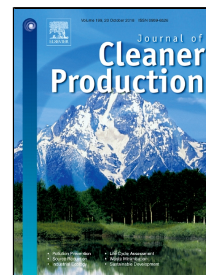# Accepted Manuscript

Exploration of Social Sustainability in Healthcare Supply Chain

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# Exploration of Social Sustainability in Healthcare Supply Chain

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# Exploration of Social Sustainability in Healthcare Supply Chain

**Abstract**

Social sustainability is concerned with the human side of sustainability. The literature indicates a growing movement towards adopting social practices in the supply chain, and despite the diffusion of the topic, it appears that social sustainability is relatively new in the service sector in general and in the healthcare sector in particular. This study explored this issue and identified the motivators, barriers, and enablers of social sustainability in a healthcare supply chain with the lens of "stakeholder theory" and a focus on four stakeholder groups: suppliers, employees, patients/community and owners/government. These aspects were further explored using a structured research method and specific research objectives. The SIPOC chart was used to list the healthcare suppliers, the inputs (such as employees) supplied and used by main processes in healthcare, the outputs (products and services) of these processes, and their customers (patients and community). This facilitates linkages of different supply chain stakeholders. This is exploratory research; data were collected from various departments of 10 hospitals of United Arab Emirates (UAE), and a comprehensive depiction of what drives, inhibits, and facilitates social sustainability practices in healthcare as perceived by all stakeholders' groups was formulated. Study results confirmed that, while separate attention to each stakeholder group is important, a comprehensive analysis of all stakeholders' perceptions of what constitutes a socially sustainable supply chain would offer more benefits and help hospital managers balance the expectations of all involved parties.

**Keywords:** Social sustainability, healthcare supply chain, stakeholder theory

## 1. Introduction

Today's business environment has become more competitive than ever. While such competition lies in practices incorporated within supply chain, the issue of sustainability has emerged as a prominent topic over the past decade (Pagell & Wu, 2009; Tate *et al.*, 2010). Sustainability is defined as the strategic, transparent integration and achievement of social, environmental, and economic goals in the systemic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its supply chains (Carter & Rogers, 2008). Arguably, this means that true sustainability occurs at the intersection of three interdependent pillars: economic, environmental, and social (Laguna, 2014). However, these pillars are not given the same level of attention (Smith, 1995). An intensive focus on economic and environmental pillars has resulted in a dearth of research in social sustainability (Pfeffer, 2010; Pullman & Dillard, 2010; Ehrgott *et al.*, 2011).

Social sustainability is concerned with the human side of sustainability (Huq *et al.*, 2014). It addresses issues related to quality of life and drives decision makers to consider the potential social consequences of their decisions (Laguna, 2014). Such decisions are to take into consideration that everyone has the opportunity to experience a full existence in terms of intellectual, emotional, spiritual, and physical health (Silvis, 2012).

Hence, social sustainability is becoming a key objective within healthcare because, while healing patients is the primary outcome of healthcare service supply chains, providing access and teaching opportunities about preventative behaviour and wellness are equally important. The sector includes services that require coordination among actors to interact with clients and community (Oslen, 1998). To provide positive patient outcomes, healthcare facilities should move beyond the notion of merely treating disease towards prevention and wellness, which is a major component of social sustainability (Silvis, 2012). The key to that is attaining effective integration of the business functions and channel members (Sahin & Robinson, 2002; 2005).

While the available literature reveals that social aspect of sustainability was lately integrated into research, there is still a lack of theoretical and empirical studies (Eizenberg and Jabareen, 2017). This dimension has largely been emphasized only for legislative issues, legal requirements or human safety (Khan *et al*., 2018*a*).It should be noted that more attention towards expectations and opinions of all stakeholders who affect or are affected by the business is critical. In this vein, it is important to shed light on the perspectives of stakeholders pertaining to what makes organizations socially sustainable. Although organizations are under pressure to adapt socially sustainable practices (Ajmal *et al*., 2018) the motivators and barriers of various stakeholders have not been methodically explored.

