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Understanding the complex interactions between stakeholders in an organic food supply chain

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Abstract

Due to the rampant issues of sustainability violations getting exposed through media reports, NGO scrutiny and government audits, consumers are becoming more wary of irresponsible behavior of brands. This has elicited stringent monitoring of sustainability violations by brands as well as regulatory bodies. Though there are several studies on the barriers towards the adoption of sustainable products, there is a lack of holistic overview of the problems confronting the supply chain considering multiple stakeholders. Hence, we examine the main roadblocks faced by the majority of the stakeholders in implementing sustainable practices. We discuss the issues in terms of broad economic, social and environmental factors and derive propositions based on multiple stakeholder perspectives. We further find evidence for the validity of the propositions through a group model building exercise in a sustainable food supply chain context. The causal loop diagram from the group model building gives a holistic view by indicating the systemic interactions of the various factors identified by multiple stakeholders.

Keywords: Causal loop diagram, Group model building, Sustainable supply chain

1. Introduction

The increasing concern of products that can harm the environment and health has led to a higher demand for sustainable products worldwide. The "Brundtland Report" defined sustainable development as "development that meets the needs of current generations without compromising the ability of future generations to meet their needs and aspirations" (WCED, 1987, p. 43). Countries, as well as consumers, have become more conscious of the environment and society in their decision-making activities (Kaufmann, Kraay, & Mastruzzi, 2009). For instance, the consumption of sustainability-marketed products among consumers in the United States showed a 50% growth during the period 2013-2018 (Kronthal-Sacco et al., 2019). The high demand for sustainable products has also attracted more prominent firms such as Unilever, who reinvented their legacy products with its "sustainable living" brands that contribute 70% of its revenue growth (Whelan & Kronthal-Sacco, 2019). Many other firms are also aligning their offering of products with the sustainability expectations of consumers such as 100% cage-free eggs by Hellman in the US, advancing sustainability initiatives through safe disposal and recycling by Dell, and running stores on 100% renewable energy sources by Walmart to mention a few.

Even though many firms offer sustainable products, literature identify several issues confronting the industry in terms of high prices (de Medeiros, & Ribeiro, 2017), fake labels (Amos et al., 2019), availability (Cerri, Testa, & Rizzi, 2018) and others, which hamper the adoption of sustainability in the supply chains. For example, a review of literature from 2000 to 2014 indicates that price is a significant barrier towards the adoption of sustainable food products by the consumers (Witzel & Zielke, 2017). Similarly, another study conducted among consumers in the US finds that awareness, availability, and limited economic resource impact the momentum of adoption of sustainability in textile supply chains (Connell, 2010). Despite the obstacles, due to the substantial stakeholder pressure, manufacturers try to meet the sustainability compliances imposed by other stakeholders in the supply chain (e.g., Guardian, 2013). For instance, following the Rana Plaza building collapse that killed 1129 people working on four supplier factories in Bangladesh (BBC, 2013; Guardian, 2013; Huffington Post, 2013), companies significantly cut down on the suppliers who do not meet their sustainability standards (Huq, Stevenson, & Zorzini, 2014). Even though measures such as supplier compliance and contracts can improve supply chain sustainability, enforcing sustainability regulations on different actors in the supply chain, considering its impact

on a system-level, can improve the long-term success of sustainable supply chains (Mathivathanan, Kannan, & Haq, 2018).

Achieving sustainability in supply chains is a complex process involving unentangling conflicting interests of various stakeholders (Kaptein & Wempe, 2001; Mauerhofer, 2008; Diwekar, 2005). For example, consider an apparel manufacturing firm that improves the sustainability compliance of its products. The firm charges a premium for its new offering, while consumers prefer having them at the same price. To reduce the price, if the firm transfers the burden of cost-cutting to the upstream suppliers, the firm then has to deal with the opportunistic behavior of suppliers in the network, located in different parts of the world like child labor, unsafe working conditions, and low wages. If on the other hand, had the consumers been willing to pay a premium for sustainable products, many brands would have tried to reap more profits by coming up with false sustainability claims. Such opportunistic behavior of stakeholders in a supply chain where the objective is individual profit maximization adversely affects the growth of the industry. Following these gaps in the literature, this paper tries to answer the following research questions:

- *What are the various social, economic, and environmental barriers that affect sustainability adoption by multiple stakeholders in a supply chain?*
- *How are they interconnected with each other in a system-level and under dynamic environmental conditions?*

To address the first research question, we present an integrative review of the published articles on the systemic barriers in the adoption of sustainability in supply chains during the last fifteen years, from 2005 to 2019. Further, we test the validity of the derived propositions using a group model building technique (Richardson & Andersen, 1995; Vennix, 1996, 1999) incorporating multiple stakeholders in the food supply chain. We address the second research question using a causal loop diagram (Sterman, 2001) taking the case of a food supply chain.

We believe that the findings of our study carry several important implications. Firstly, to the best of our knowledge, this is the first study to conduct a review of literature encompassing multiple stakeholders in a sustainable supply chain. Secondly, we find evidence for the attrition of farmers from sustainable practices which has not been studied in the existing literature. We observe from literature as well as group model building that, factors such as cost of inputs, price sensitivity of

consumers, social pressure, conversion time, yield decline etc can drive farmers away from sustainable practices in the absence of supporting measures.

The paper is organized as follows. First, we explain our review method for studying the barriers to adopt sustainability in supply chains. Second, we identify the various social, economic, and environmental barriers and derive propositions considering multiple stakeholders in the supply chain. Fourth, we test the validity of the derived propositions through group model building in the food industry. Finally, we discuss the implications as well as the limitations of our research.

2. Literature Identification and Collection

We employ a systematic approach to identify relevant articles for our literature review. We considered publications only in English and appearing in peer-reviewed journals for this research. We searched the major databases such as Elsevier (http://www.sciencedirect.com), Emerald (http://www.emeraldinsight.com), Springer(http://www.springerlink.com), Wiley(http://www.wiley.com), and library services like EBSCO(http://www.ebsco.com) and JSTOR(http://www.jstor.org) using structured keyword search using keywords such as "sustainable," "sustainability," and "organic." The first stage of screening of papers was done by looking at the articles' keywords, and subsequently, scanning of the abstracts. Cross-referencing was employed to check if there were any additional related and relevant papers that could be included in the review process.

We then cross-checked and validated the relevance of the initial set of 3505 articles from peer-reviewed journals. To select relevant articles, we examined the title, abstract, or the content of the articles manually by referring to the criteria: (1) articles focusing on barriers in adoption of sustainability, and (2) articles written in English. This literature selection process allows us to synthesize findings from significant peer-reviewed journal articles with empirical evidence regarding the roadblocks on the path to sustainability. Finally, a total of 151 articles were collected for our literature review. We then classified the papers separately against social, economic, and environmental barriers (refer to Table A1 in the appendix). To avoid bias from the interpretation of a single analyst, two researchers coded for the categories to ensure inter-coder reliability. This provides ground for subjective interpretations depending on the mental schemes of the coders which call for inter-subjectivity (Potter & Levine-Donnerstein, 1999; Brewerton & Millward,

2001). Where differences in judging a particular code occurred, it was solved through mutual consultations, agreeing upon a common coding.

Table 1: Review methodology and the selection steps adopted

Steps	Process	Papers found
Year	2005-2023	
Keywords	Topic = "Related words about stakeholders in a supply chain" and, "related words about sustainability" • Related words for stakeholders in a supply chain: stakeholder, supplier, buyer, customer, consumer, wholesaler, retailer, sourcing, buying • Related words for sustainability: green, sustainable, organic • For example: TS = (consumer and sustainable)	3505
Selection criteria	• Document type: Article and review • Languages: English • Research Areas: Management	292
Final selection	• Read the full texts of 292 papers independently by all members to evaluate whether the paper discussed about barriers in adoption of sustainability. • After mutual comparison of all evaluations, careful analysis and several rounds of brainstorming sessions, papers that do not discuss barriers in sustainability adoption were deleted. • Finally, we include 151 papers for further analysis.	151

2.1 Social factors

2.1.1 Lack of awareness

Awareness is defined as knowing that sustainability adoption is important and that the issue actually exists (Meixell & Luoma, 2015). It requires information search which is the process by which an individual (a firm) studies his/her (its) environment to make a reasonable decision (Solomon et al., 2006, p. 265). During the process, they weigh the effort in seeking the information in terms of time, cost and the cognitive effort with the benefits of obtaining it (Hauser, Urban & Weinberg, 1993; Bettman, Luce & Payne, 1998; Solomon et al., 2006; Prabha et al., 2007). Though there are many theories used to explain how individual or firm-level decisions are framed in relation to the adoption of sustainable goods, only a few of them are used in the context of how stakeholders in a sustainable supply chain seek information. From the neoclassical economic

theory, people seek additional information as long as the marginal benefits of the search equal marginal costs (Ratchford, 1982; Smith, Venkatraman & Dholakia, 1999; Solomon et al., 2006). However, the literature does not restrict the analyses of why individuals or firms seek information to cost aspects alone. For instance, the Norm Activation Theory (Schwartz, 1977) asserts that moral norms are activated when individuals (firms) become aware of the adverse consequences and accept responsibility that their (its) actions can avert the associated possible negative impacts. In continuum, the Values Theory (Schwartz, 1992, 1994) proposes that actions are triggered by values that reflect the desired goal of an individual (a firm). These values are ordered according to their relative importance to the individual (the firm). The final action is determined by how the set of values are prioritized (Schwartz, 1977). The VBN theory combines the Value theory and Norm activation theories that are used to explain pro-environmental behavior (de Groot & Steg, 2008; Hansla et al. 2008). Though the above theories have been used in the context of how awareness is built in sustainable consumption, it does not offer a clear explanation of how a lack of awareness among any stakeholder, affects sustainability adoption in supply chains.

Lack of awareness significantly impacts sustainability compliance in supply chains. However, there are some contradictory evidence in the literature. Zhu, Sarkis and Geng (2005) in their study on manufacturing firms in China found that awareness need not translate to adoption. But, if a global brand does not properly audit its suppliers located in other parts of the world, it could lead to opportunistic behavior of suppliers such as serious exploitation of employees in the factory like child labor, lack of minimum wages, and poor work environment. Apart from the fact that the suppliers may lose their contracts following an allegation by an NGO or press, the parent brand faces the risk of a boycott due to poor working conditions in its supplier factories causing severe reputational damages. For instance, Hershey Foods Corp., launched stringent audits to check labor practices of its cocoa suppliers in the Ivory Coast and Ghana due to fear of product boycott following possible child labor allegations against its suppliers (Fernandez, 2001). Similarly, the government bodies in the countries will also face severe international criticisms, adversely affecting their share of global trade. Following the Rana Plaza disaster in Bangladesh, several suppliers lost their contracts and the country fell nearly into a situation of a global blacklist, hurting an industry that accounted for 45% of the country's industrial employment (Jacobs & Singhal, 2017). Hence, the awareness of the benefits of incorporating sustainable practices in the supply chain becomes important in the long run for any stakeholder. This is called the double-agency role

(Wilhelm et al., 2016) where every stakeholder strictly ensures sustainability in their operations and also monitors the suppliers for compliance.

2.1.2 Psychological distance

Construal level theory explains how an individual or a firm perceive events that vary in terms of psychological distance (*time, physical space, interpersonal*, *likelihood of occurrence, informational distance, experiential distance, affective distance,* and *perspective distance*) and act accordingly (Fiedler 2007; Trope & Liberman, 2010). Schill and Shaw (2016) found that low psychological distance can improve the recycling behavior of individuals. However, the applicability of psychological distance to explain sustainability adoption by multiple stakeholders has gone largely unnoticed. Given the variations in the results related to the adoption of sustainable goods by multiple stakeholders in a supply chain, located in different geographical regions, psychological distance should explain the difference in stakeholder perspectives geographically.

It affects the extent to which people assign importance to events by categorizing them to two levels; low-level construal and high-level construal. While high-level construal extracts the main gist of the situation, low-level construal is more detail-oriented. For example, consider the case of a stakeholder choosing between sustainable as well as a conventional product either for consumption, production or handling. If one were to think about the choice-making decision at a high level, one would see it as a simple case of choosing between similar products. Whereas, from a low-level perspective, one would focus more on specific details such as the health risks associated with the consumption, social and environmental aspects of production and distribution. Thus, when analyzed from the perspective of desirability, high-level construal focuses on "*why sustainable goods?*" which should induce them to seek information whereas the low-level construal focuses on "*how to achieve the result i.e., better health and better life?*" which should lead them to actual adoption. The construal level theory has been applied in the case of sustainable goods to assess how people vary in their behaviors when the benefits of the action are not immediate, but long term. Through a time-based categorization of product benefits, it has been found that a future-oriented person or firm is more likely to learn about sustainable goods and adopt them (Mohsen & Dacko, 2013).

There have been little studies on the *recency effect or information distance* in triggering attraction for sustainable goods by multiple stakeholders, which says that access to recent information has the potential for higher recall in the minds of people (Baddeley & Hitch, 1993). They will assign weights to such information, depending on the seriousness of the issue or the extent of the problem. The more recent issues will have more effect on the subconscious assimilation of information pertinent to adoption. This will also mobilize external stakeholders such as customers, government, and shareholders so that the firms cannot move ahead without addressing the issues (Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010).

2.2 Environmental factors

2.2.1 Lack of environmental consciousness

Individuals cite protection of the environment, supporting the local environment, animal welfare, and fair price to farmers as essential factors that drive them to purchase sustainable goods (Zepeda & Deal, 2009; Zander & Hamm, 2012). This is consistent with the teleological motives in the Ethical Theory where consumers make their choices based on the intended outcome, aim or goals. It is centered on the principle of utilitarianism, where the motive seeks alignment with the happiness of a greater number of people. Due to concern for the society and environment, stakeholders in a sustainable supply chain exert varying influence on the channel partners to adopt sustainable practices. This can be in the form of sourcing policies, environmental audits and penalties for violation. For example, external stakeholders such as NGOs, customers, government and shareholders might influence change in the behavior of firms (Williams, Medhurst, & Drew 1993; Corral, 2003; Lee, 2008). The pressure to change can also arise from the senior staff by increasing employee morale by demonstrating greater environmental awareness. The environmental concern of consumers and buying firms establish performance mandates for the suppliers regarding the incorporation of sustainability in the production, packaging, storage and distribution. Reduced environmental and social compliances expose firms to risk of retaliation by various stakeholders like product boycott by consumers, retraction of contracts and severe reputational damages (Johnson, 2015). Such instances of poor social and environmental performance put the corporate reputation at stake, which is dangerous given that a good corporate reputation increases the length of time a firm spends earning above-average return on investments and decreases the period it spends drawing below-average financial returns (Dowling, 2001). It

has been shown that low participation by external stakeholders adversely affects sustainable supply chain governance (Li, Zhao & Li, 2014). It is therefore important for every entity in a supply chain to improve sustainability adoption as external stakeholders such as consumers, NGOs and the government become more alert on the social and environmental performance of brands.

