√	√	√	√	x	√	√	√	M	M	L		
		- Retailer structures for an intrapreneurial environment	√/-	√/-	x	√	√	√	√	√	√	√	√	√	√	x	H	H	M		
		- Developing individual managers for corporate entrepreneurship																			
Aggregate:																	H	H	M	√√√	√√√
Entrepreneurship	Intrapreneurship	- Are innovative and creative	√ √	√ √	√ √	x √	x √	x √	√ √	√ x	√ √	√ √	√ x	√ √	x √	x √	H H	M M	M M		
		- Firm takes the risk and responsibility	x	x	x	x	x	x	√	√	√	√	√	√	√	x	M	M	L		
		- Apply firms' management policies and structure	√	√	√	x	x	x	√	√	√	x	x	√	√	x	M	M	L		
		- Use of firms' resources efficiently								x				x	x	x	H	M	M		
		- fixed salary + Bonus/reward (if any)																			
Aggregate:																	H	M	M	√√√	√√√

	Entrepreneurial HR	- Understand the whole context of their business - Motivate and lead their employees - Driver of success -Entrepreneurial thinking - Good decision makers	√ x √ √	√ x √ √	√ x √ √	√ x √ √	√ x √ √	√ x √ √	√ x x x	√ x √ x	x x x x	√ x √ √	√ x √ √	√ x x x	x √ √ √	x x √ √	x √ √ √	H M M H	H M M H	M L L M		
	Aggregate:																	H	H	M	√√√	√√√
	Product Innovation	-Staying competitive -Seizing market opportunities -Design for sustainability -Packaging material -Eco-labeling -Life-cycle analysis -Organic products	√ √ √ x √ √	√ √ √ x √ √	√ x √ x √ √	√ √ x √ √ √	√ √ x √ √ x	√ √ x √ √ √	√ √ x √ x √	x √ x √ x x	√ √ x √ √ √	√ √ x x √ √	√ √ x x √ √	√ x x x √ √	√ √ √ √ x x	√ √ √ √ x x	x √ x √ x x	H H H M M M H	H H H M M M H	M M L L L M M		
	Aggregate:																	H	H	M	√√√	√√√
Innovation	Process Innovation	- Managing cost - Adopting environmentally-friendly technologies - To raise industry standards in line with environmental performance - Response to external pressures and regulatory changes - Handling waste - Logistics	x √ √ √ √	x √ x √ √	x √ x √ x	x √ x √ √	x x √ x √	√ √ √ √ √	√ x √ x √	√ x √ x x	√ x √ x x	√ x √ x x	√ x √ x x	√ x x √ x	√ x x √ √	√ x x √ √	x √ x x x √	M H M H H	M M L M L H	L M L M L L		
	Aggregate:																	H	M	L	√√√	√√√

	Organizational Innovation	- Certificates	√	√	√	√	√	x	√	√	√	√	√	√	√	√	√	H	H	H		
		- Stakeholders management	√	√	x	√	√	√	x	x	x	√	√	√	√	√	√	H	H	M		
		- Engaging employees in developing a sustainable business	√	√	√	√	√	x	√	√	√	√	√	x	√	√	√	H	H	M		
		- Health and safety issues	√	√	√	x	x	x	√	√	x	x	x	x	√	√	√	M	M	M		
		- Sustainability vision	√	√	√	√	√	x	√	√	√	x	x	x	√	√	√	M	M	L		
		- Code of conduct	√	√	√	√	√	x	√	√	√	x	x	x	x	x	x	M	M	L		
		- Environmental policy	√	√	x	x	x	x	x	x	x	√	√	√	√	√	√	M	M	L		
		Aggregate:																	H	H	M	√√√
Sustainability	Environme	- Managing water	x	x	x	√	√	√	√	√	x	x	x	x	√	√	√	M	M	L		
		- Energy control	√	√	√	√	√	x	√	x	x	√	√	√	√	√	√	H	H	M		
		- Recycling	√	x	√	√	√	√	√	√	√	√	√	x	√	√	x	H	H	M		
		- Environmental awareness	√	√	√	√	√	x	√	√	√	√	√	√	x	x	x	H	H	M		
	Aggregate:																	H	H	M	√√√	√√√
	Social	- Trainings and workshops	√	√	√	√	√	√	√	√	x	√	√	√	√	√	√	H	H	H		
		- Social events	√	x	√	√	√	√	√	√	x	√	x	x	√	x	x	H	M	L		
		- Diversity	√	√	√	√	x	x	√	√	√	√	√	√	√	√	√	H	M	M		
		- Community impact	√	√	√	√	√	√	√	√	√	√	√	√	√	√	x	M	M	L		
		- Safe and fair labor conditions	x	x	x	x	x	x	√	x	√	√	√	x	√	√	√	M	L	L		
- Employee benefits		√	x	√	√	√	x	√	√	√	x	x	x	x	x	x	M	L	L			
Aggregate:																	H	M	L	√√√	√√√	

	Economic	- Profitability and Tax	√	√	√	√	√	√	√	√	√	√	√	√	√	√	x	H	H	H		
		- Economic interests of external stakeholder	√	√	√	x	x	x	x	x	x	√	√	√	√	√	x	H	H	M		
		- Competitive procurement	√	x	x	√	√	√	√	√	√	√	√	√	√	√	x	H	H	M		
		- Customer satisfaction	√	√	x	√	√	√	√	x	x	√	√	x	√	x	√	H	M	L		
		- Efficient production and packaging																				
	Aggregate:																	H	H	M	√√√	√√√

√: Contextual factor is used in orientation to SOI

√-: Contextual factor is used in less orientation to SOI

X: no comment/NA

H: Contextual factor has high orientation to SOI (At least √√√√ responses)

M: Contextual factor has moderate orientation to SOI (Equal √√√ responses)

L: Contextual factor has low orientation to SOI (Up to √√ responses)

√√√: Observations and Secondary Data are consistent with the findings in the interviews at each level (actor, dyad and network level)

Appendix M: Checklist Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers-Case 5-R5

((Author's own work) Adapted from Miles and Huberman, 1994, Miles et al., 2014; Miles et al., 2020)

