

A CONCEPTUAL MODEL FOR SUSTAINABLE SUPPLY CHAIN OPERATION IN FASHION INDUSTRY

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Abstract:

The global shifting of production insists the fashion brands and retailers to focus more on the operational efficiency to take the cost advantage and simultaneously fulfil the demand quickly. But the contemporary market urges to do it also in sustainable way. The purpose of this paper is to investigate what are the considerations for sustainable operation. A literature review is made to learn the researchers' considerations for sustainable supply chain management (SSCM). A hierarchy is constructed to classify the aspects of sustainability in different levels for social, environmental and economic compliance with the addition of product compliance as a similarly important consideration for sustainability in the fashion supply chain (FSC). A frame work presented for sustainable supply chain operation (SSCO) by highlighting the key practices in the FSC. The presented supply chain (SC) model considered the operational level topics from the hierarchy. This study is an endeavour to substantiate the significance of the integration of product sustainability at the operational level through inter-relationship in the R&D phase by multiparty in the SC who are working with the same goal. This framework provides the insights for the stakeholders in the FSC about the key relationships among the parties at operational level.

Keywords: Sustainable supply chain, fashion supply chain, Sustainability hierarchy, Sustainable fashion

1. INTRODUCTION

Globalization and outsourcing have increased the complexity of supply chains (Hutchins & Sutherland, 2008), especially with regard to sustainable operation. Prior to the 1980s, the purchasing function was typically viewed as being primarily clerical (Handfield et al., 2002), but sourcing today is much more complex than simply buying. Sustainability is to be considered in sourcing as a part of supply chain operations (SCO) rather than asserting an organization's approach for greener and ethical practices. The current adverse global economic conditions have highlighted the need for organisations to integrate various supply chain paradigms, in order to meet customer demand efficiently and effectively, while adhering to the environmental and social requirements of a wider set of stakeholders (Ciccullo et al., 2018). It is very important simultaneously to be customer centric to meet the demand in agile way and execute in the upstream of the SC in sustainable way. It connects the need to be economically potent for the sustainable growth and, furthermore, establish the SC socially and environmentally compliant. Azevedo et al. (2017) mentions that sustainable supply chain management has emerged as an approach that combines the general aims of supply chain management with the goals of sustainability, namely economic, social and environmental performance.

Research community has responded accordingly and there has been already a reasonably good number of researches about sustainability in supply chain management (SCM) to support the need in the industry. Dubey et al. (2017) confirms that the green or sustainable supply chain management (GSCM/SSCM) has in recent years attracted much attention from academia and practitioners in all part of the world. Albeit it is observed that the focus on environmental issues, but there is also researches which addresses social and economic aspects. Ahi & Searcy (2015) compiles the key business sustainability characteristics mentioned in the definitions in 34 papers, where business sustainability characteristics have environmental focus on 32 articles, whereas social and economic focus on 11 and 10 articles respectively. Product compliance has not been mentioned.

This study is an endeavour for gathering information on the researches in sustainability in SCM and gaining knowledge on the considerations for sustainable operations in those studies which will led the base for constructing the framework for SSCM. It focuses on two research questions.

RQ1: What aspects has been considered for SSCM in the literatures?

RQ2: What are the considerations for SSC operations for FSC?

The rest of the paper is organized accordingly to answer these research questions. A literature review by the most recent articles in sustainability and SCM is made to clarify the first research question. The literature review helped defining the elements of sustainability in the SC which are organized in hierarchical order. A conceptual model for sustainable supply chain operation (SSCO) presented in subsequent sections to address the next research question.

2. LITERATURE REVIEW

Although sustainability is relatively recently ardent topic, but it has got the attention by the academicians and practitioners for long. By the course of time, the importance on different issues in sustainability has got different level of interest. Prior to triple bottom line theory, a concept from Elkington (2004), it has seen as an environmental aspect mainly. As Ahi & Searcy (2013) mentions, early sustainability initiatives tended to focus on environmental issues but, as time goes on, they are increasingly adopting a triple bottom line (i.e., environment, economic, and social) approach to sustainability. In present circumstances, researches embrace all the three aspects as seen in business practices too. In addition, the topic has evaluated from the company level to supply chain level. A literature review of the current research articles from 2002 to 2018 is made to learn the important aspects and point of view in recent times. Through review, the following important aspects are highlighted:

2.1. Understanding sustainability

Sustainability is defined many ways by the researchers from their respective research point of view. A review of the literature by Carter & Rogers (2008) shows that unfortunately, the term sustainability has been inconsistently defined and applied in the extant research. They have defined SSCM as the strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key interorganizational business processes for improving the long-term economic performance of the individual company and its supply chains. Hallstedt et al. (2013) uses a conceptual understanding of sustainability that is based on the

framework for strategic sustainable development (FSSD) and consists of five interdependent but distinct levels that are explored to establish their respective contents and relationships for the particular planning case. The five levels of the framework encourage a thorough enough understanding of the system (1) to be able to arrive at a robust principled definition of the goals of the planning exercise (2), which is a prerequisite to be able to be strategic (3) with regard to prioritizing actions (4) and selecting tools (5) for e.g., monitoring, coordinating and decision-making. Similarly, Rajeev et al. (2017) proposes a conceptual framework to classify various factors along the triple bottom line pillars of sustainability issues in the context of supply chains.