2.3 Economic Factors

2.3.1 Price

Consumers attach varying importance to product characteristics when shopping for sustainable products. Price remains one of the extensively researched topic among consumers of sustainable products. Consumers mostly cite higher prices as the main barrier to consume sustainable products even though some justify the higher prices citing reasons of increased value (Sirieix, Kledal, & Sulitang, 2011). A qualitative interview with a set of Danish consumers quotes price premiums as an important barrier to the purchase decision of sustainable products without relating to a specific product (Witzel & Aagaard, 2014). The influence of price can vary based on the intention of purchase, functional vs. hedonic and social context (Wakefield & Inman, 2003). In line with this research, from a survey of 215 German consumers, the first time buyers cite reasonable pricing as a significant factor for purchase and were seen to be under significant time pressure. However, the non-first time buyers attribute their purchase decision to environment and health reasons (Gottschalk & Leistner, 2013). Witzel and Zielke (2017) in their literature review which explored, in particular, the role of price in consumer behavior related to organic foods, concluded that price was the primary perceived barrier in the adoption of organic products, though certain contrary evidence was reported from markets in their early developmental stage or focused on regular organic buyers from matured markets.

However, from the supply chain perspective, studies indicate that compared to a traditional supply chain, a sustainable supply chain is exposed to several risks. This can be due to supply shortages, high monitoring costs, higher conversion time and long gestation periods (Agrawal & Lee, 2019). Therefore, ensuring sustainability in the supply chain can be costly which makes it difficult for the suppliers to match the price expectation of consumers. Such cost-cutting pressures can lead to opportunistic behavior by stakeholders in the supply chain in the absence of stringent monitoring.

In countries with vigorous legislative enforcement or, even a strong NGO presence, this can lead to a reduction of investments in sustainability due to a lack of adequate returns.

2.3.2 Authenticity

An ideal sustainable supply chain is a fully transparent supply chain where the buyer (consumer or a firm) located in any of the latter stages of the supply chain can monitor all the upstream suppliers. However, building such a scenario of supply chain visibility would be close to impossible, given that the suppliers and buyers are globally dispersed. Authenticity in the context of sustainable products describes the different methods by which the traceability of the product can be ensured like stage-wise certification, labeling and other geographical indications. Several studies report the significance of evaluation certainty in the decision to adopt sustainability practices by various stakeholders and purchase decisions by consumers. The evaluation certainty is enhanced in cases where goods are certified, sourced from local places, (Bingen, Sage & Sirieix, 2011; Chen, Lobo & Rajendran, 2014; Meyerding & Merz, 2018; de-Magistris & Gracia, 2014).

Due to complex social and environmental compliance requirements, supply chain visibility becomes important in a sustainable supply chain especially when production, storage, distribution, and consumption happens in geographically distinct places with different enforcement scenarios. Hence, the risks of default or opportunistic behavior get multiplied with the increase in the number of tiers in the supply chain and the number of partners in each tier. In countries with lax enforcement of sustainability standards, the opportunistic behavior of stakeholders increases and hence consumers become more doubtful regarding sustainability claims of which reduces the overall demand.

2.3.3 Availability

Since sustainable production entails effort and has long conversion cycles, the supply chain often fails to meet consumer demand. Due to high costs and low availability of inputs (Lee, Nunez & Cruz, 2018), sustainable suppliers are still low in number compared to conventional suppliers. This raises a challenge for the buyers who cannot solely depend on sustainable goods and hence most of them stock conventional goods as well (Agrawal & Lee, 2019). However, in order to meet the market demand, buyers adopt a sustainable-preferred policy when it comes to sourcing in order to incentivize the suppliers to adopt sustainable practices. Due to frequent stockouts, consumers cite

the problem of convenience when it comes to making repeat purchases of sustainable goods (Brown, Dury, & Holdsworth, 2009). Thus, although the consumption of sustainable goods has a moral and aesthetic anchor associated with it, the deviation from a habitual purchase behavior induces a level of stress. Consumers tend to minimize, master or reduce the level of stress through coping mechanisms. Coping is a process of reciprocal action between the individual and the situation. Consumers in such situations purchase conventional products that are readily available.

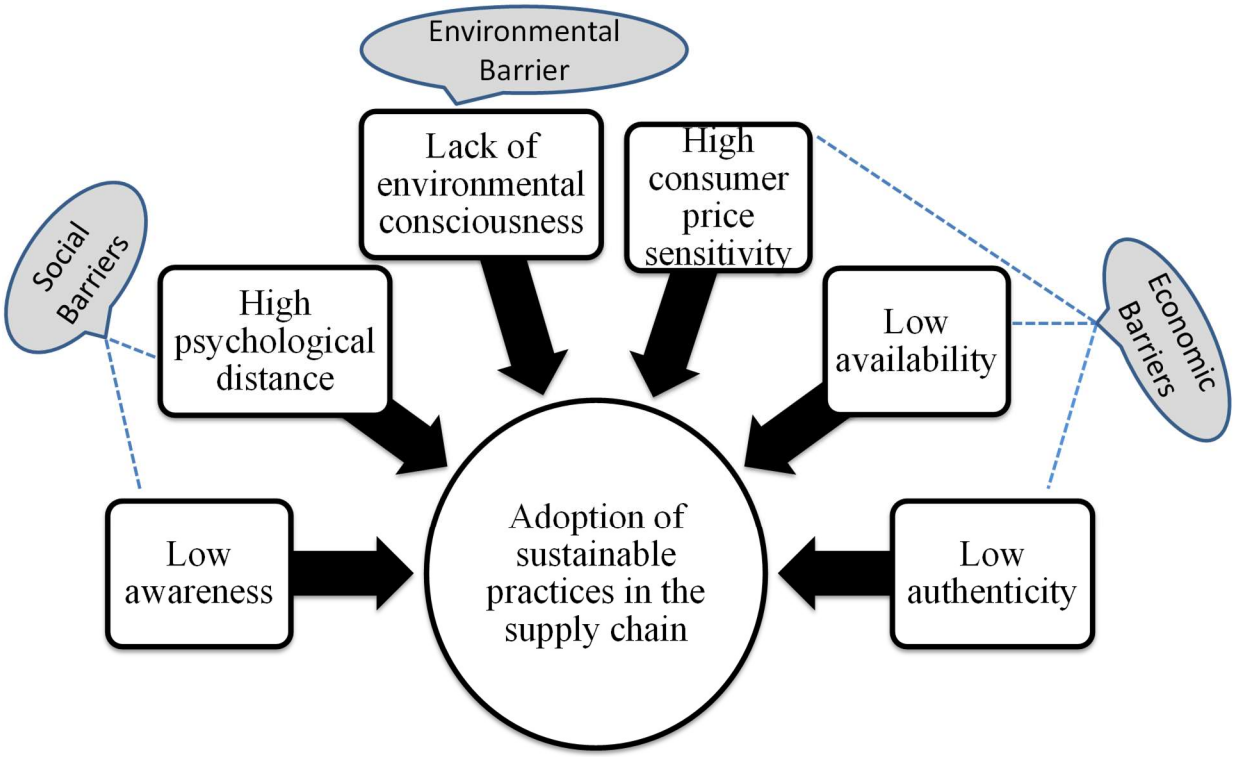

Figure 1: Overview of the various factors

3. Multiple Stakeholder Group Model Building: Case of Sustainable Food Supply Chain

Following the propositions derived from literature on barriers towards adopting sustainable products considering various stakeholders, we qualitatively test the evidence of such barriers (economic, social and environmental) in the case of the sustainable food supply chain using group model building (Richardson & Andersen, 1995; Vennix, 1996, 1999). Sustainable or organic agriculture avoids or largely excludes the use of genetically modified crops, chemical fertilizers, pesticides, and growth regulators. The main aim of sustainable agriculture is to ensure sustained

productivity while providing environmental protection. It also contributes to the social well-being of farmers who were earlier exposed to unhygienic work environments due to pesticide exposure. It follows principles such as (a) on-farm waste recycling, (b) non-chemical weed management, (c) biological pest control, (d) Integrated nutrient management for sustaining soil fertility and crop productivity, (e) farmer welfare in the form of fair trade compliances. The area under organic farming reached an all-time high in 2016, with 57.8 million hectares of land under organic agriculture worldwide. The countries with the largest market for organic food are the United States (45.5 billion USD), followed by Germany (11.1 billion USD), France (7.8 billion USD) and China (6.9 billion USD) (Willer et al., 2018).

According to the National Standards for Organic Production(NSOP) in India, a producer seeking certification under it, is required to develop an organic crop production plan. This plan includes:

i. Various practices and procedures to be performed and maintained.
ii. List of inputs used in production, their composition, usage, and application.
iii. Source of organic planting material(seeds and seedlings).
iv. Description of audits to be performed to verify proper implementation.
v. Description of management practices to prevent the interaction of organic farms with conventional farms.
vi. Description of the book-keeping system for data recording.

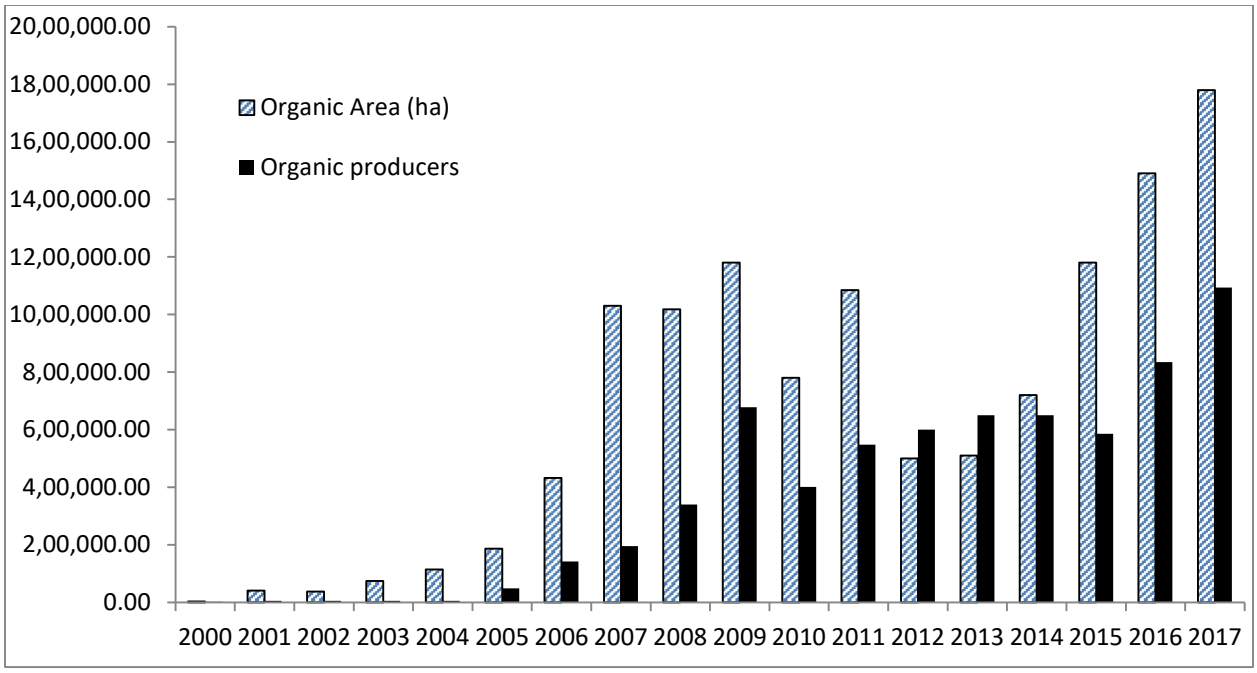

Fig 2: Growth of organic agriculture in India (Source: FiBL, 2020)

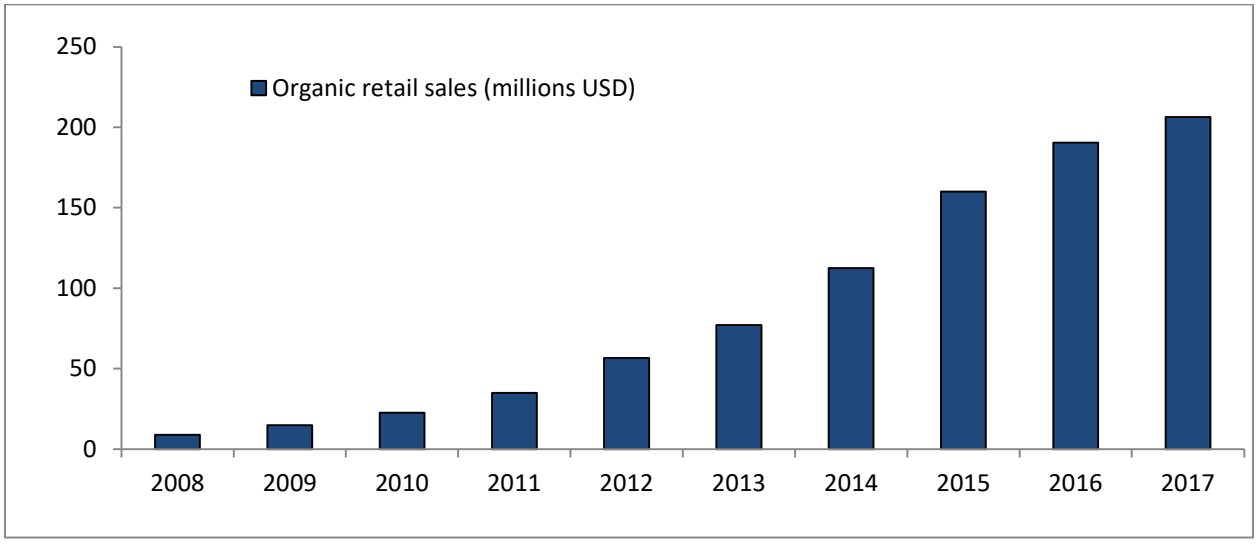

Fig 3: Organic retail sales in India (million USD)

Organic farming in India showed considerable growth over the years as shown in Figure 1. The country has roughly 2 million hectares of land that are certified as organic by third-party. However, still, the area under organic farming accounts for only 0.99% of the total area under cultivation in the country despite the steady increase in demand, as shown in Figure 2. Hence, this becomes a compelling case of discussion.