Case 5- Retailer 5																						
Perspecti	Themes	Contextual Factors	Interviewee 1			Interviewee 2			Interviewee 3			Interviewee 4			Interviewee 5			Overall			Observation	Secondary data
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Across SC	Across SC
Network	Actor position	-Position	√-	√-	√-	√-	√-	√-	√-	√-	√-	√-	√-	√-	√-	√-	√-	L	L	L		
		Imbalance	x	x	x	√	√	√	√-	√-	√-	√-	√-	√-	√-	√-	√-	L	L	L		
		-Leadership	√	√	√	√	√	√	√	√	x	√	√	√	√	√	x	H	H	M		
		-Reputation	√	√	√	√	√	x	√	√	√	√	√	x	√	√	√	H	H	M		
		-Brand Image	√	√	√	x	x	x	√	√	x	√	√	√	x	x	x	M	M	L		
		-Commitment																				
	aggregate:																	M	M	L	√√√	√√√
	Activities	-Planning activities	√	√	√	√	√	x	x	x	x	√	√	√	x	x	x	M	M	L		
		-Organizing activities	√	√	x	x	x	x	√	√	√	x	x	x	√	√	√	M	M	L		
		activities	x	x	x	√	x	√	x	x	x	x	x	x	√	√	x	L	L	L		
		-Controlling activities	√	√	x	√	√	√	√	√	√	√	√	√	√	x	x	H	H	M		
	aggregate:																	M	M	L	√√√	√√√
	Resources	-Financial resources	√-	x	x	√-	√-	√-	√-	√-	√-	√-	√-	√-	√-	x	x	L	L	L		
		-Information resources	√	√	√	x	x	x	√	√	x	x	√	√	x	x	x	M	M	L		
		resources	x	x	x	√-	x	√-	x	x	x	x	x	x	√-	√-	x	L	L	L		
		-Physical resources																				
	aggregate:																	M	M	L	√√√	√√√
	Aggregate:																	M	M	L	√√√	√√√

Entrepreneurship	Corporate Entrepreneurship	- Stages of implementing innovative ideas	√	√	√	√	√	x	√	x	x	√	x	√	√	x	x	H	L	L			
			√-	√-	√-	√	√	√	√	√	√	√-	√-	√-	√-	√-	√-	L	L	L			
		- Retailer supports innovation	√-	√-	x	√-	x	x	√-	√-	x	√-	x	x	x	√-	√-	x	L	L	L		
			√	√	√	x	x	x	√	√	x	x	x	x	x	x	x	L	L	L			
		- Retailer provides resources and easy accessibility	√-	√-	√-	√	√	√	√-	√-	√-	√	√	√	√	x	x	x	L	L	L		
	Intrapreneurship	- Retailer structures for an intrapreneurial environment																					
		- Developing individual managers for corporate entrepreneurship																					
		- Culture																					
		Aggregate:																	L	L	L	√√√	√√√
Intrapreneurship	- Are innovative and creative	x	x	x	√	x	√	x	x	x	√	√	√	√	√	x	H	L	L				
		√	x	x	√	√	√	√	x	x	√	√	x	√	√	√	H	M	L				
	- Firm takes the risk and responsibility	√	√	x	√	√	x	√	√	√	x	x	x	√	x	√	M	M	L				
		x	x	x	√-	x	x	√-	√-	√-	√-	√-	√-	√-	x	x	L	L	L				
	- Apply firms' management policies and structure	√-	√-	√-	√-	√-	√-	√-	√-	√-	√-	x	x	√-	x	x	L	L	L				
Intrapreneurship	- Use of firms' resources efficiently																						
	- fixed salary + Bonus/reward (if any)																						
	Aggregate:																	M	L	L	√√√	√√√	

	Entrepreneurial HR	- Understand the whole context of their business - Motivate and lead their employees - Driver of success - Entrepreneurial thinking - Good decision makers	x √ √- √- √-	x √ √- √- √-	x √ x √- x	√ √- √- √- √	√ √- √- x √	√ √- √- √ √	√ √- x x √	√ x √ x x	x √ x x √	x x x x x	x √ √ √ √	x √ √ x √	x √ x √ √	L M M M M	L L L L M	L L L L L		
	Aggregate:															M	L	L	√√√	√√√
Innovation	Product Innovation	-Staying competitive -Seizing market opportunities -Design for sustainability -Packaging material -Eco-labeling -Life-cycle analysis -Organic products	√ x √ √- x √ √	√ x √- √ x x √	x x √ x x x √	√ √ √ √ √ √ √	x √ x x x x x	x x √ √ √ x √	x x √ √ x x x	√ √ x x √ √ √	√ √ x x √ √ √	√ x x x x x x	√ √ x √ x x √	x √ x x x x x	√ √ x x x x √	H H M M M M H	M M L L L L M	L L L L L L M		
	Aggregate:															M	L	L	√√√	√√√
	Process Innovation	- Managing cost - Adopting environmentally-friendly technologies - To raise industry standards in line with environmental performance - Response to external pressures and regulatory changes - Handling waste - Logistics	√ x √ √ √ √	√ x √ x x √	√ x √ x x x	√ x x √ x √	x √ √ √ √ x	x √ √ √ √ x	x √ x √ x x	x √ √ √ √ √	x x x x x √	√ √ x √ √ √	√ √ x √ √ √	x √ x x x x	√ √ x √ √ x	M M M M H H	M L L M M M	L L L M M L		
	Aggregate:															M	M	L	√√√	√√√
	Aggregate:															M	M	L	√√√	√√√

	Organizational Innovation	- Certificates	√	√	√	√	√	√	√-	x	√-	√-	√-	√-	√	x	√	M	L	M		
		- Stakeholders management	√	√	√	√	x	√	x	x	x	√	√	x	√	√	x	x	M	L	L	
		- Engaging employees in developing a sustainable business	√	√	√	√	√	x	x	x	x	√	x	√	√	√	√	H	M	M		
		- Health and safety issues	√-	√-	√-	√	√	x	√	√	x	√-	√-	√-	√	√	√	M	M	L		
		- Sustainability vision	√	√	√	√	√	x	√-	√-	√-	√-	√-	x	x	x	L	L	L			
		- Code of conduct	x	x	x	√-	√-	x	√	√	√	√	√	√	√-	√-	√-	L	L	L		
		- Environmental policy																				
	Aggregate:																	M	L	L	√√√	√√√
	Environme	- Managing water	√	√	√	√-	√-	√-	x	x	x	x	x	x	√	√	x	L	L	L		
		- Energy control	√	√	√	√	√	√	√-	x	x	√	√	x	√-	x	x	M	M	M		
		- Recycling	√	x	x	√	x	x	√	√	√	√	√	√	√	√	√	H	M	M		
		- Environmental awareness	x	x	x	√	√	x	X	x	X	√	√	√	√	√	√	M	M	M		
	Aggregate:																	M	M	M	√√√	√√√
	Sustainability	- Trainings and workshops	√	√	√	√	√	√	x	x	x	√	x	√	√	√	x	H	M	M		
- Social events		√-	x	x	√-	√-	√-	√-	√-	x	√-	√-	x	√-	x	x	L	L	L			
		- Diversity	√	x	x	x	x	x	√	√	√	√	√	x	√	√	H	M	M			
		- Community impact	√-	√-	x	√-	√-	x	√	√	x	√	√	√	√	√	x	M	M	L		
		- Safe and fair labor conditions	√	√	x	√	√	x	√	x	x	√	√	√	√	x	H	M	M			
		- Employee benefits	x	x	x	√	√	x	x	x	x	√	√	√	√	√	√	M	M	L		
	Social	- Truthful product labeling and descriptions	√	√	√	√-	x	x	√	√	x	√-	√-	x	√	√	M	M	L			
		- Customer health and safety																				
	Aggregate:																	M	M	L	√√√	√√√