2.2. Corporate social responsibility

Sustainability has been mentioned simultaneously with corporate social responsibility (CSR) in the literatures. Formentini & Taticchi (2016) studies companies present different corporate approaches to sustainability and determines three sustainability profiles: sustainability leaders, sustainability practitioners and traditionalists. They highlight the connections between corporate sustainability approaches and governance mechanisms, and by reviewing the results through the lenses of contingency theory, strategic alignment perspective and the resource-based view of organisations. Sodhi & Tang (2017) identifies eight themes of corporate social sustainability at a level high enough, by choice, that they could be used for mapping research in environmental or even economic sustainability and also describe the relevant codes for each theme.

The CSR practices have an impact on the responsible operation in the SC. Kogg & Mont (2012) analyses the practises of exercising responsibility in the supply chain and suggests that one can better integrate two perspectives on governance in the supply chain by acknowledging that responsibility in the supply chain can both be exercised through choice and through interorganisational management. Li et al. (2014) provides a framework for decision-makers regarding the sustainability of a fast fashion supply chain and describes the positive relationships between CSR and fast fashion supply chains. According to them sustainability governance plays an important role to obtain competitive advantages in sustainable business of the focal company in the fast fashion supply chain. CSR practices often also considers country specific regulations. Chi (2011) claims it as one of very first research devoted to understanding the CSR practices in the Chinese textile and apparel industry and mentions that there are five CSR related findings in the context of governmental and stakeholders' initiatives.

2.3. Assessing sustainability performance

Assessing the performance for SSCO is also found as an interesting topic by the researchers and accordingly many different frameworks are suggested for assessing sustainability. Azevedo et al. (2017) proposed a framework for sustainability assessment through a practical tool consisting of a set of steps, including the selection of a set of sustainability indicators, weights and sustainability index construction. The final objective is to help managers assess the level of sustainability of their individual companies and corresponding supply chains. Rao & Holt (2005) develops a conceptual model of GSCM, competitiveness and economic performance through five latent constructs: greening the inbound function of the supply chain; greening production; greening the outbound function; competitiveness; and economic performance. Some of the researches for the performance evaluation also focuses all the three legs of sustainability. Chardine-Baumann & Botta-Genoulaz (2014) proposed a framework for sustainable performance characterization in the economic, environmental and social fields and an analytical model for sustainable performance assessment to evaluate and analyze the potential relationships between traditional supply chain management practices and their impact on performance. Hutchins & Sutherland (2008) noticed that decision-makers addresses economic pillar of sustainability and increasing effort has been directed at the environmental pillar, however, the pillar associated with the social dimension of sustainability has not been well-defined. Therefore, they explore issues and methods that corporations should consider in their efforts to undertake actions that are socially sustainable.

Suppliers' performance is significant for overall SC performance. Mani et al. (2018) identifies the various supplier social sustainability measures and dimensions in emerging economies and explores how the adoption of supplier social sustainability practices pays off in terms of supplier performance and buyer's supply chain performance and how far the commitments and collaboration efforts of the buyers towards social sustainability impact the focal firm's performance. Prioritizing and assessing the SC drivers also in focus whether it is directly related to sustainability or not. Rudnicka (2016) presents such a model

which can be used as a self-assessment tool consists of six drivers: knowledge, impact, social risk, environmental risk, cooperation and communication.

There are few mathematical models proposed for assessing the performance in quantitative way, although there are theoretical frameworks too. Ahi & Searcy (2015) proposes a unique mathematical model for assessing sustainability in a supply chain which explicitly recognized that the involved supportive and hindering factors for sustainability in a supply chain are all fundamentally context dependent. Traditional techniques were also applied for quantitative assessment. Dey & Cheffi (2013) proposed a green supply chain performance measurement framework using the Analytic Hierarchy Process (AHP). It has six levels: overall GSC performance measurement; axes of overall supply chain; environmental practices and sustainable performances; criteria; subcriteria; alternative supply chains. However, theoretical frameworks are not also uncommon. Azevedo et al. (2012) proposes a theoretical framework for the analysis of the influence of green and lean upstream supply chain management practices on the sustainable development of businesses through a set of performance measures covering economic (operational cost, environmental cost, and inventory cost), environmental (business wastage, green image, and CO₂ emission), and social (corruption risk, supplier screening and local supplier) perspectives.