3.1 Methodology

The study uses the group model building technique (Vennix, 1996) which is based on the system dynamics methodology. In group model building, the members exchange their perception of the problem, discuss the issues they feel are important and come out with suggestions for improvement. Whenever there are conflicting opinions, it is put forward for further discussion and deliberation. The members understand the intricacies of the underlying system by evaluating the outcome of the actions from different angles, thus having a holistic or bird's eye view of the situation (Andersen, Richardson & Vennix, 1997). The goal of many organizational interventions is to change people's behavior. According to Ajzen's well-known theory of planned behavior (Ajzen, 1991), one necessary prerequisite for behavioral alteration is a change of attitude. Exploratory research shows that group model building can aid in bringing about a change in attitudes towards a proposed policy (Vennix et al., 1996).

At the group level, the goals of group model building have been described as:

1. mental model alignment (Huz et al., 1997);

2. creating agreement (consensus) about a policy or decision;

3. generating commitment to a decision (Rohrbaugh, 1992; Senge, 1990; Vennix, 1996; Winch, 1993).

Among the different methods used for group model building, the method used in this paper is based on the systems method outlined in Cavana et al. (1999) where hexagons are used to facilitate the group model building. It drew insights from Hodgson (1992) where hexagons are used as a flexible mapping technique to bridge the gap between thoughts and models and Kreutzer's (1995) FASTbreakTM process using hexagons to create causal loop diagrams.

Before the group model building exercise, attempts were made to come up with a general problem statement. First, a Behavior Over Time (BOT) graph was developed. Further, stakeholder analysis was conducted to identify the stakeholders interacting in the sustainable food supply chain.

Table 2: Methodological framework

Phases	Steps
Problem structuring and development	Behavior over time chart
Group model building	Stakeholder analysis
	Hexagon generation
	Cluster formation
	Variable identification
	Causal loop diagram

3.2 Problem Description

With a view of having a systematic understanding of the problem, the first phase of the study was a problem description exercise. Two steps were used in problem structuring vis-à-vis, developing a BOT chart (Figures 1 and 2) and conducting stakeholder analysis (Elias, 2008).

A BOT chart gives a 'reference mode behavior' which can be used to show how a system behaves over time, typically several months to several years. It indicates the level and trend behavior of the variables under study be it growth, decline or oscillations. It captures the overall trends, directions, and variations, and need not indicate the numerical values of the variable.

The second step in problem description consisted of identification and analysis of stakeholders related to the problem statement. Freeman's (1984) book *Strategic Management: a Stakeholder Approach* was used as input for stakeholder analysis. Freeman proposes three levels of stakeholder analysis: rational, process and transactional. A generic stakeholder map is used as the starting point. This was followed by eight steps (Elias, Cavana & Jackson, 2002): (i) Preparation of stakeholder chart; (ii) Mapping stakeholder interests; (iii) preparing power versus stake grid; (iv) hosting a process-level stakeholder analysis; (v) a transaction-level stakeholder analysis; (vi) determining the management capability; (vii) analysis of stakeholder salience; (viii) examining the changing position and interests of the stakeholder.

Table 3 shows the stakeholders who were part of the study. The description of the remaining steps is out of the scope of this paper. The stakeholder analysis helped in developing a structured process

so that various facets of the problem are examined and analyzed from a multiple stakeholder perspective.

3.3 Group Model Building

With group model building, decision makers get a clear picture of behavior of complex dynamic systems for easier decision making (Andersen et al., 1997). In the second phase, we sent formal invitation letter to 40 individuals representing various stakeholders in a sustainable food supply chain. This was followed by a series of personal meetings and follow-up phone calls by members of the research team comprising the authors and two research assistants. Finally, 26 stakeholders belonging to 11 different categories as identified in Table 3, participated in the group model building session. Table 3 also provides a brief overview of the profile of various stakeholders who participated in the group model building exercise.

Table 3: Profile of various stakeholders who participated in the group model building

Stakeholder	Number of participants	Designation	Mean Experience (years)
Fertilizer and pesticide manufacturers	3	(1 Chief Manager + 2 Senior Managers)	22
Government Officials	4	2 Deputy Directors in Agriculture + 2 Regional Agriculture Officers	15
Soil scientist	1	Senior scientist	20
Health specialist	1	Senior consultant, Radiation oncology	35
Organic farmers	3	-	8
Conventional farmers	4	-	12
Conventional retailers	2	-	10
Organic retailers	2	-	4
Conventional consumers	4	2 graduate students, 2 homemakers	-
Organic consumers	2	2 graduate students	-

The session began with familiarizing the participants about the procedure of group model building using a 10-minute presentation. Thereafter, the principal investigator moderated the session which was conducted in the regional language. The session was completely transcribed by two research assistants which were later checked for consistency by two others with the video recordings of the proceedings. The session proceeded with the following steps:

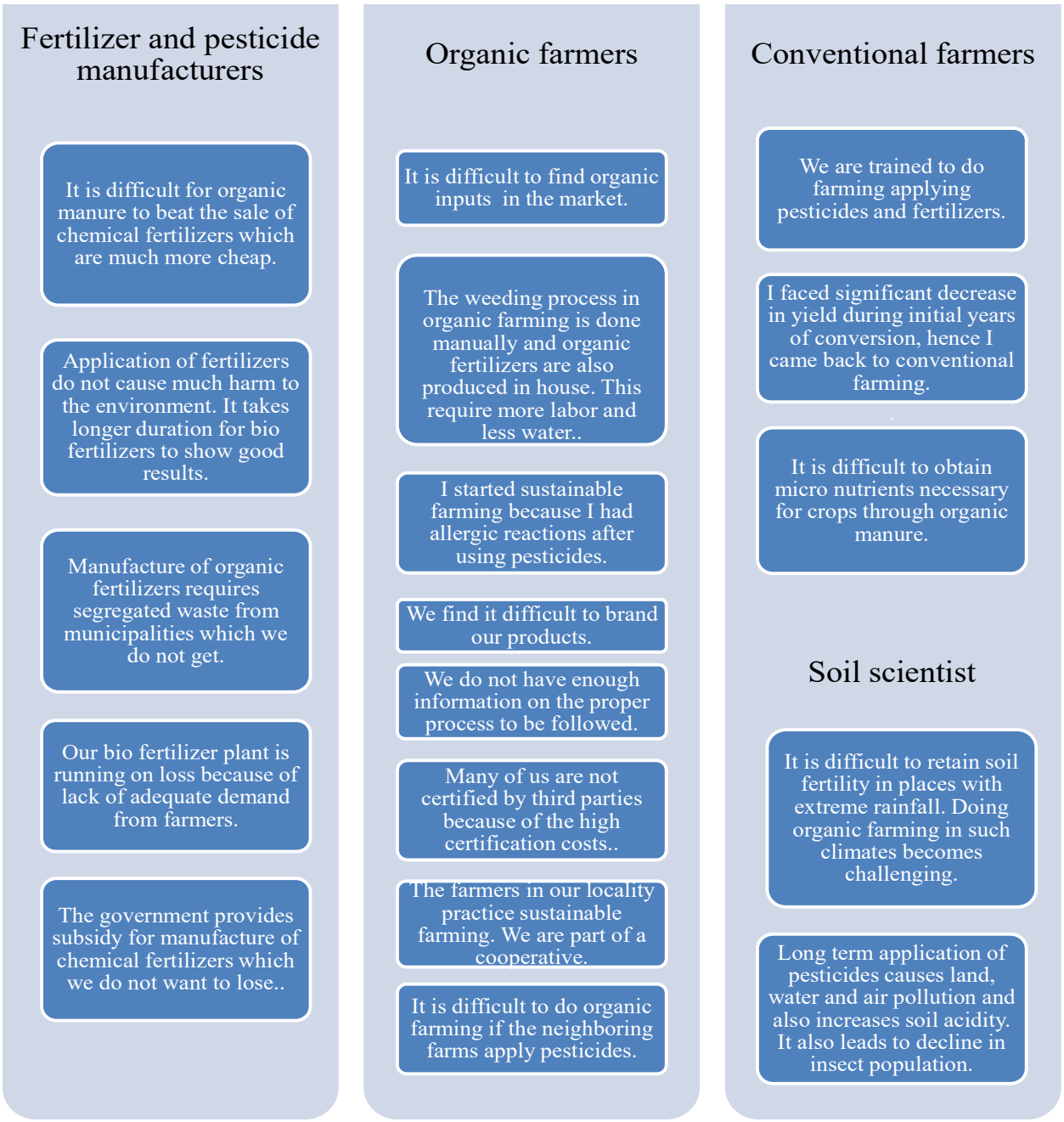

Fig 5: View of various stakeholders- Part 1

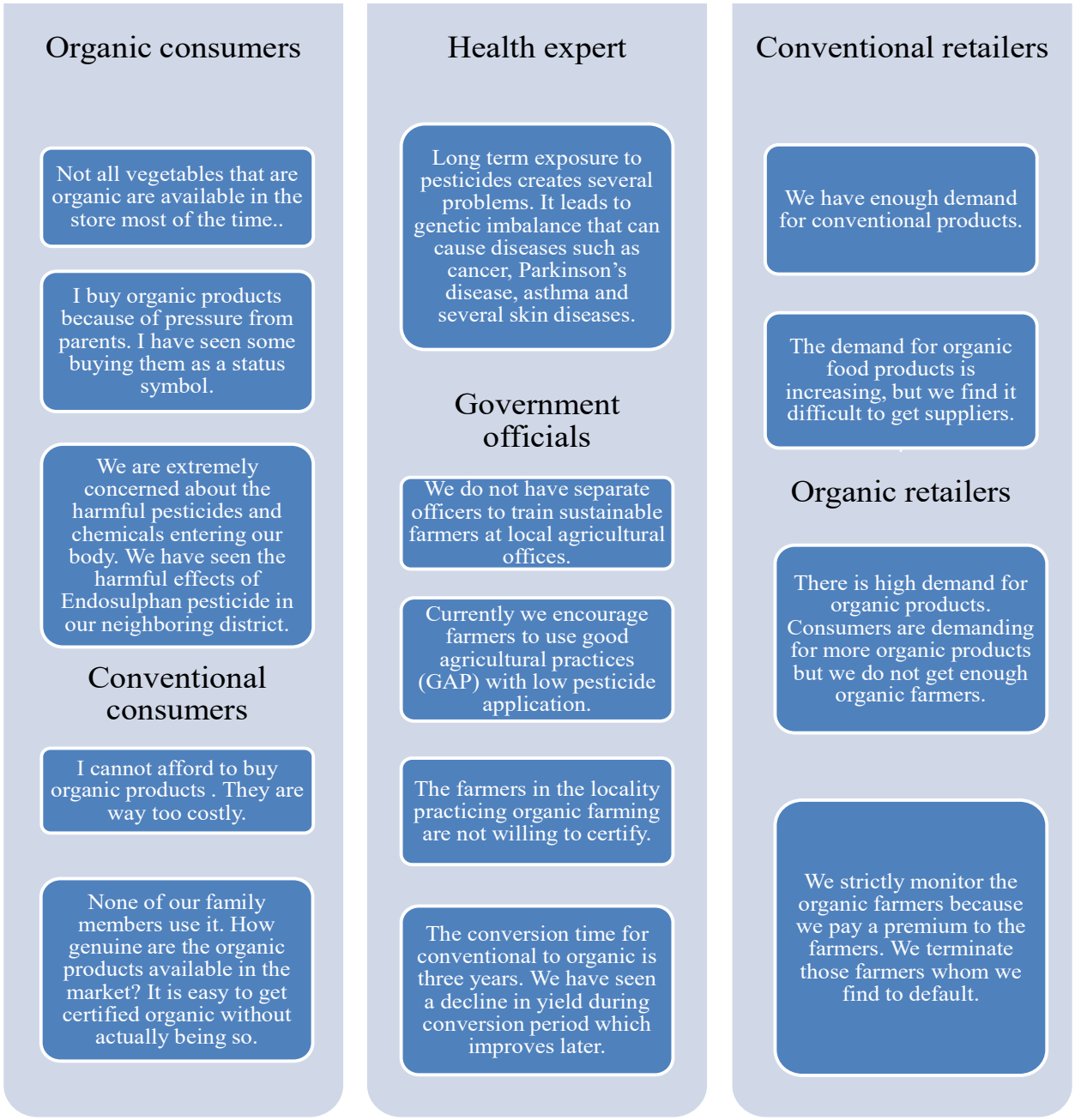

Fig 4: View of various stakeholders-Part2

Step 1 : *Hexagon generation*

During the process, the stakeholders identified opportunities, issues, and threats. It was facilitated by an organizing question *'What are the factors that hinder the adoption of sustainability in food*

by various stakeholders?' The issues identified by various stakeholders are shown in figures 5 and 6. The group then collectively identified the factors from these excerpts which were captured using hexagons. The stakeholders who attended the session generated a total of 47 hexagons, out of which elements having commonality were removed to come up with a final list of 25 hexagons.

Step 2 : *Cluster formation*

After the identification of hexagons, the stakeholders were asked to cluster them into similar groups, based on whether the issue was economic, social or environmental.