Economic	- Profitability and Tax	√	√	x	√	x	√	√	√	√	√	√	√	√	x	x	x	H	M	M		
	- Economic interests of external stakeholder	√	√	√	x	x	x	√	√	√	x	x	x	√	√	√	√	M	M	M		
	- Competitive procurement	√	x	x	√	√	√	x	x	x	√	√	√	√	√	√	√	H	M	M		
	- Customer satisfaction	√	x	x	√	√	√	√	√	√	√	√	x	√	√	x	x	H	M	L		
	- Efficient production and packaging	√	√	x	√	√	√	x	x	x	√	√	x	x	x	x	x	M	M	L		
	Aggregate:																	H	M	M	√√√	√√√

√: Contextual factor is used in orientation to SOI

√-: Contextual factor is used in less orientation to SOI

X: no comment/NA

H: Contextual factor has high orientation to SOI (At least √√√ responses)

M: Contextual factor has moderate orientation to SOI (Equal √√√ responses)

L: Contextual factor has low orientation to SOI (Up to √√ responses)

√√√: Observations and Secondary Data are consistent with the findings in the interviews at each level (actor, dyad and network level)

Appendix N: Checklist Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers-Case 6-R6

((Author's own work) Adapted from Miles and Huberman, 1994, Miles et al., 2014; Miles et al., 2020)

Case 6- Retailer 6																						
Perspecti	Themes	Contextual Factors	Interviewee 1			Interviewee 2			Interviewee 3			Interviewee 4			Interviewee 5			Overall			Observation	Secondary data
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Across SC	Across SC
Network	Actor position	-Position	√-	√-	√-	x	x	x	√-	√-	√-	√-	√-	√-	√-	x	x	L	L	L		
		Imbalance	√	√	√	√	√	x	√-	√-	x	√	x	x	√-	√-	√-	M	L	L		
		-Leadership	√	√	√	√	√	x	√	√	√	√	x	√	√	√	x	H	H	M		
		-Reputation	√	x	√	√	√	x	√	√	√	√	√	x	√	√	√	H	H	M		
		-Brand Image	x	x	x	√	√	√	x	x	x	√	√	√	√	√	x	M	M	L		
		-Commitment																				
	aggregate:																	M	M	L	√√√	√√√
	Activities	-Planning activities	√	x	√	x	x	x	√	√	√	√	√	x	x	x	x	M	L	L		
			√	√	x	√	x	√	x	x	x	x	x	x	√	√	√	M	L	L		
		-Organizing activities	x	x	x	√	√	x	√	√	√	√	√	√	x	x	x	M	M	L		
		√	√	x	√	√	√	√	x	√	√	x	x	x	x	x	H	L	M			
Aggregate:																	M	L	L	√√√	√√√	
Resources	-Financial resources	√	√	x	√-	√-	√-	√	√	√	√-	√-	x	√	x	√	M	M	L			
		√	√	x	√	√	√	x	x	x	√	√	√	√	x	√	H	M	M			
	-Information resources	x	x	x	√	√	x	√	√	√	x	x	x	√	√	√	M	M	L			
		√	√	√	√-	x	√-	√	√	x	√	x	x	√-	√-	x	M	L	L			
	-Physical resources																					
	-Personnel resources																					
	Aggregate:																	M	M	L	√√√	√√√

Entrepreneurship	Corporate Entrepreneurship	- Stages of implementing innovative ideas	√ x √	√ x √	√ x √	x √ √	x √ √	x √ √	√ √ √	x √ √	x √ √	√ x √	√ x x	√ x √	x x √	x x x	x x x	M H M	L L L	L L L		
		- Retailer supports innovation	x √	x x	x x	√- √	x √	x √	√- √	√- x	x x	√- √	x x	x x	√- √	√- √	x √	L M M	L L L	L L L		
		- Retailer provides resources and easy accessibility	√-	x	√-	√	√	x	√-	√-	x	√	√	√	√	√	√	M M M	M M M	L L L		
		- Retailer structures for an intrapreneurial environment																				
		- Developing individual managers for corporate entrepreneurship																				
		- Culture																				
	Aggregate:																	M	L	L	√√√	√√√
	Intrapreneurship	- Are innovative and creative	√ √	x √	x x	√ √	x x	√ x	√ √	x √	√ √	√ x	√ x	√ x	x √	x √	x √	H H	L M	L L		
		- Firm takes the risk and responsibility	x x √	x x x	x x √	x √ √	x x √	x x √	√ x √	√ x √	√ x x	√ x x	√ x x	√ x x	√ x x	√ x x	x x x	M M M	M L L	L L L		
		- Apply firms' management policies and structure																				
- Use of firms' resources efficiently																						
- fixed salary + Bonus/reward																						
Aggregate:																	M	L	L	√√√	√√√	

	Entrepreneurial HR	- Understand the whole context of their business - Motivate and lead their employees - Driver of success - Entrepreneurial thinking - Good decision makers	√- √- √ √ x	√- √- √ √ x	√- x √ x x	√- √- √- x √	x √- x x √	x √- x x √	√- √ √- x √	√- √ x x √	x x x x x	√- √ √ √ x	x √ x √ x	√- √ √ x x	x √ √ √ √	x x √ x √	x √ √ x √	L M M M M	L L L L M	L L L L L		
	Aggregate:																	M	L	L	√√√	√√√
Innovation	Product Innovation	-Staying competitive -Seizing market opportunities -Design for sustainability -Packaging material -Eco-labeling -Life-cycle analysis -Organic products	√ √ x √ √ x	√ x x √ √ x	x √ √- x x x	√ √ √ √- x √	√ √ √ x x √	√ √ √ x x √	√ √ √ √ x √	√ √ √ √ x √	√ x x x x √	√ x √- x √ √	√ x x x √ √	√ x x x √ √	√ √ x x √ x	x √ x x √ x	√ x x √ √ √	H H M L H M H	H M L L L M M	M L L L L L L		
	Aggregate:																	H	M	L	√√√	√√√

	Process Innovation	- Managing cost	x	x	x	x	x	x	√	√	√	√	x	x	√	√	x	M	L	L			
		- Adopting environmentally-friendly technologies	√	√	√	√	√	√	√	x	x	x	√	x	√	x	x	x	M	M	L		
	- To raise industry standards in line with environmental performance	√	x	√	√	√	√	x	x	x	x	√	√	x	√	√	√	H	M	L			
		- Response to external pressures and regulatory changes	√	√	√	√	x	√	√	√	√	√	√	x	√	x	x	H	M	M			
		- Handling waste	√	√	x	√	√	√	x	x	x	x	x	x	√	√	x	M	M	L			
		- Logistics																					
	Aggregate:																	M	M	L	√√√	√√√	
	Organizational Innovation	- Certificates	√	√	x	√	√	√	√	√	√	√	√	√	√	x	√	H	H	H			
		- Stakeholders management	√	√	√	x	x	x	√	√	√	√	x	x	√	√	√	H	M	M			
		- Engaging employees in developing a sustainable business	√	√	x	√	√	x	√	√	x	√	x	√	√	√	√	H	L	L			
		- Health and safety issues	√-	√-	√-	√	√	√	√	√	√	√	√-	√-	√-	x	x	x	L	L	L		
		- Sustainability vision	√	√	√	√	√	x	√	√	√	x	x	x	√	x	x	H	M	L			
		- Code of conduct	√	√	x	√	√	x	√-	√-	√-	√-	√-	√-	x	x	x	L	L	L			
		- Environmental policy																					
	Aggregate:																	H	M	L	√√√	√√√	
Sustainability	Environme	- Managing water	√	x	√	√-	√-	√-	√-	√-	x	x	x	x	√	√	x	L	L	L			
		- Energy control	√	√	√	√	√	√	x	x	x	√	√	x	√	√	√	H	H	M			
		- Recycling	√	x	√	√	√	x	√	√	√	√	√	x	√	x	x	H	M	L			
		- Environmental awareness	x	x	x	√-	√-	x	√	√	√	√	√	x	x	x	L	L	L				
	Aggregate:																	M	M	L	√√√	√√√	