This paper aims to focus on social sustainability in a business context from a stakeholder's perspective, within the healthcare services industry in the United Arab Emirates (UAE). Supporting sustainability practices in healthcare requires an active interaction between hospitals and their stakeholders. Thereafter this paper explores motivators, barriers, and enablers of successful integration and implementation of social sustainability in service supply chains. The paper responds to the calls for a systematic approach to social sustainability (Mueller *et al*., 2009) by focusing on stakeholders' perspectives to develop a framework that integrates social sustainability in supply chains. The aims of the paper are three-fold: 1) to explore the motivators, barriers, and enablers of social sustainability in healthcare supply chains from stakeholders' perspectives; 2) to identify commonalities of social sustainability perceptions among stakeholder groups, and 3) to develop a comprehensive social sustainability framework that integrates the perspectives of all stakeholder groups within the context of UAE. Most supply chain personnel have different viewpoints of what sustainability really is (Carter & Rogers, 2008). Therefore, in this study, we identify four main stakeholder groups, i.e., suppliers, employees, patients/community, and owners/ government, and in addressing the viewpoint of each group, we rely on stakeholder theory (Freeman, 1984) to help understand the dynamics between stakeholders and the roles they play in social sustainability implementation. To facilitate the linkages of different supply chain stakeholders, Supplier-Input-Process-Output-Customer (SIPOC) technique has been used to list the healthcare suppliers, the inputs (such as employees) supplied and used by main healthcare processes, the outputs (products and services) of these processes, and their customers (patients and community). Data has been collected from an open ended survey distributed to top 10 hospitals and healthcare regulatory authorities of UAE.

The remainder of the paper is organized as follows. We start with a review of literature on social sustainability and its applications within supply chains, including the healthcare chain. Section 3 presents theoretical framework and Section 4 deals with the research plan. After we present a comprehensive analysis of the findings in Section 5 and Section 6 offers discussion and conclusion.

## 2. Literature Review

### 2.1. Introduction to social sustainability

Social sustainability is concerned with the human side of sustainability (Huq *et al.*, 2014). The concept is incorporated with the company's impacts on the social systems where it operates and its relationship with various stakeholders (Labuschagne *et al.*, 2005). An increased pressure by stakeholders is placed upon companies to implement social sustainability and responsibility systems across the supply chain (Maloni & Brown, 2006).

As business survival in the long run is dependent on meeting the expectations of stakeholders, managing organizational relationships with them has been regarded as a means to connect organizational strategy to social and ethical issues (Wartick & Wood, 1998). This has resulted in more consciousness while treating stakeholders, which reflects effective management of positive and negative impacts on people and communities (United Nations, 2015). As a result, social development has become the centre of focus in supply chain practices, and recently there has been an increasing interest in the social pillar of sustainability, driven by the political agenda and business objectives aimed toward developing communities (Colantonio, 2009) and Khan *et al*, 2018*a*).

While the literature does not provide a singular definition to social sustainability (Granovetter, 1973), the concept reflects key themes that portray social issues pertinent to sustainability, such as equity and democracy (Min *et al.*, 2008), access to basic needs (Fine, 2002), and culture and social justice (Sumner, 2008; Avery & Swafford, 2009). For social sustainability to be guaranteed, a broadened set of human needs should be fulfilled in a way that safeguards the nature and its regenerative abilities over time, taking into account maintaining social justice, human dignity, and engagement (Konovsky & Pugh, 1994).

Despite this, social sustainability has been widely referred to as the most vague and elusive concept compared to the other two pillars (Thin, 2002; Dempsey *et al.*, 2011; Vifell & Soneryd, 2012). Far less work has been done on social sustainability (Visser & Sunter, 2002). This shows a gap in the current literature in terms of how social sustainability can be integrated into contemporary decision-making processes (Carter & Rogers, 2008; Seuring & Muller, 2008; Wu & Pagell, 2011). Additionally, most logistics and supply chain management research has examined issues such as the environment, safety, and human rights in a standalone fashion, without consideration of the potential interrelationships among these and other aspects of social responsibility (Carter & Jennings, 2002).