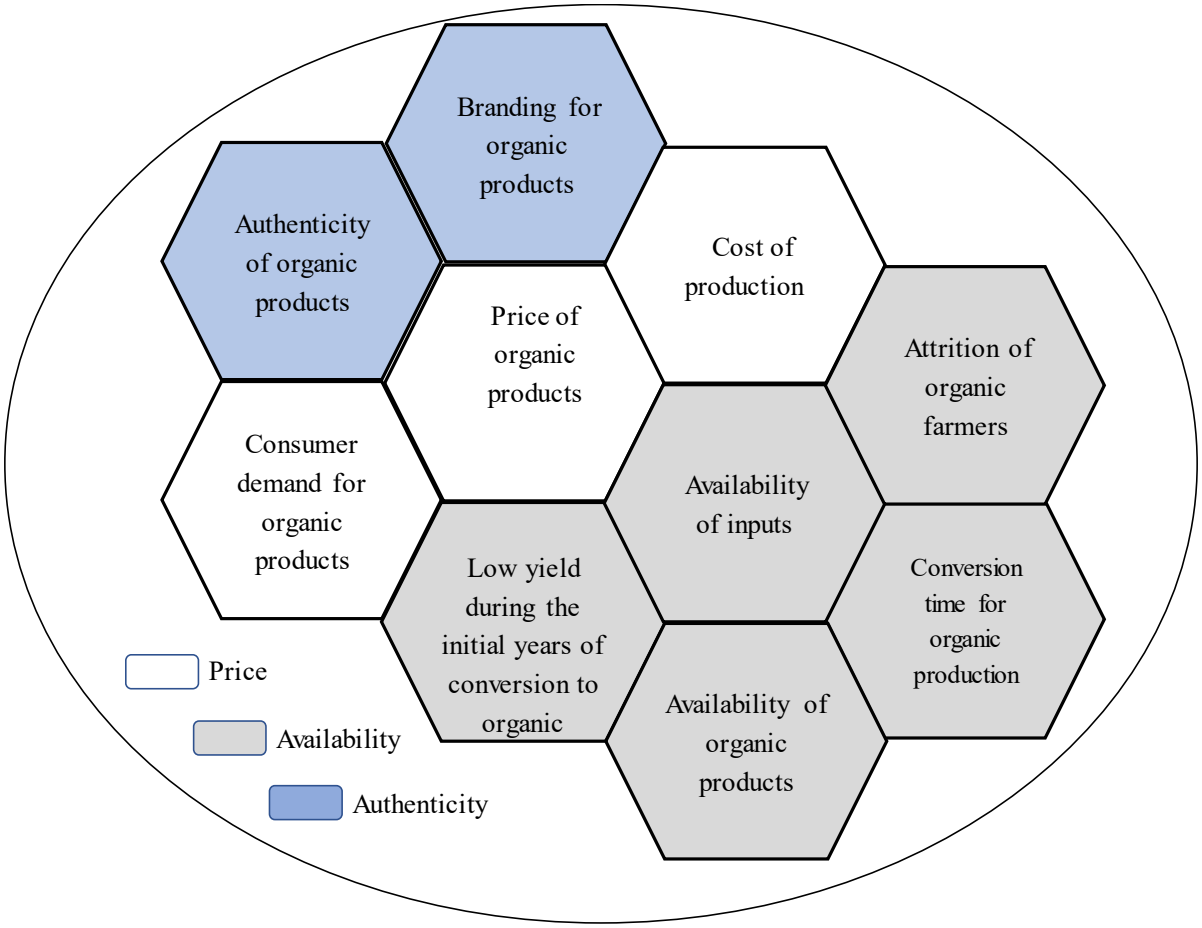

Fig 5: First Cluster reflecting economic issues

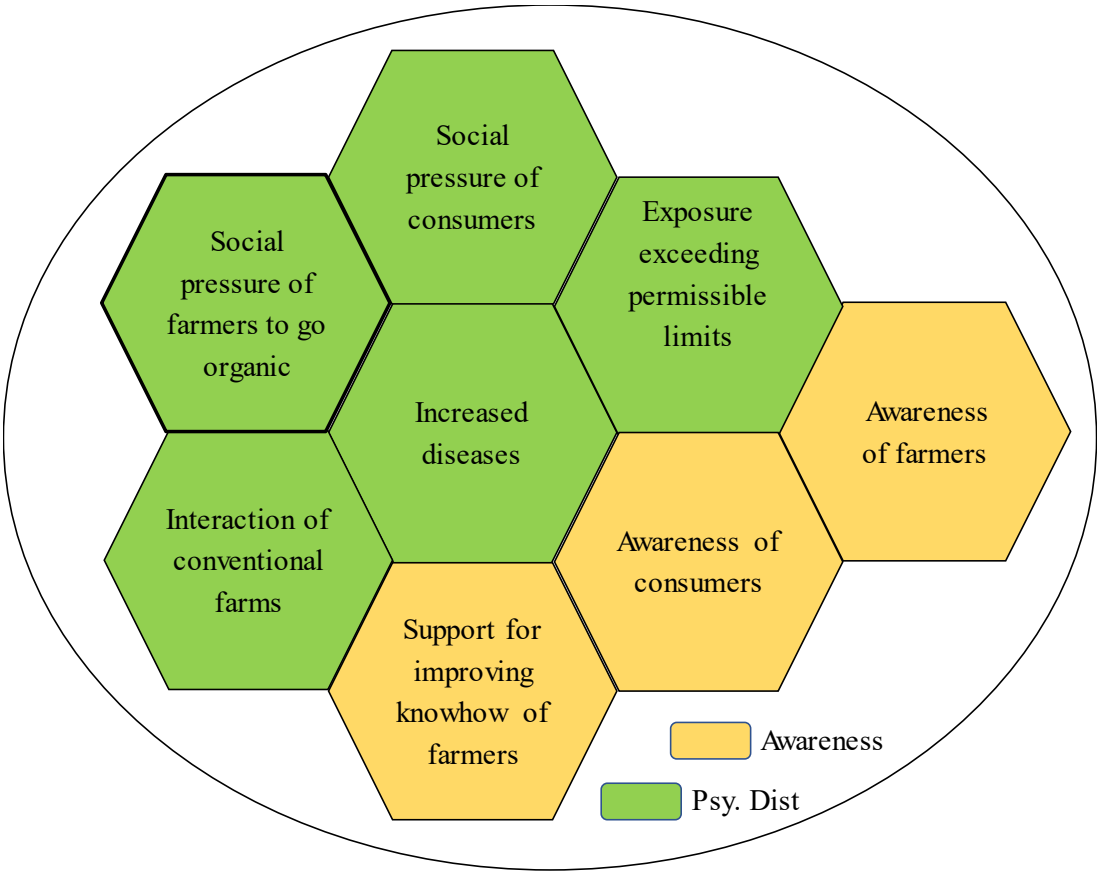

Fig 6: Second Cluster reflecting social issues

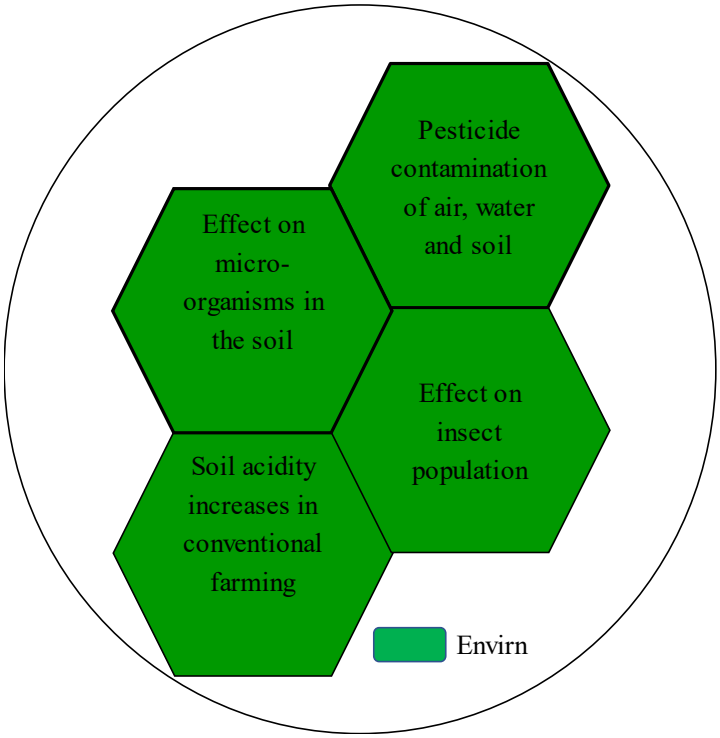

Fig 7: Third Cluster reflecting environmental issues

Step 3 : *Variable Identification*

The stakeholders then identified a few variables associated with the hexagons in the clusters. The 32 variables are:

Table 4: List of constructs/variables identified

#	Construct/Variable	#	Construct/Variable
1	Availability	17	Social pressure of farmers
2	Branding	18	Pollution of mother earth
3	Communication	19	Interaction of conventional farms
4	Authenticity	20	Integrated farming practices
5	Price of organic products	21	Pesticide usage during handling and storage
6	Quality perception	22	Yield
7	Demand	23	Availability of in house organic manure
8	Cost of production	24	Soil acidity
9	Availability of inputs	25	Conventional fertilizer and pesticide usage
10	Price of conventional products	26	Cold chain facility
11	Cost of certification	27	Exposure to pesticides
12	Attrition of organic farmers	28	Genetic imbalance
13	Social pressure of consumers	29	Unhealthy family members
14	Fear of crop failure	30	Support for increasing farmer knowhow
15	Minimum support price (MSP) for organic products	31	Population surge
16	Number of certified farmers	32	Conversion time

Step 4: Causal loop development and sector diagrams

As part of the causal loop development, the stakeholders established the links between the variables with the help of directed arrows. A positive(+) sign was placed next to the head of the arrow if an increase (or decrease) at the tail end of the arrow caused a corresponding increase (or decrease) of the variable near the head of the arrow. If an increase (or decrease) of the variable at the head of the arrow caused an opposite effect on the variable at the tail end, a negative(-) sign was placed next to the head. An initial model of the group model building exercise was developed. At the end of the group model building exercise, a general agreement was obtained on the arrived causal loop diagram from the stakeholders who participated in the exercise. The sector diagram (Figure 11) shows the interaction of various social, economic and environmental barriers.