2.4. Social, environmental and economic considerations

Sustainability has appeared in many ways in SCO or regarding the green concept. Barber et al. (2012) argues that the current fragmented/functional approach to sustainability and the conceptualisation of the supply chain as a bounded unidirectional flow of value does not provide the holistic approach that is required to meet the sustainability needs of tomorrow's business. They suggest that inter- and intra-functional cooperation is required between the principal organisational functions in the value cycle – Marketing, Design, Operations and Logistics. It is the subject to be integrated within the SCO in each different function. Gimenez & Tachizawa (2012) proposes an integrative framework to extend the sustainable practices to suppliers. It considers three types of constructs: approaches or governance mechanisms to greening suppliers, their impact on sustainable performance (environmental, social and economic) and the enablers of these approaches. Dubey et al. (2017) makes a literature review to classify the literatures into building block of conceptual green supply chain management (GSCM) framework which considers three performance dimensions, e.g. economic, social and environmental.

Environmental sustainability in the researches appeared based on reduction of the impact on the environment through different steps and optimizations. Ho & Choi (2012) proposes the Five-R (Recycle, Reuse, Reduce, Re-design, Re-imagine) framework to examine green supply chain management through pollution prevention. Hervani (2017) presents a decision tree that can guide managers and researchers in identifying which environmental goods valuation approach could be most appropriate for a given decision and postulates that organizations, by adopting environmental goods valuation measurement can make better decisions in achieving economic and social sustainability for their supply chains, and in this case, their reverse logistics programs because they now have tools to measure variables that were not available before. There are even tools to support analysis like Handfield et al. (2002) proposes and assesses the use of the AHP as a tool for helping managers structure the problem of integrating environmental dimensions into supplier evaluation and selection decisions, resolve trade-offs and better screen and assess supplier environmental performance. To help determining the drivers to be green, Caniato et al. (2012) presents the different practices that can be used to improve environmental sustainability, and the environmental KPIs measured by fashion companies. Rudnicka (2016) focused on maturity to manage sustainable supply chain and proposed a sustainable supply chain maturity model which consists of six drivers, e.g. knowledge, impact, social risk, environmental risk, cooperation and communication.

The studies related to environmental sustainability focuses principally measuring the impacts and drivers for environmental compliance. Tseng & Hung (2014) developed a mixed integer, nonlinear optimization model to provide decision makers of enterprises a guideline for SSCM, with consideration of the operational costs, as well as the social costs of CO₂ emissions as they pointed out that greenhouse gas (GHG) emission is the main cause for global warming. Social sustainability in FSC is a long-discussed topic and practices are evident in a fragmented fashion. It is vital to integrate it as a part of SC sustainability and the factors which to be considered. Yawar & Seuring (2017) lists the social issues in the supply chain, namely: labour conditions, health and safety, human rights, child labour, gender, disabled/marginalised people inclusion and minority development. They have proposed a

framework which applies a supply chain perspective, thereby providing more insights into the management of social issues and its linkage to financial performance.

2.5. Product consideration

Sustainable product concept appeared in the researches related to design and development. McDonough et al. (2003) provides a Cradle to Cradle (C2C) perspective where green engineering represents a practical approach to the transformation of the industry. Their 12 Principles of Green Engineering to C2C can help achieve the long-term goal of designing a commercially productive, socially beneficial, and ecologically intelligent industrial system. There are also researches which concentrated solely on the product design for fashion products. For example, Gam et al. (2009) presents the development and implementation of a new apparel design and production model cradle to cradle apparel design (C2CAD), which integrates the sustainable design into existing apparel design and production models. Niinimäki & Hassi (2011) presents a set of design and manufacturing strategies for the textile and clothing industry that could reduce the environmental impact of textile and clothing production and consumption including longevity and product satisfaction, empathic design and services. Hallstedt (2017) puts emphasis on the sustainable product development, which includes the questions on how a strategic sustainability perspective can be integrated and implemented into the product innovation process with focus on the early phases. Ecolabels considers the product safety and environmental sustainability issues, therefore considering eco-labelling of the products could help to make green products. Clancy et al. (2015) investigates the connection between ecolabels and clothing design from the perspective of moving the garment industry towards sustainability and advocates that for a more sustainable textile industry there is a need to expand the expertise and information already in the design process regarding sustainability of their finished products. product quality also another critical thing which is aligned to the safety and longevity of the product.