Social	- Trainings and workshops	√	√	√	√	√	√	√	√	√	x	x	x	√	x	x	H	M	M			
	- Social events	x	x	x	√	√	√	√	√	x	√-	√-	x	√	√	x	M	L	L			
	- Diversity	√	√	x	√	√	√	x	x	x	√	√	x	x	x	x	M	M	L			
	- Community impact	√	√	x	√	√	x	√	√	√	x	x	x	x	x	x	M	M	L			
	- Safe and fair labor conditions	√-	x	x	√	x	√	√	√	x	√	√	x	√-	x	x	M	L	L			
	- Employee benefits	x	x	x	x	x	x	√	x	√	x	x	x	√	√	x	L	L	L			
	- Truthful product labeling and descriptions	√	√	√	√	x	x	√	√	x	√	√	x	√	x	√	H	M	L			
	- Customer health and safety																					
	Aggregate:																	M	M	L	√√√	√√√
	Economic	- Profitability Tax	√	√	x	√	x	√	√	x	x	√	√	√	√	√	√	H	M	M		
- Economic interests of exterstakeholder		√	√	√	√	√	√	√	√	x	√	x	√	x	x	x	H	M	M			
- Competitive procurement		x	x	x	√	√	x	√	√	√	x	x	x	√	√	√	M	M	L			
- Customer satisfaction		√	√	√	√	√	x	√	x	x	√	√	x	√	√	√	H	H	L			
- Efficient production and packaging		x	x	x	x	x	x	√	√	√	√	√	x	√	√	√	M	M	L			
Aggregate:																	H	M	L	√√√	√√√	

√: Contextual factor is used in orientation to SOI

√-: Contextual factor is used in less orientation to SOI

X: no comment/NA

H: Contextual factor has high orientation to SOI (At least √√√ responses)























































M: Contextual factor has moderate orientation to SOI (Equal √√ responses)


L: Contextual factor has low orientation to SOI (Up to √ responses)


√√√: Observations and Secondary Data are consistent with the findings in the interviews at each level (actor, dyad and network level)

Appendix O: Case-Effect Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers – For all Cases

((Author's own work) Adapted from Miles and Huberman, 1994, p. 137; 2014).

Perspectives	Themes	Case 1- Retailer 1		Case 2- Retailer 2		Case 3- Retailer 3		Case 4- Retailer 4		Case 5- Retailer 5		Case 6- Retailer 6		
		Overall for Supply Chain of Retailer 1		Overall for Supply Chain of Retailer 2		Overall for Supply Chain of Retailer 3		Overall for Supply Chain of Retailer 4		Overall for Supply Chain of Retailer 5		Overall for Supply Chain of Retailer 6		
Network	Actor position	H		M		M		H		M		M		
	Activities	H		M		M		H		M		L		
	Resources	M		M		M		M		M		M		
Entrepreneurship	Corporate Entrepreneurship	M		L		M		H		L		L		
	Intrapreneurship	M		M		M		M			L			L
	Entrepreneurial HR	M		M		L		H			L			L
Innovation	Product Innovation	H		M		M		H		L		M		
	Process Innovation	H		M		L		M			M			M
	Organizational Innovation	M		M		M		H			L			M
Sustainability	Environmental	H		H		M		H		M		M		
	Social	M		M		L		M		M		M		
	Economic	H		H		M		H		M		M		

 H: High orientation to SOI

 M: Moderate orientation to SOI

 L: Low orientation to SOI

Appendix P: Case Predictor-Outcome Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers

((Author's own work) Adapted from Miles and Huberman, 1994, pg. 214; 2014; Miles et al., 2020, p.267)

Case Predictor-Outcome Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers																				
Perspectives	Themes	Contextual Factors	Case 1			Case 2			Case 3			Case 4			Case 5			Case 6		
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network
Network	Actor position	-Position Imbalance	M	M	M	N/A	N/A	N/A	L	L	L	H	H	H	L	L	L	L	L	L
		-Leadership	M	L	L	L	L	L	M	L	L	M	M	L	L	L	L	M	L	L
		-Reputation	H	H	M	H	M	L	H	M	L	H	H	M	H	H	M	H	H	M
		-Brand Image	H	H	M	H	M	M	H	M	L	H	H	M	H	H	M	H	H	M
		-Commitment	H	H	M	H	M	M	H	M	M	H	H	M	M	M	L	M	M	L
	Aggregate		H	H	M	H	M	M	H	M	L	H	H	M	M	M	L	M	M	L
	Activities	-Planning activities	H	H	L	M	M	L	M	M	L	H	H	M	M	M	L	M	L	L
		-Organizing activities	H	H	M	L	L	L	M	M	L	H	H	M	M	M	L	M	L	L
		-Controlling activities	M	M	M	M	M	L	M	M	L	M	M	L	L	L	L	M	M	L
		-Exchange activities	H	H	M	H	M	M	H	L	L	H	H	M	H	H	M	H	L	M
	Aggregate		H	H	M	M	M	L	M	M	L	H	H	M	M	M	L	M	L	L
	Resources	-Financial resources	H	H	H	H	H	M	H	H	M	H	M	M	L	L	L	M	M	L
		-Information resources	H	M	M	M	M	L	L	L	L	H	M	M	M	M	L	H	M	M
		-Physical resources	M	M	M	M	M	L	M	M	L	H	H	M	M	M	L	M	M	L
		-Personnel resources	H	H	L	L	L	L	M	M	L	M	M	L	L	L	L	M	L	L
	Aggregate		H	M	M	M	M	L	M	M	L	H	M	M	M	M	L	M	M	L
	Overall for Network Perspective		H	H	M	M	M	L	M	M	L	H	H	M	M	M	L	M	M	L