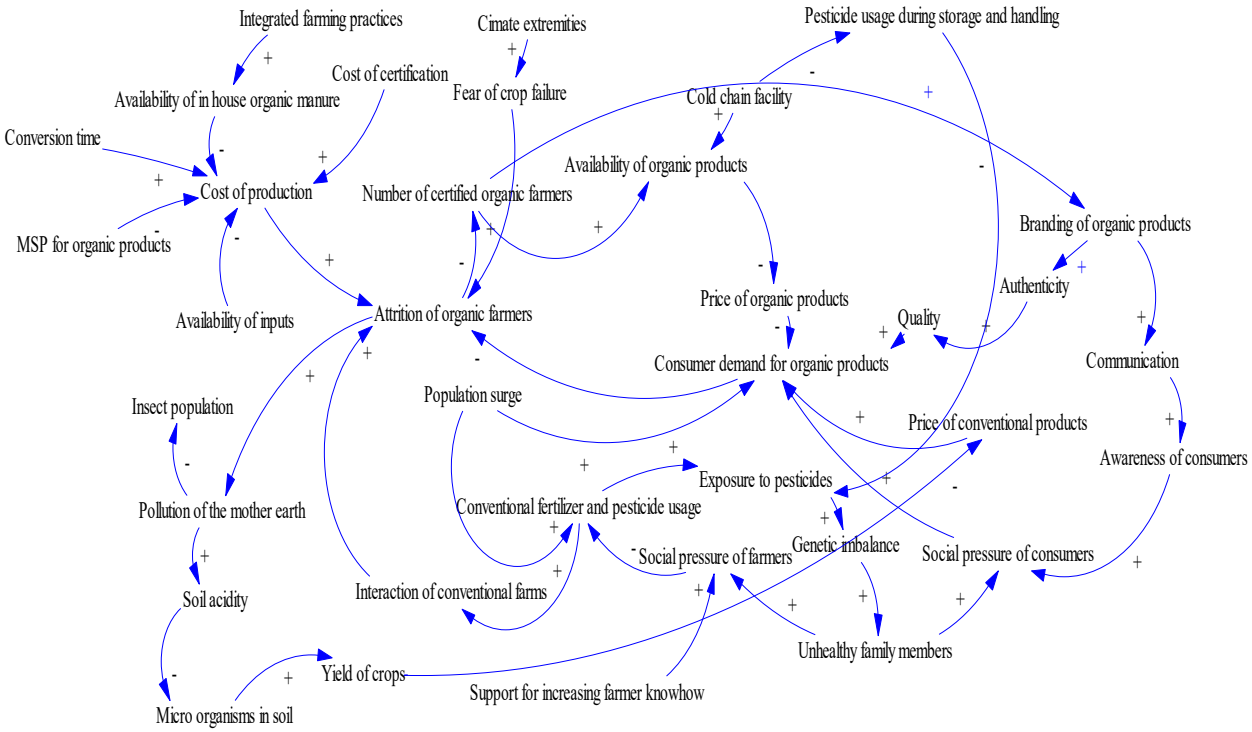

Fig 8: Causal loop diagram of social, environmental, and economic barriers

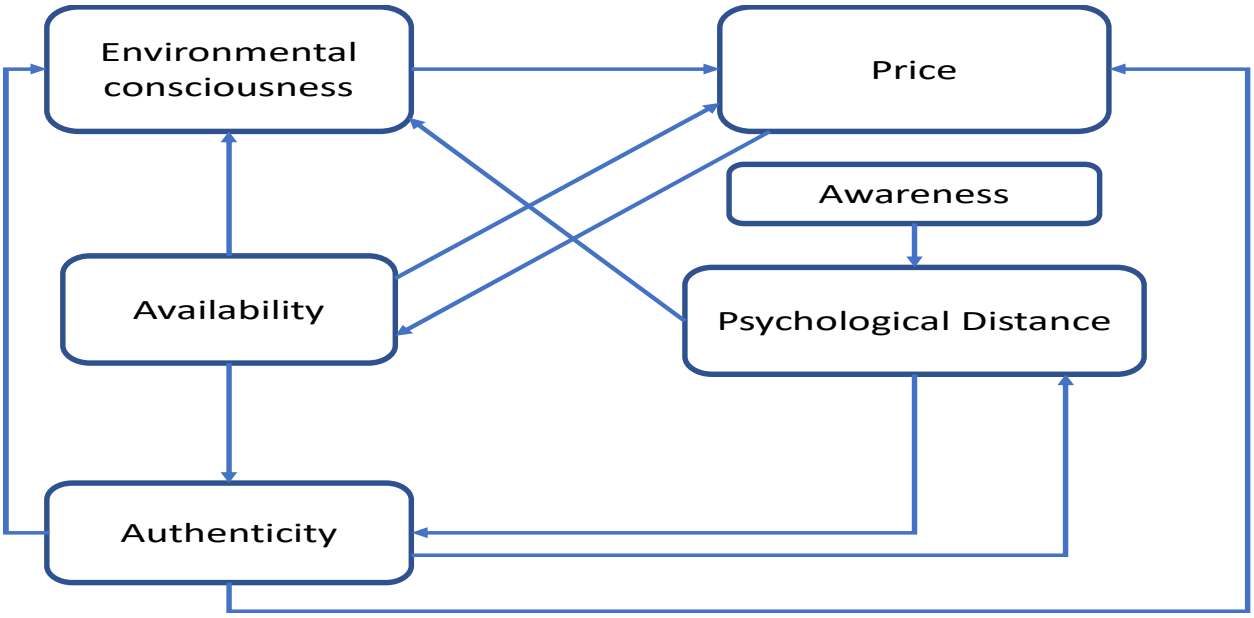

Fig 91: Sector diagram depicting the interaction between various factors

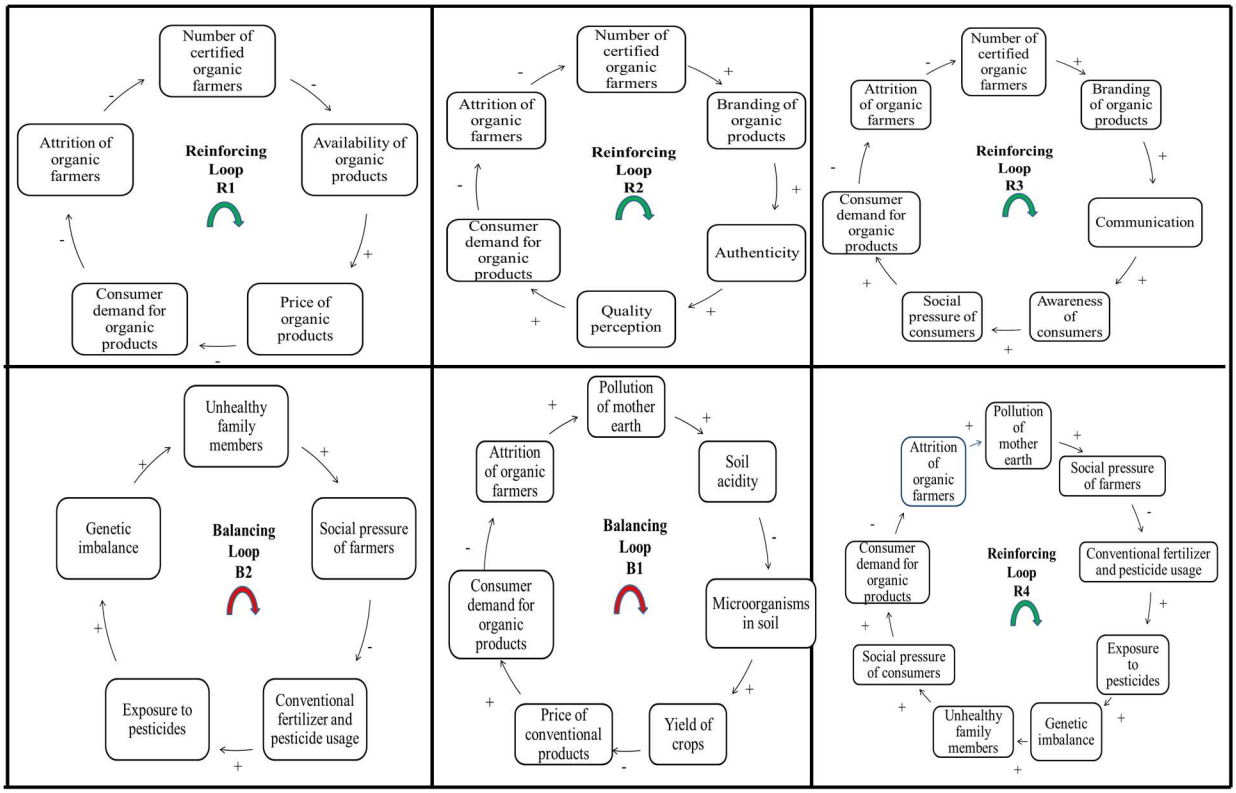

Fig 10: Overview of various reinforcing and balancing loops

4. Discussion

Our review of the existing literature incorporating multiple stakeholders in the sustainable supply chain helps in developing a comprehensive understanding of the most significant barriers in ensuring sustainability compliances in supply chains. We analyzed the barriers from three crucial dimensions of sustainability, vis-a-vis, economic, social, and environmental. We use it to gain insights into how such barriers adversely impact the sustainability adoption by multiple stakeholders. Stakeholder pressure has a significant impact on a firm's decisions. However, it remains unclear in the existing literature whether such approaches alone can lead to an increase in the responsible behavior of supply chains (Meixell & Luoma, 2015). We therefore critically analyzed the existing literature which is largely scattered across individual stakeholders, to evaluate it from the perspective of multiple stakeholders in the supply chain. Furthermore, a set of propositions results from a gap analysis of the literature. Further, we were able to qualitatively derive evidence in support of the propositions through group model building in a sustainable food supply chain.

A primary conclusion from this review and following group model building exercise is that several common barriers influence the supply chains in its progression towards sustainability adoption. We also find that the barriers are not mutually exclusive (see sector diagram in Figure 11); there are several instances where the factors identified by multiple stakeholders mutually interact and influence each other in a dynamic environment. From the causal loop diagram (Figure 10), and loops R3, R4, R4 and B1, R1 and B1, R2 and R1 respectively, we find support for Propositions 1, 2, 3, 4, 5, and 6. This can be of benefit both to practitioners and academicians. The finding can help the supply chain managers to strategically align their collaboration activities to include external stakeholders such as NGOs and government to collectively work towards sustainability adoption in supply chains. Future researchers can empirically investigate the magnitude of such interactions through multiple case studies across industries. Georgiadis and Besiou (2008) examine the impact of technological innovation of closed-loop supply chains through a real-world case study of the electrical equipment supply chain in Greece. Similar extensions to analyze the interaction of social, economic, and environmental barriers in the context of sustainable supply chains can provide valuable insights.

Another conclusion from this research is that there are reinforcing loops and balancing loops emerging from the interaction between various factors. We find that there are three reinforcing loops (R1, R2, and R3) and one balancing loop (B1) involving attrition of organic farmers. This indicates that, in the absence of suitable intervention like increasing the awareness of stakeholders, improving the availability of inputs, or if certain key variables in such loops are ignored in the analysis if the system, the system might collapse to a *tragedy of commons* archetype i.e. continuous exploitation of resources leading to degradation of the ecosystem. This is helpful for decision-makers and regulators dealing with sustainable supply chain management issues to understand how various interventions targeted at one part of the supply chain, impact other stakeholders in the system. Future researchers can demonstrate these using numerical examples to provide a better understanding of the magnitude of impact when it comes to interventions.

Also, this study shows why incorporating sustainability becomes challenging for an individual firm. Hence, policymakers need to ensure that compliance requirements are framed in the order of priority which is different for different stakeholders. This can provide long-term benefits and improve the adoption of sustainability in supply chains.

5. Limitations and Directions for Future Research

The limitations of the present study are primarily based on the inclusion and exclusion criteria used in the collation of literature. We do not consider conference proceedings (e.g., some with a reputation of quality). Another limitation is the choice of keywords which might have affected the scope of articles covered in the study.

Secondly, our propositions considered in full may be difficult to test empirically through surveys or experiments since it involves multiple stakeholders. Researchers could test the propositions among individual stakeholders to seek validity. In doing so, a comparison between the evidence gathered through group model building and other methods such as survey among multiple stakeholders can provide much deeper insights.

Thirdly, we find only limited evidence for the influence of psychological distance on stakeholder decision making, with only inter-personal distance emerging from group model building. Future studies can explore how other aspects of psychological distance such as time, physical space,

likelihood of occurrence, informational distance, experiential distance, affective distance, and perspective distance impact stakeholder decision-making.

Finally, we qualitatively test the propositions through group model building involving stakeholders in a sustainable food supply chain. Researchers could examine the validity of propositions in an entirely different context after identifying the relevant stakeholders in their chosen supply chain. This can improve the generalizability of our findings.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, *50*(2), 179-211.

Amos, C., Brockhaus, S., Fawcett, A. M., Fawcett, S. E., & Knemeyer, A. M. (2019). Blinded by the light? Analyzing sustainability authenticity, customer service perceptions, and halo effects. *The International Journal of Logistics Management*, *30(1)*, 117-139.

Andersen, D. F., Richardson, G. P., & Vennix, J. A. (1997). Group model building: adding more science to the craft. *System dynamics review*, *13*(2), 187-201.

Anisul Huq, F., Stevenson, M., & Zorzini, M. (2014). Social sustainability in developing country suppliers: An exploratory study in the ready made garments industry of Bangladesh. *International Journal of Operations & Production Management*, *34*(5), 610-638.

Antonetti, P., & Maklan, S. (2014). Exploring post consumption guilt and pride in the context of sustainability. *Psychology & Marketing*, *31*(9), 717-735.

Baddeley, A. D., & Hitch, G. (1993). The recency effect: Implicit learning with explicit retrieval?. *Memory & Cognition*, *21*(2), 146-155.

BBC (2013), "Dhaka building collapse: factories and buyers", available at: www.bbc.co.uk/news/world-asia-22474601 (accessed 2 November 2018).

Becker, M. H. (1974). The health belief model and sick role behavior. *Health education monographs*, *2*(4), 409-419.

Bettman, J. R., Luce, M. F., & Payne, J. W. (1998). Constructive consumer choice processes. *Journal of consumer research*, *25*(3), 187-217.

Brewerton, P., & Millward, L. (2001). Organizational research methods. London: Sage.

Brundtland, G. H. (1987). *Report of the World Commission on environment and development: our common future.",* United Nations.

Byrne, B. M., & Van de Vijver, F. J. (2010). Testing for measurement and structural equivalence in large-scale cross-cultural studies: Addressing the issue of nonequivalence. *International Journal of Testing*, *10*(2), 107-132.

Cavana, R. Y., Davies, P. K., Robson, R. M., & Wilson, K. J. (1999). Drivers of quality in health services: different worldviews of clinicians and policy managers revealed. *System Dynamics Review: The Journal of the System Dynamics Society*, *15*(3), 331-340.

Cerri, J., Testa, F., & Rizzi, F. (2018). The more I care, the less I will listen to you: How information, environmental concern and ethical production influence consumers' attitudes and the purchasing of sustainable products. *Journal of Cleaner Production*, *175*, 343-353.

Connell, K. Y. H. (2010). Internal and external barriers to eco-conscious apparel acquisition. *International Journal of Consumer Studies*, *34*(3), 279-286.

Corral, C. M. (2003). Sustainable production and consumption systems—cooperation for change: assessing and simulating the willingness of the firm to adopt/develop cleaner technologies. The case of the In-Bond industry in northern Mexico. *Journal of cleaner production*, *11*(4), 411-426.

Davidov, E., Meuleman, B., Cieciuch, J., Schmidt, P., & Billiet, J. (2014). Measurement equivalence in cross-national research. *Annual Review of Sociology*, *40*.

Davidov, E., Meuleman, B., Cieciuch, J., Schmidt, P., & Billiet, J. (2014). Measurement equivalence in cross-national research. *Annual Review of Sociology*, *40*.

De Beuckelaer, A., & Swinnen, G. (2011). Biased latent variable mean comparison due to measurement noninvariance. In E. Davidov, P. Schmidt, & J. Billiet (Eds.), Cross-Cultural Analysis: Methods and Applications. New York: Rout

de Groot JIM, Steg L. 2008. Value orientations to explain beliefs related to environmental significant behavior: how to measure egoistic, altruistic, and biospheric value orientations. Environment and Behavior 40(3): 330–354.

de Medeiros, J. F., & Ribeiro, J. L. D. (2017). Environmentally sustainable innovation: Expected attributes in the purchase of green products. *Journal of cleaner production*, *142*, 240-248.

Diwekar, U. (2005). Green process design, industrial ecology, and sustainability: A systems analysis perspective. *Resources, conservation and recycling*, *44*(3), 215-235.

Dowling: 2001, *Creating Corporate Reputation. Identity, Image, Performance* (Oxford University Press, Oxford).

Elias, A. A. (2008). Energy efficiency in New Zealand's residential sector: A systemic analysis. *Energy policy*, *36*(9), 3278-3285.

Elias, A. A., Cavana, R. Y., & Jackson, L. S. (2002). Stakeholder analysis for R&D project management. *R&D Management*, *32*(4), 301-310.

Fernandez, B., (2001). "Hershey Foods Corp. 'shocked' that its candy may be tainted by slave labor*"*, Retrieved from https://www.inquirer.com/news/hershey-shocked-kisses-tainted-by-slave-labor-20200106.html

Fiedler, K. (2007). Construal level theory as an integrative framework for behavioral decision-making research and consumer psychology. *Journal of Consumer Psychology*, *17*(2), 101-106.

Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge university press.

Guardian (2013), "Bangladeshi factory deaths spark action among high-street clothing chains", available at: www.guardian.co.uk/world/2013/jun/23/rana-plaza-factory-disaster-bangladesh-primark (accessed 2 November 2018).

Hansla A, Gamble A, Juliusson A, Ga¨rling T. 2008. The relationships between awareness of consequences, environmental concern, and value orientations. Journal of Environmental Psychology 28(1): 1–9.

H. Hoehle, E. Scornavacca, S. Huff, Three decades of research on consumer adoption and utilization of electronic banking channels: a literature analysis, Decision Support Systems 54 (2012) 122–132.

Hauser, J. R., Urban, G. L., & Weinberg, B. D. (1993). How consumers allocate their time when searching for information. *Journal of Marketing Research*, 452-466.

Hodgson, A. M. (1992). Hexagons for systems thinking. *European Journal of Operational Research*, *59*(1), 220-230.

Holbrook, M. B. (Ed.). (1999). *Consumer value: a framework for analysis and research*. Psychology Press

Huffington Post (2013), "In first interview since Bangladesh factory collapse, Benetton CEO confirms company's tie to tragedy", 8 May, available at: www.huffingtonpost.com/2013/05/08/benetton-bangladesh-factory-collapse_n_3237991.html (accessed 2 November 2018).

Huz, S., Andersen, D. F., Richardson, G. P., & Boothroyd, R. (1997). A framework for evaluating systems thinking interventions: an experimental approach to mental health system change. *System Dynamics Review: The Journal of the System Dynamics Society*, *13*(2), 149-169.

Igbaria, M., Parasuraman, S., & Baroudi, J. J. (1996). A motivational model of microcomputer usage. *Journal of management information systems*, *13*(1), 127-143.

Jacobs, B. W., & Singhal, V. R. (2017). The effect of the Rana Plaza disaster on shareholder wealth of retailers: Implications for sourcing strategies and supply chain governance. *Journal of Operations Management*, *49*, 52-66.