2.6. Closed-loop approach

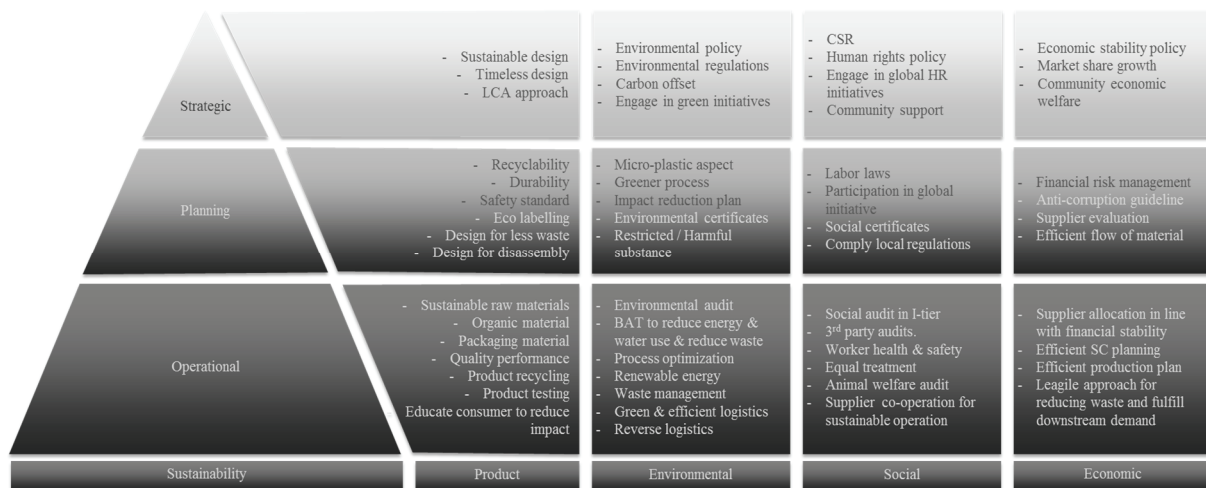
Sustainability is an issue to be considered throughout the product's lifecycle and it has addressed in very few researches. Gaur et al. (2017) proposes a conceptual framework of closed-loop supply chain (CLSC) which elaborates and establishes the link between forward and reverse supply chains by considering the process of core acquisition using consumer deposition behaviour, e.g. psychological characteristics; product related factors; situational factors; and culture. The management of sustainability is not confined to a firm's internal processes; it relates to the entire network of suppliers, distributors and retailers that comprise the supply chain of a focal company (Laura et al., 2018). They have elaborated the strategic sustainability approaches and internal and external practices and discussed the necessity to approach the sustainability issue by adopting a supply chain perspective that considers both environmental and social sustainability efforts not only within companies' boundaries but also outside in collaboration with supply chain partners.

3. ELEMENTS OF SUSTAINABILITY HIERARCHY OF FSC

The incessant accretion of the importance of this topic, sustainability is considered at strategic level by the organizations. Azevedo et al. (2017) confirms that sustainability has received much attention and is a strategic topic for countries as well as for individual companies and supply chains. Sustainability hierarchy presented in picture 1 is quite analogous to the basic hierarchical levels in a typical pyramid form where the layers are divided into strategic, planning and operational levels. The framework also integrates the key aspects of sustainability in addition to each layer vertically.

The principle focus of the organization is generating revenue by the product or service they produce. Therefore, a global approach is not fulfilled without considering the product in sustainability. This study advocates to include the product as a key aspect as a supplementary to environmental, social and economic considerations. Product is the most important focus of a business organization where all the activities by different functions focuses on value proposition through it. Developing and designing the product determines the subsequent processes in FSC and guides the path of sustainable operations which justifies the inclusion in product creation. For each of the aspects of sustainable operations, the key elements are presented in strategic, planning and operational levels. The classification will help the organizations in the supply chain to focus in different hierarchy in management.

Picture 1: Sustainability hierarchy



4. A CONCEPTUAL MODEL FOR SSCO

This study tends to highlight the important considerations for SSC in FSC by presenting a conceptual model for SSCO. Apropos of this, the following section presents at first the organization of the FSC, and then the considerations for sustainable operations and apt actions for a sustainable supply chain operation and management.