	Aggregate		H	H	M	M	M	L	M	M	L	H	H	M	M	L	L	H	M	L	
	Process Innovation	- Managing cost	M	M	M	M	M	M	L	L	L	M	M	L	M	M	L	M	L	L	
		- Adopting environmentally-friendly technologies	H	H	H	M	M	L	L	H	M	M	H	M	M	M	L	L	M	L	L
		- To raise industry standards in line with environmental performance	M	M	M	M	L	L	L	L	L	L	M	L	M	M	M	M	M	L	L
		- Response to external pressures and regulatory changes	H	H	M	H	H	M	M	M	L	L	H	M	M	M	M	M	H	M	L
		- Handling waste	H	H	H	M	M	L	M	L	L	H	L	L	H	M	M	H	M	M	M
		- Logistics	H	H	M	M	M	L	M	M	L	H	H	L	H	M	L	M	M	M	L
	Aggregate		H	H	M	M	M	L	M	L	L	H	M	L	M	M	L	M	M	L	
	Organizational Innovation	- Certificates	H	H	H	H	H	H	H	H	H	H	H	H	H	M	L	M	H	H	H
		- Stakeholders management	H	M	M	H	H	M	M	M	M	L	H	H	M	H	M	M	H	M	M
- Engaging employees in developing a sustainable business		H	H	M	H	M	M	H	M	L	L	H	H	M	M	L	L	M	L	L	
		H	H	H	H	M	M	M	M	M	M	H	H	M	H	M	M	H	H	M	
		M	M	M	M	M	L	M	M	L	M	M	L	M	M	L	L	L	L	L	
- Health and safety issues		M	M	M	L	L	L	H	M	M	M	M	M	L	L	L	L	H	M	L	
- Sustainability vision		L	L	L	L	L	L	M	L	L	M	M	L	L	L	L	L	L	L	L	
- Code of conduct																					
- Environmental policy																					
	Aggregate		H	M	M	H	M	M	M	M	L	H	H	M	M	L	L	H	M	L	
	Overall for Innovation Perspective		H	H	M	M	M	L	M	M	L	H	H	M	M	L	L	H	M	L	
Sustainability	Environmental	- Managing water	M	M	L	H	H	L	M	M	L	M	M	L	L	L	L	L	L	L	
		- Energy control	H	H	M	M	M	L	M	L	L	H	H	M	M	M	M	H	H	M	
		- Recycling	H	H	L	H	H	M	H	M	L	H	H	M	H	M	M	H	M	L	
		- Environmental awareness	H	H	M	H	H	L	M	M	L	H	H	M	M	M	M	L	L	L	
	Aggregate		H	H	M	H	H	L	M	M	L	H	H	M	M	M	M	M	M	M	L

	Social	- Trainings and workshops	H	H	H	M	M	L	H	H	H	H	H	H	M	M	H	M	M
		- Social events	H	M	L	H	L	L	L	L	L	H	M	L	L	L	M	L	L
		- Diversity	H	M	M	M	M	L	M	L	L	H	M	L	M	L	H	M	L
		- Community impact	M	M	L	M	M	L	M	M	L	H	M	M	H	M	M	M	L
		- Safe and fair labor conditions	H	M	L	M	M	L	M	M	L	M	M	L	M	M	M	M	L
		- Employee benefits	H	L	L	H	L	L	M	L	L	M	L	L	H	M	L	L	L
		- Truthful product labeling and descriptions	H	M	M	L	L	L	L	L	L	M	L	L	M	M	L	L	L
		- Customer health and safety	M	M	M	M	M	L	M	L	L	H	M	M	M	M	L	H	M
	Aggregate		H	M	M	M	M	L	M	L	L	H	M	L	M	M	L	M	M
	Economic	- Profitability and Tax	H	H	H	H	H	M	H	H	M	H	H	H	H	M	M	H	M
		- Economic interests of external stakeholder	H	H	M	H	H	H	M	M	M	H	H	M	M	M	M	H	M
		- Competitive procurement	M	M	L	L	L	L	L	L	L	M	M	L	H	M	M	M	M
		- Customer satisfaction	H	H	M	H	M	L	M	M	M	H	H	M	H	H	L	H	H
		- Efficient production and packaging	M	M	L	M	H	L	M	M	L	H	M	L	M	M	L	M	M
	Aggregate		H	H	M	H	H	L	M	M	M	H	H	M	H	M	M	H	M
	Overall for Sustainability Perspective		H	H	M	H	H	L	M	M	L	H	H	M	M	M	M	M	L

H: Contextual factor has high orientation to SOI

M: Contextual factor has moderate orientation to SOI

L: Contextual factor has low orientation to SOI

Appendix Q: Case Ordered-Predictor-Outcome Matrix: Network, Entrepreneurship, Innovation and Sustainability contribution to SOI in SC of Retailers

((Author's own work) Adapted from Miles and Huberman, 1994; Miles et al., 2014; Miles et al., 2020, p. 267)

Case-Ordered Predictor-Outcome Matrix: Network contribution to SOI in SC of Retailers																				
Pers pecti ves	The mes	Contextual Factors	Case 4			Case 1			Case 2			Case 3			Case 6			Case 5		
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network
Network	Actor position	-Position Imbalance	H	H	H	M	M	M	N/A	N/A	N/A	L	L	L	L	L	L	L	L	L
		-Leadership	M	M	L	M	L	L	L	L	L	M	L	L	M	L	L	L	L	L
		-Reputation	H	H	M	H	H	M	H	M	L	H	M	L	H	H	M	H	H	M
		-Brand Image	H	H	M	H	H	M	H	M	M	H	M	L	H	H	M	H	H	M
		-Commitment	H	H	M	H	H	M	H	M	M	H	M	M	M	M	L	M	M	L
	Aggregate		H	H	M	H	H	M	H	M	M	H	M	L	M	M	L	M	M	L
	Activities	-Planning activities	H	H	M	H	H	L	M	M	L	M	M	L	M	L	L	M	M	L
		-Organizing activities	H	H	M	H	H	M	L	L	L	M	M	L	M	L	L	M	M	L
		-Controlling activities	M	M	L	M	M	M	M	M	L	M	M	L	M	M	L	L	L	L
		-Exchange activities	H	H	M	H	H	M	H	M	M	H	L	L	H	L	M	H	H	M
	Aggregate		H	H	M	H	H	M	M	M	L	M	M	L	M	L	L	M	M	L
	Resources	-Financial resources	H	M	M	H	H	H	H	H	M	H	H	M	M	M	L	L	L	L
		-Information resources	H	M	M	H	M	M	M	M	L	L	L	L	H	M	M	M	M	L
		-Physical resources	H	H	M	M	M	M	M	M	L	M	M	L	M	M	L	M	M	L
		-Personnel resources	M	M	L	H	H	L	L	L	L	M	M	L	M	L	L	L	L	L
	Aggregate		H	M	M	H	M	M	M	M	L	M	M	L	M	M	L	M	M	L
	Overall for Network Perspective		H	H	M	H	H	M	M	M	L	M	M	L	M	M	L	M	M	L

Case-Ordered Predicator-Outcome Matrix: Entrepreneurship contribution to SOI in SC of Retailers