Jöreskog, K. G. (1971). Simultaneous factor analysis in several populations. *Psychometrika*, *36*(4), 409-426.

Kaptein, M., & Wempe, J. (2001). Sustainability Management: Balancing Conflicting Economic, Environmental and Social Corporate Responsibilities. *Journal of Corporate Citizenship*, (2), 91-106.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2009). *Governance matters VIII: Aggregate and individual governance indicators 1996-2008*. The World Bank.

Kreutzer, D. P. (1995). FASTBreak: a facilitation approach to systems thinking breakthroughs. *Learning Organizations: Developing Cultures for Tomorrow's Workplace, Productivity Press, Portland, OR*, 229-241.

Kronthal-Sacco, R., Whelan, T., Van Holt, T., & Atz, U. (2019). Sustainable Purchasing Patterns and Consumer Responsiveness to Sustainability Marketing. *Available at SSRN 3465669*.

Kirscht, J. P. (1974). The health belief model and illness behavior. *Health Education Monographs*, *2*(4), 387-408.

Mathivathanan, D., Kannan, D., & Haq, A. N. (2018). Sustainable supply chain management practices in Indian automotive industry: A multi-stakeholder view. *Resources, Conservation and Recycling*, *128*, 284-305.

Mauerhofer, V. (2008). 3-D Sustainability: An approach for priority setting in situation of conflicting interests towards a Sustainable Development. *Ecological economics*, *64*(3), 496-506.

Milkman, K. L., Rogers, T., & Bazerman, M. H. (2008). Harnessing our inner angels and demons: What we have learned about want/should conflicts and how that knowledge can help us reduce short-sighted decision making. *Perspectives on Psychological Science*, *3*(4), 324-338.

Mishra, A., & Mishra, H. (2011). The influence of price discount versus bonus pack on the preference for virtue and vice foods. *Journal of Marketing Research*, *48*(1), 196-206.

Mishra, A., & Mishra, H. (2011). The influence of price discount versus bonus pack on the preference for virtue and vice foods. *Journal of Marketing Research*, *48*(1), 196-206.

Okada, E. M. (2005). Justification effects on consumer choice of hedonic and utilitarian goods. *Journal of marketing research*, *42*(1), 43-53.

Potter, W. J., & Levine-Donnerstein, D. (1999). Rethinking validity and reliability in content analysis. Journal of Applied Communication Research, 27(3), 258–284.

Prabha, C., Silipigni Connaway, L., Olszewski, L., & Jenkins, L. R. (2007). What is enough? Satisficing information needs. *Journal of documentation*, *63*(1), 74-89.

Ratchford, B. T. (1982). Cost-benefit models for explaining consumer choice and information seeking behavior. *Management Science*, *28*(2), 197-212.

Richardson, G. P., & Andersen, D. F. (1995). Teamwork in group model building. *System Dynamics Review*, *11*(2), 113-137.

Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change1. *The journal of psychology*, *91*(1), 93-114.

Rohrbaugh, J. W. 1992. Collective Challenges and Collective Accomplishments. In Computer Augmented Team Work: A Guided Tour, ed. R. P. Bostron, R. T. Watson and S. T. Kinney, 299–324. New York: Van Nostrand Reinhold.

Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health education monographs*, *2*(4), 328-335.

Rouwette, E. A., Vennix, J. A., & Mullekom, T. V. (2002). Group model building effectiveness: a review of assessment studies. *System Dynamics Review*, *18*(1), 5-45.

Schwartz, S. H. (1977). Normative influences on altruism. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 10, pp. 221–279). New York: Academic Press.

Schwartz SH. 1992. Universals in the content and structure of human values: theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology* 25: 1– 65.

Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values?. *Journal of social issues*, *50*(4), 19-45.

Senge, P. (1990). The fifth discipline: The art and science of the learning organization. *New York: Currency Doubleday*.

Sheth, Jagdish N., Bruce I. Newman, and Barbara L. Gross. "Why we buy what we buy: A theory of consumption values." *Journal of business research* 22.2 (1991): 159-170.

Smith, G.E., Venkatraman, M.P. & Dholakia, R.R. (1999) Diagnosing the search cost effect: waiting time and the moderating impact of prior category knowledge. Journal of Economic Psychology, 20, 285– 314.

Solomon, M., Bamossy, G., Askegaard, S., Hogg, K.M. (2006), Consumer Behaviour: A European Perspective. Essex: Pearson Education Limited.

Steinmetz, H. (2013). Analyzing observed composite differences across groups. *Methodology*.

Sterman, J. D. (2001). System dynamics modeling: tools for learning in a complex world. *California management review*, *43*(4), 8-25.

Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human ecology review*, 81-97.

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological review*, *117*(2), 440.

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: suggestions, practices, and recommendations for organizational research. Organizational Research Methods, 3, 4–70.

Vennix, J. A. (1996). *Group model buildingfacilitating team learning using system dynamics* (No. 658.4036 V4).

Vennix, J. A. (1999). Group model-building: tackling messy problems. *System Dynamics Review: The Journal of the System Dynamics Society*, *15*(4), 379-401.

Wakefield, K. L., & Inman, J. J. (2003). Situational price sensitivity: the role of consumption occasion, social context and income. *Journal of Retailing*, *79*(4), 199-212.

Weible, C. M. (2007). An advocacy coalition framework approach to stakeholder analysis: Understanding the political context of California marine protected area policy. *Journal of public administration research and theory*, *17*(1), 95-117.

Wertenbroch, K. (1998). Consumption self-control by rationing purchase quantities of virtue and vice. *Marketing science*, *17*(4), 317-337.

Willer, H., Lernoud, J., Huber, B., & Sahota, A. (2018). The World of Organic Agriculture at BIOFACH 2018.

Williams HE, Medhurst J, Drew K. Corporate strategies for a sustainable future. In: Fisher K, Schot J, editors. Environmental strategies for industry: international perspectives on research needs and policy implications. Washington, DC: Island Press; 1993. p. 117e46.

Whelan, T., & Kronthal-Sacco, R. (2019). "Actually, consumers do buy sustainable products, *Harvard Business Review"*, Retrieved from https://hbr.org/2019/06/research-actually-consumers-do-buy-sustainable-products

Winch, G. W. (1993). Consensus building in the planning process: benefits from a "hard" modeling approach. *System Dynamics Review*, *9*(3), 287-300.

Winter, C. K., & Davis, S. F. (2006). Organic foods. *Journal of food science*, *71*(9), R117-R124

Appendix

Table A1: Classification of studies based on social, economic and environmental barriers

Category	Construct	Studies
Economic Barriers	Price	Bartels and Hoogendam (2011), Carey et al. (2011), Thogersen and Zhou (2012), Hoffmann and Schlicht (2013), Zagata (2014), Ellison et al. (2016), Rana and Paul (2017), Nuttavuthisit and Thogersen (2017), Goetzke et al. (2014), Chekima et al. (2017), Onozaka et al. (2011), Gottschalk and Leistner (2013), Chen et al. (2015), Bi et al. (2015), Hempel and Hamm (2016), Puska et al. (2016), Yadav (2016), Nie and Zepeda (2011), Rodiger and Hamm (2015), Ahmadi et al. (2017); Gopal and Thakkar (2016), Silvestre (2015), Glover et al. (2014), Ageron et al. (2012), Agrawal and Lee (2019), Agovino et al. (2017), Puska et al. (2017), Genovese et al. (2017), Hong et al. (2018), Meyerding and Merz (2018), Zhang et al. (2018), Seuring et al. (2019), Hong and Guo (2019), Tseng et al. (2019), Kaur and Singh (2019), Wolf (2014), Govindan et al. (2014), Seuring and Gold (2013), Chaabane et al. (2012), Wu and Pagell (2011), Zielke (2010), Bernard and Liu (2017), Brown et al. (2009), Chen et al. (2014), Gifford and Bernard (2011), Hidalgo-Baz et al. (2017), Hsu and Chen (2014), Hwang (2016), Marian et al. (2014), Meza and Park (2016), Richetin et al. (2016), Thøgersen et al. (2016), Ureña et al. (2008), Doorn et al. (2011)
	Authenticity	Bartels and Hoogendam (2011), Krystallis et al. (2012), Pino et al. (2012), Jensen and Mørkbak (2013), Çabuk et al. (2014), Ryan and Casidy (2018), Ness et al. (2010), Bartels and Reinders (2010), Pieniak et al. (2010), Tobler et al. (2011), de Maya et al. (2011), Lusk (2011), Bauer et al. (2013), Fernqvist and Ekelund (2014), Lee and Yun (2015), Yazdanpanah et al. (2015), Minton et al. (2015), Vitterso and Tangeland (2015), Bryla (2016), Teng and Lu (2016), Scalco et al. (2017), Hasimu et al. (2017), Thogersen (2017), Asif et al. (2018), Hsieh and Stiegert (2012), Aschemann-Witzel and Aagaard (2014), Daunfeldt and Rudholm (2014), Chen et al. (2015), Vassallo et al. (2016), Meyerding and Merz (2018), Nie and Zepeda (2011), Schuldt and Hannahan (2013),

		Puska et al. (2017), Sauer and Seuring (2019), Yusuf et al. (2019), Jadhav et al. (2019), Cole and Aitken (2019), Lee and Hwang (2016), Sirieix et al. (2011), Wilhelm et al. (2016)
	Availability	Bingen et al. (2011), Krystallis et al. (2012), Çabuk et al. (2014), Ellison et al. (2016), Rana and Paul (2017), Nuttavuthisit and Thogersen (2017), Pieniak et al. (2010), Tobler et al. (2011), Lusk (2011), Lee, et al. (2018), Denver and Jensen (2014), Vitterso and Tangeland (2015), Teng and Lu (2016), Hasimu et al. (2017), Hilverda et al. (2017), Olson (2017), Daunfeldt and Rudholm (2014), Bi et al. (2015), Yadav (2016), Zepeda and Deal (2009), Formentini andTaticchi (2016), Esfahbodi et al. (2016), Hsu et al. (2016), Eskandarpour et al. (2015), Boström et al. (2015), Lu and Gursoy (2017), Stolz et al. (2011),
Social Barriers	Awareness	Bingen et al. (2011), Thogersen and Zhou (2012), Krystallis et al. (2012), Bartels and Onwezen (2014), Chen et al. (2015), Bellotti and Panzone (2016), Nuttavuthisit and Thogersen (2017), Goetzke et al. (2014), Du et al. (2017), Singh and Verma (2017), Rana and Paul (2017), Chen and Chen (2019), Yu and Cruz (2019), Barbosa-Póvoa et al. (2018), Aschemann-Witzel et al. (2013), Prada et al. (2017), Teisl et al. (2009), Zhou et al. (2005), Meixell and Luoma (2015)
	Psychologic al distance	Krystallis et al. (2012), Welsch and Kühling (2009), de Maya et al. (2011), Vitterso and Tangeland (2015), Schill and Shaw (2016), Scalco et al. (2017), Hasimu et al. (2017), Rana and Paul (2017), Laureti and Benedetti (2018), Lee et al. (2011), Bi et al. (2015), Yadav (2016), Daunfeldt and Rudholm (2014), Rödiger and Hamm (2015), Bazzani et al. (2017), Zepeda and Deal (2009), Ivanov (2018), Rostamzadeh et al. (2018), Varsei and Polyakovskiy (2017), Juhl et al. (2017), Scarpa, and Thiene (2011), Zander and Hamm (2012), Sarkis et al. (2010)
Environmental Barriers	Lack of environment al consciousne ss	Carey et al. (2011), Peterson and Li (2011), Bingen et al. (2011), Krystallis et al. (2012), Pino et al. (2012), Jensen and Mørkbak (2013), Hoffmann and Schlicht (2013), Bartels and Onwezen (2014), de Magistris and Gracia (2014), Rana and Paul (2017), Arvola et al. (2008), Welsch and Kühling (2009), Ness et al. (2010), He et al. (2012), Zander et al. (2013), Denver and Jensen (2014), Fernqvist and Ekelund (2014), Vitterso and Tangeland (2015), Teng and Lu (2016), Hasimu et al. (2017), Chekima et al. (2017), Olson (2017), Laureti and Benedetti (2018), Lusk and Briggeman (2009), Hsieh and Stiegert (2012), Bi et al. (2015), Yadav (2016), D'Amico et al. (2016), Bravo et al. (2013), Spendrup et al. (2016), Mohsen and Dacko (2013), Rajiv et al. (2017), Mathivathanan et al. (2018), Seuring (2011), Aschemann-Witzel, and Zielke (2017), Costa et al. (2014), Lee (2008), Kauppinen-Räisänen et al. (2014), Kriwy and Mecking (2012), Michaelidou and Hassan (2008), Mørk et al. (2017), Moser (2016), Rajeev et al. (2017), Johnson (2015), Li et al. (2014)

References for the reviewed papers (N = 151)

Ageron, B., Gunasekaran, A., & Spalanzani, A. (2012). Sustainable supply management: An empirical study. International journal of production economics, 140(1), 168-182.

Agovino, M., Crociata, A., Quaglione, D., Sacco, P., & Sarra, A. (2017). Good Taste Tastes Good. Cultural Capital as a Determinant of Organic Food Purchase by Italian Consumers: Evidence and Policy Implications. Ecological Economics, 141, 66-75.

Agrawal, V., & Lee, D. (2019). The effect of sourcing policies on suppliers' sustainable practices. Production and Operations Management, 28(4), 767-787.

Ahmadi, H. B., Kusi-Sarpong, S., & Rezaei, J. (2017). Assessing the social sustainability of supply chains using Best Worst Method. Resources, Conservation and Recycling, 126, 99-106.

Arvola, A., Vassallo, M., Dean, M., Lampila, P., Saba, A., Lähteenmäki, L., & Shepherd, R. (2008). Predicting intentions to purchase organic food: The role of affective and moral attitudes in the Theory of Planned Behaviour. Appetite, 50(2), 443-454.

Aschemann-Witzel, J., & Niebuhr Aagaard, E. M. (2014). Elaborating on the attitude-behavior gap regarding organic products: young Danish consumers and in-store food choice. International Journal Of Consumer Studies, 38(5), 550-558. doi:10.1111/ijcs.12115

Aschemann-Witzel, J., & Zielke, S. (2017). Can't Buy Me Green? A Review of Consumer Perceptions of and Behavior Toward the Price of Organic Food. Journal Of Consumer Affairs, 51(1), 211-251. doi:10.1111/joca.12092

Aschemann-Witzel, J., Maroscheck, N., & Hamm, U. (2013). Are organic consumers preferring or avoiding foods with nutrition and health claims?. Food Quality and Preference, 30(1), 68-76.