4.1. Organization of FSC

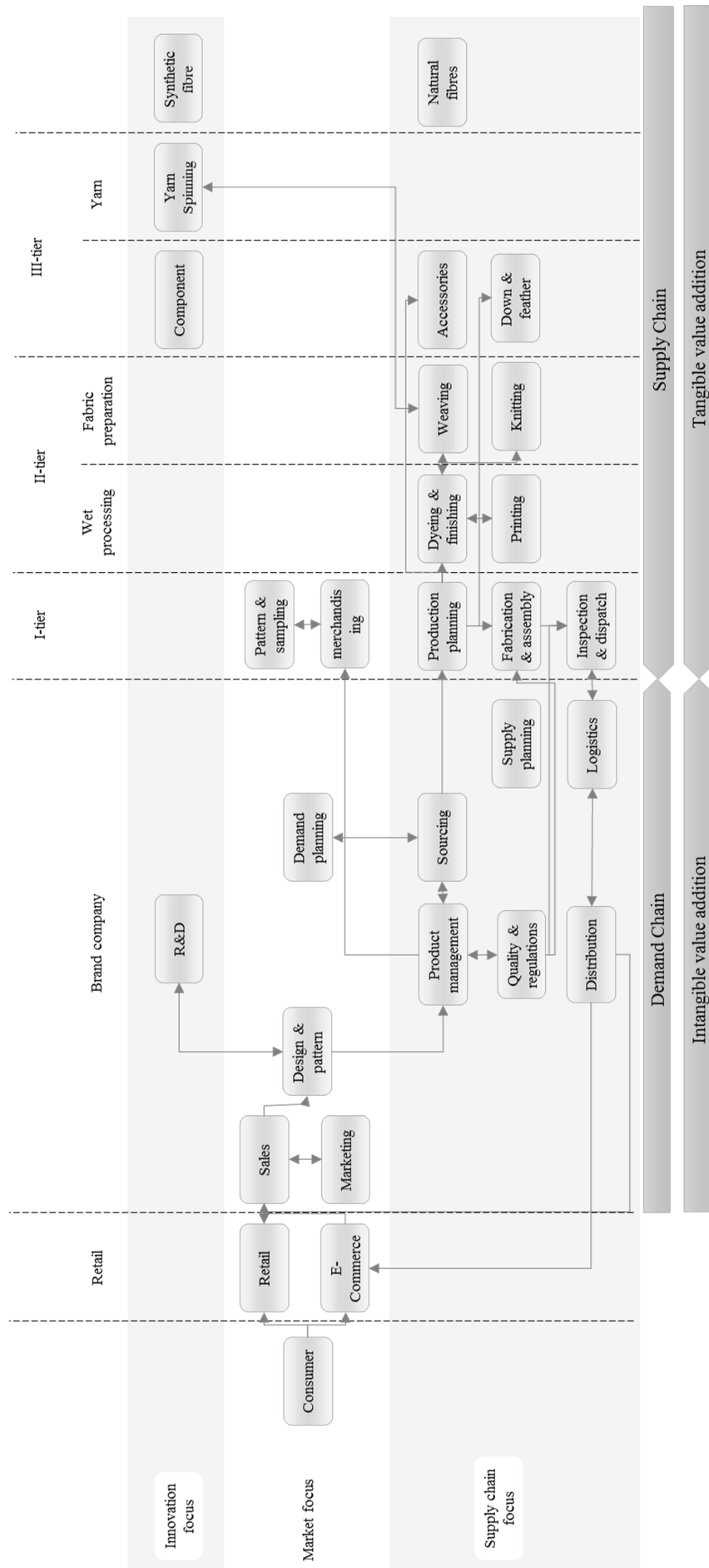
A typical fashion supply chain is layered into different tiers in manufacturing and the focal company lead retailing (picture 2). The entire chain is divided into demand chain and supply chain according to the commonly positioned decoupling point. This study assumes that demand chain side adds intangible value and the tangible value mainly added by supply side where the manufacturing activities are involved. It also assumes that brands and retailers are not involved in manufacturing and their activities mostly focusing on designing, retailing and marketing. Different functions in the supply chain are placed in layers in vertical organization in the framework. The activities in the top layer focuses on the product and functions related to innovation from the brand and retailing side who are close to the consumer and recognize the market needs. Material manufacturers in Tier II and beyond involved in material related innovation who have often co-operation with the chemical and equipment manufacturers. Due to the increase in sustainable focus and regulatory strictness, chemical suppliers are continuously focus on environmentally friendly and safer options. On the other hand, due to the industry demand, equipment manufacturers are involved in developing efficient equipment for process optimization.

The activities in next layer of the framework in the vertical setup more closely related to market where consumer thus market demand perceived. The focal company and retail principally focuses on demand creation and enhancement of the consumer experience. Brand company's sales function is the interface between the market and the brand's principle functions like design and marketing. Typically merchandising division of Tier I supplier supports the demand creation activities from the supply side. The bottom layer focuses on operations in both demand and supply side. Supply chain function of the brand company is the interface between the brand and the upstream suppliers for demand fulfilment. Supply chain function is critical point to convert the intangible needs to tangible products. A significant amount of activities by the involvement of various parties is remarkable in the operations. This phase is very important from the sustainability point of view.

4.2. Main activities in a FSC for efficient operations

The precondition for sustainability management is to have an efficient operation. Many companies in fashion industry employed lean practices to improve their performance and reduce wastes. Azevedo et al. (2012) mentions that the simultaneous deployment of green and lean practices may improve business performance while creating economic, social, and environmental benefits.

Picture 2: Organization of the FSC



This study emphasises that the companies in a SC must closely work together in order to achieve an efficient SC operation. Picture 3 depicts the major activities in a fashion supply chain which are directly related to SC efficiency. The activities are divided into three horizontal layers according to the planning of the production. Although the main operational activities are evident during the production stage, but the base for smooth production is built well ahead of the physical production.

The product development phase has a significance for guiding the future SC operation and success. Design for manufacturability is a very important consideration in this phase where the possible physical and chemical properties are ensured. Freezing the bill of material early enough together with the pattern and embellishment work is critical pre-production tasks. Sourcing has a great role in this phase to share the forecast in material, item and color level with both tier-I and tier-II suppliers. This ensures the early preparation for production. Product approval is another important aspect, which reduces the complexity in production and possible quality issues.