Perspectives	Themes	Contextual Factors	Case 4			Case 1			Case 2			Case 3			Case 6			Case 5		
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network
Entrepreneurship	Corporate Entrepreneurship	- Stages of innovative ideas	H	H	M	H	M	L	H	L	L	M	M	L	M	L	L	H	L	L
		- Retailer supports innovation	H	H	M	H	M	M	H	M	L	H	M	L	H	L	L	H	M	M
		- Retailer provides resources/accessibility	H	H	L	H	H	H	M	M	L	M	M	L	M	L	L	L	L	L
		- Retailer structures/ intrapreneurial env.	H	M	M	M	M	M	L	L	L	H	M	L	L	L	L	L	L	L
		- Developing ind.managers for CE	M	M	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L
		- Culture	H	H	M	M	M	M	N/A	N/A	N/A	L	L	L	M	M	L	L	L	L
	Aggregate		H	H	M	H	M	M	M	L	L	M	M	L	M	L	L	L	L	L
	Intrapreneurship	- Are innovative and creative	H	M	M	H	M	M	M	M	L	M	M	L	H	L	L	H	L	L
		- Firm takes the risk and responsibility	H	M	M	H	M	M	M	M	L	M	L	L	H	M	L	H	M	L
		- Apply firms' mgt.policies/structure	M	M	L	H	H	L	H	M	L	H	M	L	M	M	L	M	M	L
- Use of firms' resources efficiently		M	M	L	H	H	L	M	L	L	H	M	L	M	L	L	L	L	L	
- Fixed salary + Bonus/reward (if any)		H	M	M	M	M	L	H	M	L	L	L	L	M	L	L	L	L	L	
Aggregate		H	M	M	H	M	L	M	M	L	M	M	L	M	L	L	M	L	L	
Entrepreneurial HR	- Understand whole context/business	H	H	M	H	H	H	M	L	L	L	L	L	L	L	L	L	L	L	
	- Motivate and lead their employees	M	M	L	M	M	M	M	M	L	M	M	L	M	L	L	M	L	L	
	- Driver of success	M	M	L	M	M	M	M	M	L	M	M	L	M	L	L	M	L	L	
	- Entrepreneurial thinking	H	H	M	M	M	M	M	M	M	M	L	L	M	L	L	M	L	L	
	- Good decision makers	H	H	M	M	M	M	M	L	L	M	L	L	M	M	L	M	M	L	
	Aggregate		H	H	M	M	M	M	M	L	M	L	L	M	L	L	M	L	L	
	Overall for Entrepreneurship Perspective		H	M	M	H	M	M	M	M	L	M	M	L	M	L	L	M	L	L

Case-Ordered Predicator-Outcome Matrix: Innovation contribution to SOI in SC of Retailers

Perspectives	Themes	Contextual Factors	Case 4			Case 1			Case 2			Case 3			Case 6			Case 5		
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network
Innovation	Product Innovation	-Staying competitive	H	H	M	H	H	M	M	M	L	H	M	L	H	H	M	H	M	L
		-Seizing market opportunities	H	H	M	H	H	H	M	M	L	H	M	L	H	M	L	H	M	L
		-Design for sustainability	H	H	L	M	M	M	M	M	L	M	M	L	M	L	L	M	L	L
		-Packaging material	M	M	L	H	H	H	M	M	L	M	M	L	L	L	L	M	L	L
		-Eco-labeling	M	M	L	M	M	M	L	L	L	L	L	L	H	L	L	M	L	L
		-Life-cycle analysis	M	M	M	M	M	M	M	L	M	M	L	M	M	M	L	M	L	L
		-Organic products	H	H	M	H	H	H	H	H	M	M	M	L	H	M	L	H	M	M
	Aggregate		H	H	M	H	H	M	M	M	L	M	M	L	H	M	L	M	L	L
	Process Innovation	- Managing cost	M	M	L	M	M	M	M	M	M	L	L	L	M	L	L	M	M	L
		- Adopting env-fri technologies	H	M	M	H	H	H	M	M	L	H	M	M	M	L	L	M	L	L
		- To raise standards/env-performance	M	L	L	M	M	M	M	L	L	L	L	L	M	M	L	M	L	L
		- Response to ext.pressures/reg. changes	H	M	M	H	H	M	H	H	M	M	L	L	H	M	L	M	M	M
		- Handling waste	H	L	L	H	H	H	M	M	L	M	L	L	H	M	M	H	M	M
		- Logistics	H	H	L	H	H	M	M	M	L	M	M	L	M	M	L	H	M	L
Aggregate		H	M	L	H	H	M	M	M	L	M	L	L	M	M	L	M	M	L	
Organizational Innovation	- Certificates	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	L	M	
	- Stakeholders management	H	H	M	H	M	M	H	H	M	M	M	L	H	M	M	H	M	M	
	- Engaging employees/ sust. business	H	H	M	H	H	M	H	M	M	H	M	L	M	L	L	M	L	L	
	- Health and safety issues	H	H	M	H	H	H	H	M	M	M	M	M	H	H	M	H	M	M	
	- Sustainability vision	M	M	L	M	M	M	M	M	L	M	M	L	L	L	L	M	M	L	
	- Code of conduct	M	M	L	M	M	M	L	L	L	H	M	M	H	M	L	L	L	L	
	- Environmental policy	M	M	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L	
	Aggregate		H	H	M	H	M	M	H	M	M	M	M	L	H	M	L	M	L	L
	Overall for Innovation Perspective		H	H	M	H	H	M	M	M	L	M	M	L	H	M	L	M	L	L

Case-Ordered Predictor-Outcome Matrix: Sustainability contribution to SOI in SC of Retailers																				
Perspectives	Theme	Contextual Factors	Case 4			Case 1			Case 2			Case 3			Case 6			Case 5		
			Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network	Actor	Dyad	Network
Sustainability	Environmental	- Managing water	M	M	L	M	M	L	H	H	L	M	M	L	L	L	L	L	L	L
		- Energy control	H	H	M	H	H	M	M	M	L	M	L	L	H	H	M	M	M	M
		- Recycling	H	H	M	H	H	L	H	H	M	H	M	L	H	M	L	H	M	M
		- Environmental awareness	H	H	M	H	H	M	H	H	L	M	M	L	L	L	L	M	M	M
	Aggregate		H	H	M	H	H	M	H	H	L	M	M	L	M	M	L	M	M	M
	Social	- Trainings and workshops	H	H	H	H	H	H	M	M	L	H	H	H	H	M	M	H	M	M
		- Social events	H	M	L	H	M	L	H	L	L	L	L	L	M	L	L	L	L	L
		- Diversity	H	M	L	H	M	M	M	M	L	M	L	L	H	M	L	M	M	L
		- Community impact	H	M	M	M	M	L	M	M	L	M	M	L	M	M	L	H	M	L
		- Safe and fair labor conditions	M	M	L	H	M	L	M	M	L	M	M	L	M	M	L	M	M	L
- Employee benefits		M	L	L	H	L	L	H	L	L	M	L	L	M	L	L	H	M	L	
- Truthful product labeling/descriptions		M	L	L	H	M	M	L	L	L	L	L	L	L	L	L	M	M	L	
- Customer health and safety		H	M	M	M	M	M	M	M	L	M	L	L	H	M	L	M	M	L	
Aggregate		H	M	L	H	M	M	M	M	L	M	L	L	M	M	L	M	M	L	
Economic	- Profitability and Tax	H	H	H	H	H	H	H	H	M	H	H	M	H	M	M	H	M	M	
	- Economic interests/ext.stakeholder	H	H	M	H	H	M	H	H	H	M	M	M	H	M	M	M	M	M	
	- Competitive procurement	M	M	L	M	M	L	L	L	L	L	L	L	M	M	L	H	M	M	
	- Customer satisfaction	H	H	M	H	H	M	H	M	L	M	M	M	H	H	L	H	H	L	
	- Efficient production and packaging	H	M	L	M	M	L	M	H	L	M	M	L	M	M	L	M	M	L	
	Aggregate		H	H	M	H	H	M	H	H	L	M	M	M	H	M	L	H	M	M
	Overall for Sustainability Perspective		H	H	M	H	H	M	H	H	L	M	M	M	M	M	L	M	M	M