Asif, M., Xuhui, W., Nasiri, A., & Ayyub, S. (2018). Determinant factors influencing organic food purchase intention and the moderating role of awareness: A comparative analysis. Food Quality and Preference, 63, 144-150.

Barbosa-Póvoa, A. P., da Silva, C., & Carvalho, A. (2018). Opportunities and challenges in sustainable supply chain: An operations research perspective. European Journal of Operational Research, 268(2), 399-431.

Bartels, J., & Hoogendam, K. (2011). The role of social identity and attitudes toward sustainability brands in buying behaviors for organic products. Journal Of Brand Management, 18(9), 697-708. doi:10.1057/bm.2011.3

Bartels, J., & Onwezen, M. C. (2014). Consumers' willingness to buy products with environmental and ethical claims: the roles of social representations and social identity. International Journal Of Consumer Studies, 38(1), 82-89. doi:10.1111/ijcs.12067

Bartels, J., & Reinders, M. J. (2010). Social identification, social representations, and consumer innovativeness in an organic food context: A cross-national comparison. Food quality and preference, 21(4), 347-352.

Bauer, H. H., Heinrich, D., & Schäfer, D. B. (2013). The effects of organic labels on global, local, and private brands: More hype than substance?. Journal of Business Research, 66(8), 1035-1043.

Bazzani, C., Caputo, V., Nayga Jr, R. M., & Canavari, M. (2017). Revisiting consumers' valuation for local versus organic food using a non-hypothetical choice experiment: Does personality matter?. Food Quality and Preference, 62, 144-154.

Bellotti, E., & Panzone, L. (2016). Media effects on sustainable food consumption. How newspaper coverage relates to supermarket expenditures. International journal of consumer studies, 40(2), 186-200.

Bernard, J. C., & Liu, Y. (2017). Are beliefs stronger than taste? A field experiment on organic and local apples. Food Quality and Preference, 61, 55-62.

Bi, X., Gao, Z., House, L. A., & Hausmann, D. S. (2015). Tradeoffs between sensory attributes and organic labels: the case of orange juice. International Journal of Consumer Studies, 39(2), 162-171.

Bingen, J., Sage, J., & Sirieix, L. (2011). Consumer coping strategies: a study of consumers committed to eating local. International Journal Of Consumer Studies, 35(4), 410-419. doi:10.1111/j.1470-6431.2010.00949.x

Boström, M., Jönsson, A. M., Lockie, S., Mol, A. P., & Oosterveer, P. (2015). Sustainable and responsible supply chain governance: challenges and opportunities. Journal of Cleaner Production, 107, 1-7.

Bravo, C. P., Cordts, A., Schulze, B., & Spiller, A. (2013). Assessing determinants of organic food consumption using data from the German National Nutrition Survey II. Food quality and Preference, 28(1), 60-70.

Brown, E., Dury, S., & Holdsworth, M. (2009). Motivations of consumers that use local, organic fruit and vegetable box schemes in Central England and Southern France. Appetite, 53(2), 183-188.

Bryła, P. (2016). Organic food consumption in Poland: Motives and barriers. Appetite, 105, 737-746.

Çabuk, S., Tanrikulu, C., & Gelibolu, L. (2014). Understanding organic food consumption: attitude as a mediator. International Journal Of Consumer Studies, 38(4), 337-345. doi:10.1111/ijcs.12094

Carey, L., Bell, P., Duff, A., Sheridan, M., & Shields, M. (2011). Farmers' Market consumers: a Scottish perspective. International Journal Of Consumer Studies, 35(3), 300-306. doi:10.1111/j.1470-6431.2010.00940.x

Chaabane, A., Ramudhin, A., & Paquet, M. (2012). Design of sustainable supply chains under the emission trading scheme. International Journal of Production Economics, 135(1), 37-49.

Chekima, B., Igau, A., Wafa, S. A. W. S. K., & Chekima, K. (2017). Narrowing the gap: Factors driving organic food consumption. Journal of Cleaner Production, 166, 1438-1447.

Chen, J., Lobo, A., & Rajendran, N. (2014). Drivers of organic food purchase intentions in mainland China - evaluating potential customers' attitudes, demographics and segmentation. International Journal Of Consumer Studies, 38(4), 346-356. doi:10.1111/ijcs.12095

Chen, N., Lee, C., & Huang, C. (2015). Why buy organic rice? genetic algorithm-based fuzzy association mining rules for means-end chain data. International Journal Of Consumer Studies, 39(6), 692-707. doi:10.1111/ijcs.12210

Chen, Y., & Chen, I. J. (2019). Mixed sustainability motives, mixed results: the role of compliance and commitment in sustainable supply chain practices. Supply Chain Management: An International Journal.

Cole, R., & Aitken, J. (2019). Selecting suppliers for socially sustainable supply chain management: post-exchange supplier development activities as pre-selection requirements. Production Planning & Control, 1-19.

Costa, S., Zepeda, L., & Sirieix, L. (2014). Exploring the social value of organic food: a qualitative study in France. International Journal Of Consumer Studies, 38(3), 228-237. doi:10.1111/ijcs.12100

D'Amico, M., Di Vita, G., & Monaco, L. (2016). Exploring environmental consciousness and consumer preferences for organic wines without sulfites. Journal Of Cleaner Production, 12064-71. doi:10.1016/j.jclepro.2016.02.014

Daunfeldt, S. O., & Rudholm, N. (2014). Does shelf-labeling of organic foods increase sales? Results from a natural experiment. Journal of Retailing and Consumer Services, 21(5), 804-811.

De Maya, S. R., López-López, I., & Munuera, J. L. (2011). Organic food consumption in Europe: International segmentation based on value system differences. Ecological Economics, 70(10), 1767-1775.

de-Magistris, T., & Gracia, A. (2014). Do consumers care about organic and distance labels? An empirical analysis in Spain. International Journal Of Consumer Studies, 38(6), 660-669. doi:10.1111/ijcs.12138

Denver, S., & Jensen, J. D. (2014). Consumer preferences for organically and locally produced apples. Food Quality and Preference, 31, 129-134.

Du, S., Bartels, J., Reinders, M., & Sen, S. (2017). Organic consumption behavior: A social identification perspective. Food Quality and Preference, 62, 190-198.

Ellison, B., Bernard, J. C., Paukett, M., & Toensmeyer, U. C. (2016). The influence of retail outlet and FSMA information on consumer perceptions of and willingness to pay for organic grape tomatoes. Journal of Economic Psychology, 55, 109-119.

Esfahbodi, A., Zhang, Y., & Watson, G. (2016). Sustainable supply chain management in emerging economies: Trade-offs between environmental and cost performance. International Journal of Production Economics, 181, 350-366.

Eskandarpour, M., Dejax, P., Miemczyk, J., & Péton, O. (2015). Sustainable supply chain network design: An optimization-oriented review. Omega, 54, 11-32.

Fernqvist, F., & Ekelund, L. (2014). Credence and the effect on consumer liking of food–A review. Food Quality and Preference, 32, 340-353.

Formentini, M., & Taticchi, P. (2016). Corporate sustainability approaches and governance mechanisms in sustainable supply chain management. Journal of Cleaner Production, 112, 1920-1933.

Gad Mohsen, M., & Dacko, S. (2013). An extension of the benefit segmentation base for the consumption of organic foods: A time perspective. Journal Of Marketing Management, 29(15-16), 1701-1728. doi:10.1080/0267257X.2013.800896

Genovese, A., Acquaye, A. A., Figueroa, A., & Koh, S. L. (2017). Sustainable supply chain management and the transition towards a circular economy: Evidence and some applications. Omega, 66, 344-357.

Gifford, K., & Bernard, J. C. (2011). The effect of information on consumers' willingness to pay for natural and organic chicken. International Journal Of Consumer Studies, 35(3), 282-289. doi:10.1111/j.1470-6431.2010.00929.x

Glover, J. L., Champion, D., Daniels, K. J., & Dainty, A. J. (2014). An Institutional Theory perspective on sustainable practices across the dairy supply chain. International Journal of Production Economics, 152, 102-111.

Goetzke, B., Nitzko, S., & Spiller, A. (2014). Consumption of organic and functional food. A matter of well-being and health?. Appetite, 77, 96-105.

Gopal, P. R. C., & Thakkar, J. (2016). Sustainable supply chain practices: an empirical investigation on Indian automobile industry. Production Planning & Control, 27(1), 49-64.

Gottschalk, I., & Leistner, T. (2013). Consumer reactions to the availability of organic food in discount supermarkets. International Journal Of Consumer Studies, 37(2), 136-142. doi:10.1111/j.1470-6431.2012.01101.x

Govindan, K., Jafarian, A., Khodaverdi, R., & Devika, K. (2014). Two-echelon multiple-vehicle location–routing problem with time windows for optimization of sustainable supply chain network of perishable food. International Journal of Production Economics, 152, 9-28.

Hasimu, H., Marchesini, S., & Canavari, M. (2017). A concept mapping study on organic food consumers in Shanghai, China. Appetite, 108, 191-202.

He, C., Breiting, S., & Perez-Cueto, F. J. (2012). Effect of organic school meals to promote healthy diet in 11–13 year old children. A mixed methods study in four Danish public schools. Appetite, 59(3), 866-876.

Hempel, C., & Hamm, U. (2016). Local and/or organic: a study on consumer preferences for organic food and food from different origins. International Journal Of Consumer Studies, 40(6), 732-741. doi:10.1111/ijcs.12288

Hidalgo-Baz, M., Martos-Partal, M., & González-Benito, Ó. (2017). Assessments of the Quality of Organic versus Conventional Products, by Category and Cognitive Style. Food Quality and Preference.

Hilverda, F., Kuttschreuter, M., & Giebels, E. (2017). Social media mediated interaction with peers, experts and anonymous authors: Conversation partner and message framing effects on risk perception and sense-making of organic food. Food quality and preference, 56, 107-118.

Hoffmann, S., & Schlicht, J. (2013). The impact of different types of concernment on the consumption of organic food. International Journal Of Consumer Studies, 37(6), 625-633. doi:10.1111/ijcs.12044

Hong, J., Zhang, Y., & Ding, M. (2018). Sustainable supply chain management practices, supply chain dynamic capabilities, and enterprise performance. Journal of Cleaner Production, 172, 3508-3519.

Hong, Z., & Guo, X. (2019). Green product supply chain contracts considering environmental responsibilities. Omega, 83, 155-166.

Hsieh, M., & Stiegert, K. W. (2012). Store Format Choice in Organic Food Consumption. American Journal Of Agricultural Economics, 94(2), 307-313.

Hsu, C. C., Tan, K. C., & Mohamad Zailani, S. H. (2016). Strategic orientations, sustainable supply chain initiatives, and reverse logistics: Empirical evidence from an emerging market. International Journal of Operations & Production Management, 36(1), 86-110.

Hsu, C. L., & Chen, M. C. (2014). Explaining consumer attitudes and purchase intentions toward organic food: Contributions from regulatory fit and consumer characteristics. Food Quality and Preference, 35, 6-13.

Hwang, J. (2016). Organic food as self-presentation: The role of psychological motivation in older consumers' purchase intention of organic food. Journal of Retailing and Consumer Services, 28, 281-287.

Ivanov, D. (2018). Revealing interfaces of supply chain resilience and sustainability: a simulation study. International Journal of Production Research, 56(10), 3507-3523.

Jadhav, A., Orr, S., & Malik, M. (2019). The role of supply chain orientation in achieving supply chain sustainability. International Journal of Production Economics, 217, 112-125.

Jensen, J. D., & Mørkbak, M. R. (2013). Role of gastronomic, externality and feasibility attributes in consumer demand for organic and local foods: The case of honey and apples. International Journal Of Consumer Studies, 37(6), 634-641. doi:10.1111/ijcs.12049

Johnson, M. P. (2015). Sustainability management and small and medium-sized enterprises: Managers' awareness and implementation of innovative tools. *Corporate Social Responsibility and Environmental Management*, *22*(5), 271-285.

Juhl, H. J., Fenger, M. J., & Thogerson, J. (2017). Will the Consistent Organic Food Consumer Step Forward? An Empirical Analysis. Journal Of Consumer Research, 44(3), 519-535. doi:10.1093/jcr/ucx052

Kauppinen-Räisänen, H., Rindell, A., & Åberg, C. (2014). Conveying conscientiousness: exploring environmental images across servicescapes. Journal of Retailing and Consumer Services, 21(4), 520-528.

Kaur, H., & Singh, S. P. (2019). Sustainable procurement and logistics for disaster resilient supply chain. Annals of Operations Research, 283(1), 309-354.

Kriwy, P., & Mecking, R. (2012). Health and environmental consciousness, costs of behaviour and the purchase of organic food. International Journal Of Consumer Studies, 36(1), 30-37. doi:10.1111/j.1470-6431.2011.01004.x

Krystallis, A., Vassallo, M., & Chryssohoidis, G. (2012). The usefulness of Schwartz's 'Values Theory' in understanding consumer behaviour towards differentiated products. Journal Of Marketing Management, 28(11-12), 1438-1463. doi:10.1080/0267257X.2012.715091

Laureti, T., & Benedetti, I. (2018). Exploring pro-environmental food purchasing behaviour: An empirical analysis of Italian consumers. Journal of Cleaner Production, 172, 3367-3378.

Lee, S. Y. (2008). Drivers for the participation of small and medium-sized suppliers in green supply chain initiatives. *Supply Chain Management: An International Journal*, *13*(3), 185-198.

Lee, H. J., & Hwang, J. (2016). The driving role of consumers' perceived credence attributes in organic food purchase decisions: A comparison of two groups of consumers. Food Quality and Preference, 54, 141-151.

Lee, H. H., Nunez, M., & Cruz, J. (2018). Competition for limited critical resources and the adoption of environmentally sustainable strategies. *European Journal of Operational Research*, *264*(3), 1130-1143.

Lee, H. J., & Yun, Z. S. (2015). Consumers' perceptions of organic food attributes and cognitive and affective attitudes as determinants of their purchase intentions toward organic food. Food quality and preference, 39, 259-267.