The planned production starts with the fabric manufacturing as the yarns are quite standard compared to the material and product variety. Depending on the complexity of the material and design, lead time varies significantly. For sustainable production and expected quality level, it is important to remain the schedule flat. The possible quality problem and product testing which could linger the production should be scheduled in line with the delivery schedule. Efficient logistics planning is an important aspect of green SC operation. Smooth and on-time production reduces the risk of expedition which is a must for SSCO.

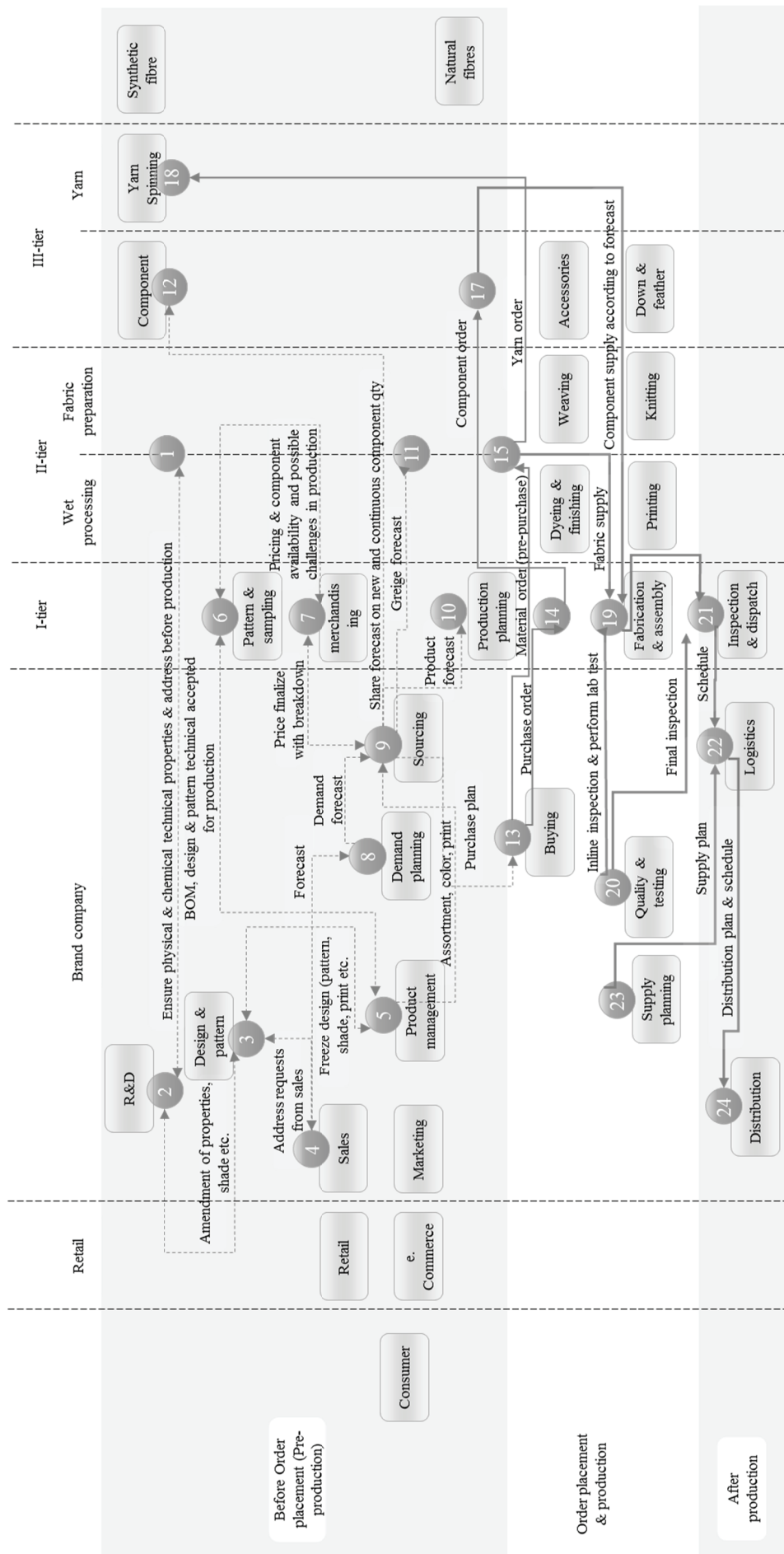
4.3. Key practices for a sustainable FSC operation

The previous sections delineated the organization of the FSC and corresponding activities which drives the efficient SC management. Efficient SC operation is essential for the sustainability. The presented (picture 4) conceptual model is based on the elements in the operational level in the sustainability hierarchy. The major focus of this concept is to integrate sustainability into SC operational level activities. All the four aspects presented in sustainability hierarchy are considered in this model. Among the listed activities of sustainable SC operation in the operational level of the hierarchy, key practices are shown in this model. The top layer of the model embraces the activities related to product sustainability. The bottom layer has combined the activities related to social and environmental part of the sustainability.