Moreover, while stakeholders vary in the types of relationships they have with the focal organization, the nature and the uniqueness of those relationships influence how an organization responds to the stakeholders' interests and affects how stakeholders relate to the supply chain (Rowley, 1998). The literature, however, falls short in giving credit to the intersections of stakeholders' interests and expectations of social sustainability. Doloi (Doloi, 2012) states that a wider range of actors that are characterized by a web of interests and relative trade-offs must be considered and blended. Moreover, the importance of stakeholders' roles and responsibilities should be demonstrated in relation to their relative stakes in evaluating business social performance. A comprehensive understanding of the actors (stakeholder groups), their roles, and their relationships to other stakeholders is crucial (Doloi, 2012). Thus, stakeholder analysis and

their social performance evaluation can identify the degree of stakes among the stakeholders, prioritizing stakeholders in terms of their involvement in decision making and their interests (Clarkson, 1995; Maignan & Ferrell, 2004).

## 2.2. Social sustainability in supply chains

The social dimension is known, but obtains less prominence than expected in supply chains (Ashby et al., 2012). According to Klassen and Vereecke (2012) social issues in the supply chain are defined as three levels of stakeholders (who), concentrating on the developing set of social concerns for which the organization has impact in the supply chain (which issues), and including management abilities that react to these concerns by moderating risk or improving customer value (how). Supply chain social sustainability consists of multiple core dimensions like equity, safety, health and welfare, philanthropy, ethics, human rights (Mani et al., 2016b). Competitive pressure followed by customers' requirements, financial liquidity and social concern and social sustainability awareness are the main driving powers for the social sustainability in the supply chain (Mani et al., 2015; Sodhi and Tang, 2017). Social sustainability not only plays a significant role in enabling other sustainability initiatives, but social wrongs in one tier of a supply chain can lead to substantial losses for firms across the supply chain (Mani et al., 2016a). Mani et al., (2018) found that social sustainability can absolutely increase supply chain performance.

In response to this reality, supply chain managers are under pressure to integrate sustainability practices throughout the entire supply chain (Marshall *et al.*, 2015). A focus on supply chains is a step towards the broader adoption and development of sustainability (Linton *et al.*, 2007). The term supply chain management has been defined by Lambert *et al.* (2006) as "the integration of key business processes from end-user through original suppliers that provides products, services, and information that add value for customers and other stakeholders". This means that supply chains are made up of many companies and that the sustainability of the chain is dependent on the sustainability of each of those companies. Sustainable supply chain management must take into account a wider range of issues and, therefore, must look at a longer part of the supply chain, not only the parts related to a particular field.

Most businesses are now required to report on certain aspects of corporate social sustainability (Tate *et al.*, 2010). However, despite many efforts to implement social issues in supply chains, social efforts of many companies fall outside of the triple bottom line because companies tend to disconnect existing approaches to social initiatives from organizational strategy (Porter & Kramer, 2006).Supply chains managers are under stakeholders' pressure to incorporate social standards (Carter & Jennings, 2002). Organizations aiming to establish socially sustainable supply chains should first be evaluated in terms of their social impacts on their stakeholders. For instance, in exchange for wages, employees provide a company with skills and expertise. The company has the potential to impact the employees and their families in a positive way by providing good education, childcare, and healthcare. Moreover, the company exchanges money with goods and services provided by suppliers, but it can also shape the values of suppliers by setting standards for social responsibility and selecting suppliers who meet the firm's employment, health, and safety guidelines (Hutchins & Sutherland, 2008). In response, suppliers would compete to reach the level that the company sets. However, the company is also affected by the community, which establishes laws and regulations that should be met. The company also pays its shareholders dividends, and owners request financial accountability from the firm (Carter & Rogers, 2008).

However, responding to the interests of all parties who have stake in the business poses a challenge for managing supply chains (Phillips, 1997). Moreover, only a few studies have investigated social sustainability supply chain practices and their antecedents (Pfeffer, 2010; Pullman & Dillard, 2010; Ehrgott *et al.*, 2011), which urges more exploration of the topic in supply chains, and particularly in service supply chains, where literature is relatively few (Cherian *et al.*, 2010). The present paper, therefore, emphasizes the healthcare supply chain, in which treatment of patients requires input from multiple healthcare providers.