Lee, M., Han, H., & Willson, G. (2011). The Role of Expected Outcomes in the Formation of Behavioral Intentions in the Green-Hotel Industry. Journal Of Travel & Tourism Marketing, 28(8), 840-855. doi:10.1080/10548408.2011.623049

Li, Y., Zhao, X., Shi, D., & Li, X. (2014). Governance of sustainable supply chains in the fast fashion industry. *European Management Journal*, *32*(5), 823-836.

Lu, L., & Gursoy, D. (2017). Does offering an organic food menu help restaurants excel in competition? An examination of diners' decision-making. International Journal of Hospitality Management, 63, 72-81.

Lusk, J. L. (2011). External validity of the food values scale. Food Quality and Preference, 22(5), 452-462.

Lusk, J. L., & Briggeman, B. C. (2009). Food Values. American Journal Of Agricultural Economics, 91(1), 184-196. doi:10.1111/j.1467-8276.2008.01175.x

Marian, L., Chrysochou, P., Krystallis, A., & Thøgersen, J. (2014). The role of price as a product attribute in the organic food context: An exploration based on actual purchase data. Food Quality and Preference, 37, 52-60.

Mathivathanan, D., Kannan, D., & Haq, A. N. (2018). Sustainable supply chain management practices in Indian automotive industry: A multi-stakeholder view. Resources, Conservation and Recycling, 128, 284-305.

Meixell, M. J., & Luoma, P. (2015). Stakeholder pressure in sustainable supply chain management: a systematic review. *International Journal of Physical Distribution & Logistics Management*, *45*(1/2), 69-89.

Meyerding, S. G., & Merz, N. (2018). Consumer preferences for organic labels in Germany using the example of apples – Combining choice-based conjoint analysis and eye-tracking measurements. Journal Of Cleaner Production, 181772-783. doi:10.1016/j.jclepro.2018.01.235

Meza, X., & Park, H. (2016). Organic Products in Mexico and South Korea on Twitter. Journal Of Business Ethics, 135(3), 587-603. doi:10.1007/s10551-014-2345-y

Michaelidou, N., & Hassan, L. M. (2008). The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food. International Journal Of Consumer Studies, 32(2), 163-170. doi:10.1111/j.1470-6431.2007.00619.x

Minton, E. A., Kahle, L. R., & Kim, C. H. (2015). Religion and motives for sustainable behaviors: A cross-cultural comparison and contrast. Journal of Business Research, 68(9), 1937-1944.

Mørk, T., Bech-Larsen, T., Grunert, K. G., & Tsalis, G. (2017). Determinants of citizen acceptance of environmental policy regulating consumption in public settings: Organic food in public institutions. Journal of Cleaner Production, 148, 407-414.

Moser, A. K. (2016). Consumers' purchasing decisions regarding environmentally friendly products: An empirical analysis of German consumers. Journal of Retailing and Consumer Services, 31, 389-397.

Ness, M. R., Ness, M., Brennan, M., Oughton, E., Ritson, C., & Ruto, E. (2010). Modelling consumer behavioural intentions towards food with implications for marketing quality low-input and organic food. Food Quality and Preference, 21(1), 100-111.

Nie, C., & Zepeda, L. (2011). Lifestyle segmentation of US food shoppers to examine organic and local food consumption. Appetite, 57(1), 28-37.

Nuttavuthisit, K., & Thøgersen, J. (2017). The Importance of Consumer Trust for the Emergence of a Market for Green Products: The Case of Organic Food. Journal Of Business Ethics, 140(2), 323-337. doi:10.1007/s10551-015-2690-5

Olson, E. L. (2017). The rationalization and persistence of organic food beliefs in the face of contrary evidence. Journal of Cleaner Production, 140, 1007-1013.

Onozaka, Y., Nurse, G., & Thilmany McFadden, D. (2011). Defining Sustainable Food Market Segments: Do Motivations and Values Vary by Shopping Locale?. American Journal Of Agricultural Economics, 93(2), 583-589.

Peterson, H. H., & Li, X. (2011). Consumer Preferences for Product Origin and Processing Scale: The Case of Organic Baby Foods. American Journal Of Agricultural Economics, 93(2), 590-596.

Pieniak, Z., Aertsens, J., & Verbeke, W. (2010). Subjective and objective knowledge as determinants of organic vegetables consumption. Food quality and preference, 21(6), 581-588.

Pino, G., Peluso, A. M., & Guido, G. (2012). Determinants of Regular and Occasional Consumers' Intentions to Buy Organic Food. Journal Of Consumer Affairs, 46(1), 157-169. doi:10.1111/j.1745-6606.2012.01223.x

Prada, M., Garrido, M. V., & Rodrigues, D. (2017). Lost in processing? Perceived healthfulness, taste and caloric content of whole and processed organic food. Appetite, 114, 175-186.

Puska, P., Kurki, S., Lähdesmäki, M., Siltaoja, M., & Luomala, H. (2016). Male-Male Status Signaling through Favoring Organic Foods: Is the Signaler Perceived and Treated as a Friend or a Foe?. Psychology & Marketing, 33(10), 843-855. doi:10.1002/mar.20922

Puska, P., Kurki, S., Lähdesmäki, M., Siltaoja, M., & Luomala, H. (2017). Sweet taste of prosocial status signaling: When eating organic foods makes you happy and hopeful. Appetite.

Rajeev, A., Pati, R. K., Padhi, S. S., & Govindan, K. (2017). Evolution of sustainability in supply chain management: A literature review. Journal of Cleaner Production, 162, 299-314.

Rana, J., & Paul, J. (2017). Consumer behavior and purchase intention for organic food: A review and research agenda. Journal Of Retailing & Consumer Services, 38157-165. doi:10.1016/j.jretconser.2017.06.004

Richetin, J., Mattavelli, S., & Perugini, M. (2016). Increasing implicit and explicit attitudes toward an organic food brand by referencing to oneself. Journal of Economic Psychology, 55, 96-108.

Rödiger, M., & Hamm, U. (2015). How are organic food prices affecting consumer behaviour? A review. Food Quality and Preference, 43, 10-20.

Rostamzadeh, R., Ghorabaee, M. K., Govindan, K., Esmaeili, A., & Nobar, H. B. K. (2018). Evaluation of sustainable supply chain risk management using an integrated fuzzy TOPSIS-CRITIC approach. Journal of Cleaner Production, 175, 651-669.

Ryan, J., & Casidy, R. (2018). The role of brand reputation in organic food consumption: A behavioral reasoning perspective. Journal Of Retailing & Consumer Services, 41239-247. doi:10.1016/j.jretconser.2018.01.002

Sarkis, J. , Gonzalez-Torre, P. and Adenso-Diaz, B. (2010), "Stakeholder pressure and the adoption of environmental practices: the mediating effect of training", *Journal of Operations Management* , Vol. 28 No. 2, pp. 163-176.

Sauer, P. C., & Seuring, S. (2019). Extending the reach of multi-tier sustainable supply chain management–insights from mineral supply chains. International Journal of Production Economics, 217, 31-43.

Scalco, A., Noventa, S., Sartori, R., & Ceschi, A. (2017). Predicting organic food consumption: A meta-analytic structural equation model based on the theory of planned behavior. Appetite.

Scarpa, R., & Thiene, M. (2011). Organic food choices and Protection Motivation Theory: Addressing the psychological sources of heterogeneity. Food quality and preference, 22(6), 532-541.

Schill, M., & Shaw, D. (2016). Recycling today, sustainability tomorrow: Effects of psychological distance on behavioural practice. *European Management Journal*, *34*(4), 349-362.

Schuldt, J. P., & Hannahan, M. (2013). When good deeds leave a bad taste. Negative inferences from ethical food claims. Appetite, 62, 76-83.

Seuring, S. (2011). Supply chain management for sustainable products–insights from research applying mixed methodologies. Business Strategy and the environment, 20(7), 471-484.

Seuring, S., & Gold, S. (2013). Sustainability management beyond corporate boundaries: from stakeholders to performance. Journal of Cleaner Production, 56, 1-6.

Seuring, S., Brix-Asala, C., & Khalid, R. U. (2019). Analyzing base-of-the-pyramid projects through sustainable supply chain management. Journal of cleaner production, 212, 1086-1097.

Silvestre, B. S. (2015). Sustainable supply chain management in emerging economies: Environmental turbulence, institutional voids and sustainability trajectories. International Journal of Production Economics, 167, 156-169.

Singh, A., & Verma, P. (2017). Factors influencing Indian consumers' actual buying behaviour towards organic food products. Journal of Cleaner Production, 167, 473-483.

Sirieix, L., Kledal, P. R., & Sulitang, T. (2011). Organic food consumers' trade-offs between local or imported, conventional or organic products: a qualitative study in Shanghai. International Journal Of Consumer Studies, 35(6), 670-678. doi:10.1111/j.1470-6431.2010.00960.x

Spendrup, S., Hunter, E., & Isgren, E. (2016). Exploring the relationship between nature sounds, connectedness to nature, mood and willingness to buy sustainable food: A retail field experiment. Appetite, 100, 133-141.

Stolz, H., Stolze, M., Janssen, M., & Hamm, U. (2011). Preferences and determinants for organic, conventional and conventional-plus products–The case of occasional organic consumers. Food Quality and Preference, 22(8), 772-779.

Teisl, M. F., Fein, S. B., & Levy, A. S. (2009). Information effects on consumer attitudes toward three food technologies: Organic production, biotechnology, and irradiation. Food Quality and Preference, 20(8), 586-596.

Teng, C. C., & Lu, C. H. (2016). Organic food consumption in Taiwan: motives, involvement, and purchase intention under the moderating role of uncertainty. Appetite, 105, 95-105.

Thøgersen, J. (2017). Sustainable food consumption in the nexus between national context and private lifestyle: A multi-level study. Food Quality and Preference, 55, 16-25.

Thøgersen, J., & Zhou, Y. (2012). Chinese consumers' adoption of a 'green'innovation–The case of organic food. Journal of Marketing Management, 28(3-4), 313-333.

Thøgersen, J., Zhou, Y., & Huang, G. (2016). How stable is the value basis for organic food consumption in China?. Journal Of Cleaner Production, 134214-224. doi:10.1016/j.jclepro.2015.06.036

Tobler, C., Visschers, V. H., & Siegrist, M. (2011). Eating green. Consumers' willingness to adopt ecological food consumption behaviors. Appetite, 57(3), 674-682.

Tseng, M. L., Lim, M. K., & Wu, K. J. (2019). Improving the benefits and costs on sustainable supply chain finance under uncertainty. International Journal of Production Economics.

Ureña, F., Bernabéu, R., & Olmeda, M. (2008). Women, men and organic food: differences in their attitudes and willingness to pay. A Spanish case study. International Journal Of Consumer Studies, 32(1), 18-26. doi:10.1111/j.1470-6431.2007.00637.x

Van Doorn, J., & Verhoef, P. C. (2011). Willingness to pay for organic products: Differences between virtue and vice foods. International Journal of Research in Marketing, 28(3), 167-180.

Varsei, M., & Polyakovskiy, S. (2017). Sustainable supply chain network design: A case of the wine industry in Australia. Omega, 66, 236-247.

Vassallo, M., Scalvedi, M. L., & Saba, A. (2016). Investigating psychosocial determinants in influencing sustainable food consumption in Italy. International Journal of Consumer Studies, 40(4), 422-434.

Vittersø, G., & Tangeland, T. (2015). The role of consumers in transitions towards sustainable food consumption. The case of organic food in Norway. Journal of Cleaner Production, 92, 91-99.

Welsch, H., & Kühling, J. (2009). Determinants of pro-environmental consumption: The role of reference groups and routine behavior. Ecological economics, 69(1), 166-176.

Wilhelm, M. M., Blome, C., Bhakoo, V., & Paulraj, A. (2016). Sustainability in multi-tier supply chains: Understanding the double agency role of the first-tier supplier. *Journal of Operations Management*, *41*, 42-60.

Wolf, J. (2014). The relationship between sustainable supply chain management, stakeholder pressure and corporate sustainability performance. Journal of business ethics, 119(3), 317-328.

Wu, Z., & Pagell, M. (2011). Balancing priorities: Decision-making in sustainable supply chain management. Journal of operations management, 29(6), 577-590.

Yadav, R. (2016). Altruistic or egoistic: Which value promotes organic food consumption among young consumers? A study in the context of a developing nation. Journal Of Retailing & Consumer Services, 3392-97. doi:10.1016/j.jretconser.2016.08.008

Yadav, R., & Pathak, G. S. (2016). Intention to purchase organic food among young consumers: Evidences from a developing nation. Appetite, 96, 122-128.

Yazdanpanah, M., Forouzani, M., & Hojjati, M. (2015). Willingness of Iranian young adults to eat organic foods: Application of the Health Belief Model. Food Quality and Preference, 41, 75-83.

Yu, M., & Cruz, J. M. (2019). The sustainable supply chain network competition with environmental tax policies. International Journal of Production Economics, 217, 218-231.

Yusuf, Y., Menhat, M. S., Abubakar, T., & Ogbuke, N. J. (2019). Agile capabilities as necessary conditions for maximising sustainable supply chain performance: An empirical investigation. International Journal of Production Economics, 107501.

Zagata, L. (2014). Towards conscientious food consumption: exploring the values of Czech organic food consumers. International Journal Of Consumer Studies, 38(3), 243-250. doi:10.1111/ijcs.12098

Zander, K., & Hamm, U. (2012). Information search behaviour and its determinants: the case of ethical attributes of organic food. International Journal Of Consumer Studies, 36(3), 307-316. doi:10.1111/j.1470-6431.2011.00998.x

Zander, K., Stolz, H., & Hamm, U. (2013). Promising ethical arguments for product differentiation in the organic food sector. A mixed methods research approach. Appetite, 62, 133-142.

Zepeda, L., & Deal, D. (2009). Organic and local food consumer behaviour: Alphabet Theory. International Journal Of Consumer Studies, 33(6), 697-705. doi:10.1111/j.1470-6431.2009.00814.x

Zhang, Minhao, Ying Kei Tse, Bob Doherty, Si Li, and Pervaiz Akhtar. "Sustainable supply chain management: Confirmation of a higher-order model." Resources, Conservation and Recycling 128 (2018): 206-221.

Zhu, Q. , Sarkis, J. and Geng, Y. (2005), “Green supply chain management in China: pressures, practices and performance”, *International Journal of Operations & Production Management* , Vol. 25 No. 5, pp. 449-468.

Zielke, S. (2010). How price image dimensions influence shopping intentions for different store formats. European Journal Of Marketing, 44(6), 748-770. doi:10.1108/03090561011032702

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