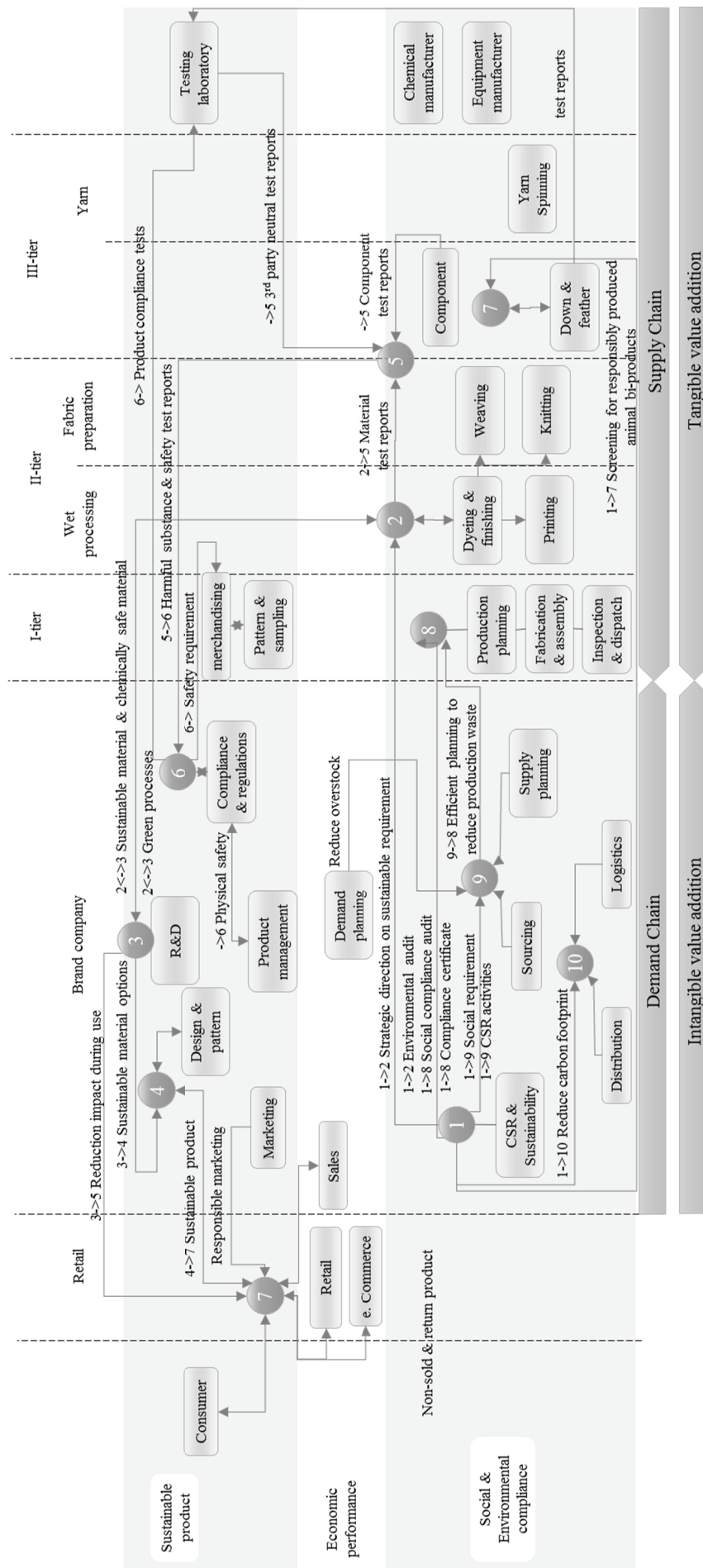
At operational level, sustainable steps start at R&D phase. Sustainability at operational level focuses on the product sustainability where R&D has an important part. The role of R&D of the focal organization is to develop or search for material from Tier II suppliers as per requirement by the design. The possibility of having greener processing steps for the materials are also to be secured here which is an important consideration for environmental sustainability. Product and process safety from harmful substances are also considered for having less impact to environment and human. As an example, all those three needs can be combined, if R&D chooses to have a functional material free from PFCs (Perfluorocarbon) which are used in DWR (durable water repellent) finish. PFC free finish ensures the process and product is not containing the PFCs which are potentially hazardous for environment therefore human. Third party certification systems through eco-labelling can be considered for product safety, whereas there are several certification systems also available for process safety. The physical performance and safety requirements in different markets are also ensured in collaboration with product management which is also a consideration during design.

Economic sustainability is more connected to strategic level policy making. However, at functional level efficient planning and scheduling in production, logistics and category management has a direct impact. Quality management has a clear influence on production and logistics planning which act as the insurance for the product related risks. Product recall could arise due to quality failure which could put a company in direct economic risk through penalty, lost sales and reputation. On the other hand, the key practices related to social and environmental compliance goes hand in hand. Business, at present, must consider environmental aspects by default either because of the need from stakeholders or regulatory obligations. Social compliance works the same way. According to normal practice in FSC, the focal company leads the process of sustainability in the supply chain. Brands share their social and environmental requirements in the supply chain built on their CSR strategy according to their stakeholders' expectations. This guide the sustainable operations in the total supply chain.