H: Contextual factor has high orientation to SOI

M: Contextual factor has moderate orientation to SOI

L: Contextual factor has low orientation to SOI

√√√: Observations and Secondary Data are consistent with the findings in the interview

Appendix R: Researcher's Reflection

I was excited to start my PhD journey in a subject I am passionate about. As the journey began, I found myself overwhelmed with so much reading of previous research and actually writing a literature review. I realized I needed to employ a systematic literature review as it assisted in narrowing the scope of my research and saved time searching through numerous journals by utilizing key search strings and engines. I learned the most important thing is to always read and write and not to worry about it being perfect from the first time.

As time went by I had to consider writing my methodology chapter and that research methodology is a process utilized to collect data and information for the purpose of my research. I read a lot of books and articles that assisted me in choosing and justifying my methodological methods to achieve my research aim, questions and objectives. At times, it was difficult to know for sure if the research design I developed was rigorous enough, will there be enough replication and triangulation, and will my research have validity and reliability? I found out the best way to know was to conduct a pilot study and see from there, but before I was able to start my fieldwork I had to start the process of my ethical approval.

It was time for ethical consideration and preparing all the documents. It was a bit overwhelming preparing documents for the ethical approval of the university, but I learned that being organized and having a checklist saved time and helped lead me on the right path. I received full ethical approval from the university board and it felt great to have achieved this.

Transfer! Transfer was right around the corner! Honestly, I was excited about the presentation but the idea of having an examiner to read my chapters, watch my transfer presentation and then examine me was a bit nerve wrecking. Luckily, hard work and sleepless nights paid off. I passed my transfer! It was officially time for me to begin my data collection. I started with a pilot study to examine the feasibility of the methods chosen to provide viable data, to discover any limitations in the interview questions, as well as to recognize any inconsistencies before commencing the main study. My pilot study helped in rephrasing some of the interview questions, recognizing when probing was essential to guarantee quality and depth of the data and it helped in determining the approximate time needed for the actual interviews. Fortunately, the pilot case study was used as one of the main cases! See the Table below for more detail of my reflection before, during and after collecting data.

Analyzing the data was exciting as meaningful findings emerged. It was a bit challenging especially dealing with so much data, particularly the transcripts for the interviewees. Transcribing was exhausting, but I felt it was important for me to transcribe them to familiarize myself with the data. Familiarizing myself with the data and organizing them helped in overcoming this issue.

Searching for the most applicable way to represent my data was thought provoking but with lots of reading, it was manageable. I loved the end results! I separated my chapters based on the type of finding, making it easier for the reader to understand. I had a chapter for my expert interview findings, case study analysis and findings and another chapter on cross-case analysis, findings and discussion.

Finally, there was my last chapter to write, the conclusion!! It was exciting, the last one! Writing the theoretical and methodological contributions, implications, recommendations, limitations and suggested future research came with mixed feelings for me, that my thesis, my hard work has really contributed to knowledge and that this is really coming to an end!

An important note I learned is that the literature review never ends, it is an ongoing process and updates and amendments must be done throughout writing all the other chapters. Furthermore, the methodology chapter needs to be updated after the actual data has been collected and analyzed. Now it is time to reread the entire thesis to check for consistency, a good story-line, structure, editing and proofreading!

Finally, yet importantly, I could not have gone through this journey without my incredible supervisory team. They showed interest in my work, empathy and compassion throughout all of this. They all showed support and were always available when I needed them. They showed commitment in every monthly meeting and encouraged me to submit and attend conferences. They provided constructive feedback on every chapter I had sent. I believe I had a great supervisory team, they have knowledge and expertise in their field and this benefited me in reflecting my multi-disciplinary research.

Table for Appendix R: Reflection before, during and after collecting data. (Adapted from Schön, 1983).

Before the experience of collecting data	During the experience of collecting data	After the experience of collecting data
What do you think might happen?	What's happening now, as you make rapid decisions?	What are your insights immediately after, and/or later when you have more emotional distance from the event?
-Ideally, the interviews go smoothly -Negatively, they are postponed or canceled	-Knowing when to probe or prompt without misleading the interviewee	-Understanding the reality of the phenomenon -Confidence about moving forward -Finished the interviews successfully with good insights from the participants, leading to good contribution
What might be the challenges?	Is it working out as I expected?	In retrospect how did it go?
-The interviewees not providing all required information -Making sure the interview is conducted in a quiet office with no disruptions	-Yes, for the majority of the cases - I found it useful to start transcribing as soon as possible	-It went well. I had planned to finish all six cases during two journeys to Jordan but due to an unexpected situation I had to postpone an entire case as they were going through an unscheduled inspection from a government body, meaning I had to travel for data collection for a third time.
What do I need to know or do in order to be best prepared for the experiences?	Am I dealing with the challenges well?	What did I particularly value and why?
Prepare protocol questions and recording devices.	-Yes, I broke the ice before the actual interview began -I am probing and prompting well when needed	-Expanded my interview skills, building trust, my communication skills and represented my university -I felt I had reached level 8 researcher as I accomplished the 38 interviews successfully
	Is there anything I should do, say or think to make the experience successful?	Is there anything I would do differently before or during a similar event?
	-Make notes of anything you might want to ask about in more detail -Write down the interviewee's feelings and behavior	-To consider a longer period for data collection as unexpected circumstances can arise. In this way I minimize the number of journeys to collect my data
	What am I learning from this?	What have I learnt?
	-Experience of verbal and non-verbal communication and being the interviewer -Being a part of the real-life context	-Conducting data collection is an interesting procedure of learning and it is exciting to do field work -Understanding the reality of the phenomenon

Appendix S: NVivo for Expert Interviews

- Expert Interviewees

Files <input type="text" value="Search Project"/>			
Name		Codes	References
AR1_Academic Researcher based in Jordan		12	21
AR2_Academic Researcher based in the UK		12	19
R1_HR Manager_HRm1		12	37
R2_HR Manager_HRm2		12	19
R3_HR Manager_HRm3		12	26
R4_HR Manager_HRm4		12	35
R5_HR Manager_HRm5		12	32
R6_HR Manager_HRm6		12	36

- NVivo for Expert Interviews: Nodes for each Theoretical Perspective and their High-order Themes