Picture 3: Major activities in a FSC



Picture 4: Major activities in a FSC



Apparel brands often join to the social compliance systems like BSCI (Business Social Compliance Initiative), SA8000 (Social Accountability 8000), WRAP (Worldwide Responsible Accredited Production) etc. These systems are recognized worldwide and producers in Tier I get the certificates as proof of their compliance management. It creates the bridge between the brands and producers. However, according to the presented model, the focal organization should have the proper visibility on the social practices which could be done through own auditing system. Social auditing is conducted mostly in the Tier I in a typical FSC as apparel processing is labour intensive and the focus of social compliance aligned to human and labour rights. Responsible brands also nourish good practices for ensuring animal rights. Proper visibility in the SC is a must to reach up to the source of animal bi-products. Supportive certification systems like RDS (Responsible Down Standard) help firms to get products from the responsible sources.

Textile processes are chemical intensive and has a direct impact on the environment. Although during R&D, the greener materials and processes are selected, but for proper environmental sustainability, the organization need to focus at functional level. Textile manufacturers get environmental management certificates for the chemical and environmental safety in the products and processes which are internationally recognized, e.g. Bluesign, STeP (Sustainable Textile Production) by Oeko-Tex, ISO14001 etc. Those certificates provide confidence to the focal firm on their environmental performance, but likewise social compliance, they would confirm it through own assessment according to their customize need. It is not uncommon to have their own restricted substances list (RSL) of the brands for the control of harmful substances. Enforcement of RSL and an assessment of the process together with worker's health and safety provides a greater visibility on their partner. Environmental sustainability also urges firms for greener operations in logistics. This is critical for reducing carbon footprint in the SC which is dependent on efficient planning in logistics. All in all, it's the CSR initiatives and practices of the focal firm of their own and in the SC, which drives the sustainability and presented framework is pretty much based on this theme.

5. DISCUSSION AND FURTHER RESEARCH

The previous section presents the conceptual framework for sustainable operation in FSC. The key practices for the sustainability is also discussed. Primarily the hierarchy presented the focus areas at three different levels and for four different aspects of sustainability. The framework is built on the operational level activities. At the beginning, the organization of the SC for the model is presented to show the notable steps by different members in the SC and separated the demand and supply related activities. According to the assumption for the study, the demand and supply sides of the SC adds intangible and tangible values respectively. Although each organization in the SC have their own strategic and planning level activities, but the brand company does it for the entire SC. Tangible value addition in the upstream of the SC guided by these strategies and plans. The activities by different organs are also divided in layered for innovation, market and SC focus to provide a clear concept about what is pursued. The model also considers the significant amount of activities before the production which has an impact later for the production smoothness and eventually supply of goods as planned. The key practices for sustainability is presented subsequently which is the aim of this paper. The model spot on the product compliance including greenness and ascertain that the substantial sustainable operation built on the consideration by R&D and therefore design. Environmental sustainability is reasonably linked to those considerations. Although economic sustainability depends on strategic and policy level decisions, but the SC planning has a great role there. Social accountability is seen as an integral part of the SC operation and the sourcing or buying has a direct influence there. As a whole, the sustainability in FSC is considered as a package where the activities in product, environmental, social and economic sustainability are interlinked and interdependent for the ultimate success in SSCO.

The presented model considered the critical components and requirements which provides an insight to the fashion industry for SSCO. The study also recognized the importance of quality management which could be analysed further. The ever-increasing pressure of regulatory requirements are also an area of interest for the researchers. Both of these issues can be studied in conjunction with the process of value creation throughout the SC and could be studied more deeply in order to sync the sustainability requirements into value creation process. It is also important to explore the important considerations by the member organizations in the SC from their own point of view among the different aspects of sustainability. It could have a direct impact in implementing the model. In addition, Life Cycle Assessment (LCA) could be a good approach for measuring the impact that could be taken into consideration in extending the model.

6. CONCLUSIONS

Sustainability is not merely a responsible step to achieve a competitive advantage. Rather it should be an integral part of the company's strategy to sustain in their business. Sustainability concerns each functions of the organization which is extended to the total SC. Because of growing concern by the consumers, stronger regulations by the countries, correlative pressure from the competitors and requirement from the stockholders, fashion brands are now obliged to take it seriously. Barber et al. (2012) mentions that the future research concerned with developing environmentally sustainable business models must focus on the identification and management of the information flows at the interfaces between the customer, marketing, design, operations, logistics and external agents in the supply network. This study tries to engage different organs in the organization and in the SC to connect them based on their interdependency concerning sustainability. The activities in different layer of sustainability hierarchy provides a valuable insight for the organizations to decide about the actions in different layers. The presented key practices in the framework are the most common interconnected activities that a FSC experience. This study advocates that one should take collaborative approach in order to build a true sustainable SC and this framework will help to find out where the emphasis is needed.

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