Nodes <input type="text" value="Search Project"/>			
Name		Files	References
Entrepreneurship Perspective		8	39
Corporate Entrepreneurship		8	17
Entrepreneurial HR		8	10
Intrapreneurship		8	12
Innovation Perspective		8	68
Organizational Innovation		8	29
Process Innovation		8	24
Product Innovation		8	15
Network Perspective		8	55
Activities		8	27
Actor Positioning		8	8
Resources		8	20
Sustainability Perspective		8	63
Economic		8	22
Environmental		8	20
Social		8	21

Appendix T: NVivo for Case Studies

- Interviewees for each Case

Case 1 – Retailer 1

Case 1_ Retailer 1			
Name		Codes	References
R1_interviewee1_FFM1_Fresh Food Manager		52	69
R1_interviewee2_PDM1_Product Development Manager		50	63
R1_interviewee3_SCMr1_Supply Chain Manager		55	59
R1_interviewee4_HSS1_Head of Sustainable Sourcing		54	64
R1_interviewee5_HSM1_Hygiene and Safety Manager		53	64

Case 2 – Retailer 2

Case 2_ Retailer 2			
Name		Codes	References
R2_interviewee1_FFM2_Fresh Food Manager		43	51
R2_interviewee2_PDM2_Product Development Manager		42	44
R2_interviewee3_SCMr2_Supply Chain Manager		45	47
R2_interviewee4_HSS2_Head of Sustainable Sourcing		46	51
R2_interviewee5_HSM2_Hygiene and Safety Manager		46	51

Case 3 – Retailer 3

Case 3_ Retailer 3			
Name		Codes	References
R3_interviewee1_FFM3_Fresh Food Manager		41	44
R3_interviewee2_PDM3_Product Development Manager		42	46
R3_interviewee3_SCMr3_Supply Chain Manager		43	48
R3_interviewee4_HSS3_Head of Sustainable Sourcing		46	51
R3_interviewee5_HSM3_Hygiene and Safety Manager		43	46

Case 4 – Retailer 4

Case 4_ Retailer 4			
Name		Codes	References
R4_interviewee1_FFM4_Fresh Food Manager		55	67
R4_interviewee2_PDM4_Product Development Manager		53	55
R4_interviewee3_SCMr4_Supply Chain Manager		54	62
R4_interviewee4_HSS4_Head of Sustainable Sourcing		51	59
R4_interviewee5_HSM4_Hygiene and Safety Manager		51	66

Case 5 – Retailer 5

Case 5_ Retailer 5			
Name		Codes	References
R5_interviewee1_FFM5_Fresh Food Manager		54	61
R5_interviewee2_PDM5_Product Development Manager		58	62
R5_interviewee3_SCMr5_Supply Chain Manager		48	58
R5_interviewee4_HSS5_Head of Sustainable Sourcing		52	54
R5_interviewee5_HSM5_Hygiene and Safety Manager		53	58

Case 6 – Retailer 6

Case 6_ Retailer 6			
Name		Codes	References
R6_interviewee1_FFM6_Fresh Food Manager		48	56
R6_interviewee2_PDM6_Product Development Manager		50	61
R6_interviewee3_SCM6_Supply Chain Manager		53	58
R6_interviewee4_HSS6_Head of Sustainable Sourcing		52	57
R6_interviewee5_HSM6_Hygiene and Safety Manager		49	51

- NVivo: Nodes for each Theoretical Perspective

Four Perspectives and their High-order Themes



Network Perspective

Nodes			
	Name	Files	References
[-]	Network Perspective	30	314
[+]	Actor Positioning	30	129
[+]	Activities	30	91
[+]	Resources	30	94

Nodes			
	Name	Files	References
[-]	Network Perspective	30	314
[-]	Actor Positioning	30	129
	Position Imbalance	20	20
	Leadership	20	20
	Reputation	29	32
	Brand Image	28	33
	Commitment	23	24
[-]	Activities	30	91
	Planning activities	22	22
	Organizing activities	19	21
	Controlling activities	18	21
	Exchange activities	26	27
[-]	Resources	30	94
	Financial resources	30	33
	Information resources	20	21
	Physical resources	18	20
	Personnel resources	20	20

Entrepreneurship Perspective

[-]	Entrepreneurship Perspective		30	385
[+]	Corporate Entrepreneurship		30	155
[+]	Intrapreneurship		30	113
[+]	Entrepreneurial HR		30	117









Nodes

Name	Files	References
[-] Entrepreneurship Perspective	30	385
[-] Corporate Entrepreneurship	30	155
Stages of implementing innovative ideas	26	28
Retailer supports innovation	27	33
Retailer provides resources and easy accessibility	24	26
Retailer structures for an intrapreneurial environment	26	27
Developing individual managers for corporate entrepreneurship	16	16
Culture	20	25
[-] Intrapreneurship	30	113
Are innovative and creative	22	23
Firm takes the risk and responsibility	22	22
Apply firms' management policies and structure	23	23
Use of firms' resources efficiently	21	21
fixed salary and Bonus or reward (if any)	23	24
[-] Entrepreneurial HR	30	117
Understand the whole context of their business	21	22
Motivate and lead their employees	23	25
Driver of success	23	25
Entrepreneurial thinking	21	22
Good decision makers	21	23

Innovation Perspective



  Innovation Perspective		30	512
  Product Innovation		30	174
  Process Innovation		30	147
  Organizational Innovation		30	191

  Innovation Perspective		30	512
  Product Innovation		30	174
 Staying competitive		27	37
 Seizing market opportunities		26	29
 Design for sustainability		19	23
 Packaging material		22	25
 Eco-labeling		18	18
 Life-cycle analysis		17	17
 Organic products		25	25
























  Process Innovation		30	147
 Managing cost		18	25
 Adopting environmentally-friendly technologies		22	25
 To raise industry standards in line with environmental performance		16	17
 Response to external pressures and regulatory changes		25	25
 Handling waste		22	32
 Logistics		21	23

  Organizational Innovation		30	191
 Certificates		30	38
 Stakeholders management		23	26
 Engaging employees in developing		27	27
 Health and safety issues		26	35
 Sustainability vision		21	26
 Code of conduct		21	22
 Environmental policy		17	17

Sustainability Perspective

 Sustainability Perspective		30	472
 Environmental		30	122
 Social		30	209
 Economic		30	141

Nodes

 Name	 Files	References
 Sustainability Perspective	30	472
 Environmental	30	122
 Managing water	20	20
 Energy control	25	36
 Recycling	27	40
 Environmental awareness	21	26
 Social	30	209
 Trainings and workshops	20	29
 Social events	28	28
 Diversity	23	27
 Community impact	20	23
 Safe and fair labor conditions	23	33
 Employee benefits	26	26
 Truthful product labeling and descriptions	16	19
 Customer health and safe	23	24
 Economic	30	141
 Profitability and Tax	26	38
 Economic interests of external stakeholder	24	26
 Competitive procurement	18	19
 Customer satisfaction	27	36
 Efficient production and packaging	20	22