## 2.3. Social sustainability in healthcare supply chain

During the last decade, the healthcare sector has changed enormously in response to the increased competition, the growing influence of patients, and the necessity to deliver health services in a more efficient and effective way (Aptel & Pourjalali, 2001; de Vries & Huijsman, 2011). Healthcare markets are growing under demographic and economic pressures (Morgon, 2015). New circumstances with environmentally generated risk and a shifting disease reality challenges the current health care sustainability model (Pencheon, 2015). With the focus on health, safety and quality, queries have risen concerning the functional application of sustainability concepts in healthcare services and whether such notions can be well-matched with healthcare outcomes (Zadeh et al., 2016).

From a supply chain management perspective, however, the literature is fragmented regarding the healthcare sector. Although many healthcare practitioners have recognized the importance of adopting supply chain management practices, the healthcare sector cannot follow an industrial supply chain approach. This is due to the unique features of the sector, such as the complexity of the technologies being used and the existence of multiple stakeholders (de Vries & Huijsman, 2011). Typically, a supply chain addresses three flows: physical product, information, and financial flow. In most cases, the supply chain design is primarily driven by physical product flow requirements, associated constraints, and opportunities. The healthcare sector is different because financial and information flows play a critical supply chain design decision role (Singh *et al.*, 2006).

Many different stakeholders are involved in healthcare chain practices. Therefore, the application of supply chain management practices in a healthcare setting is related to organizational aspects such as building relationships, allocating authorities and responsibilities, and organizing interface processes (de Vries & Huijsman, 2011). Supply chain management in healthcare includes the internal chain (e.g., patient care unit, hospital storage, and patient) and the external chain (e.g., vendors, manufacturers, and distributors; Rivard-Royer *et al.*, 2002; Schneller & Smeltzer, 2006). It incorporates business activities and operations that integrate a smooth, continuous flow of materials and services for healthcare (Rivard-Royer *et al.*, 2002; Shih *et al.*, 2009).

Social sustainability in healthcare has evolved as a soft infrastructure of a healthy community. A health service is sustainable when operated through an organizational system that is reinforced with sufficient resources and activities to meet individual and public health needs (Oslen, 1998). Furthermore, the human element is involved at every stage of the healthcare process (Santilli & Vogenberg, 2015). Social sustainability is also incorporated with the human side of sustainability (Huq *et al.*, 2014); supporting sustainability practices requires an active interaction between hospitals and their stakeholders. This means that stakeholders such as employees and suppliers play a significant role in supporting social sustainability objectives by driving the change towards

sustainability and providing insights into the successful integration of sustainable practices in healthcare (Marshall *et al.*, 2015).

Despite this, the available literature does not comprehensively reveal the management of business relationships with all stakeholders. Studies focus on the organization's interactions with its external suppliers (Holthausen, 2013; Sanderson *et al.*, 2015), inter-organizational interactions (Huibin SHI, 2014), relationships between physicians and their patients (Grembowski *et al.*, 2002), or intra-organizational interactions, such as team member relationships, supervisor-member relationships (Esmaeilzadeh *et al.*, 2013), and organization-employee relationships (Piening *et al.*, 2013). No previous research comprehensively explores the interconnected relationships in the service supply chain. As noted previously, the flows of resources and information in service supply chains are intricately intertwined (Fitzsimmons & Fitzsimmons, 2006), which calls for addressing all those interactions and their interconnected nature. Furthermore, previous studies fail to investigate how supply chains are influenced when they embark on social sustainability and whether supply chains perceive more drivers, barriers or enablers to social sustainability. For successful adoption of social sustainability across the supply chain, it is logical to explore the motivators and barriers initially (Ajmal *et al*., 2018). The three constructs (motivators, barriers and enablers) of social sustainability pose considerable challenges for the management and supply chains must equip themselves to deal with these constructs (Khan et el., 2018*a*) and this paper deals with this issue in healthcare supply chains.

## 3. Research Framework – Stakeholder Theory

A stakeholder is defined as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Benn & Gaus, 1983; Freeman, 1984). Donaldson and Preston (1995) argue that because stakeholder management encompasses balancing multiple, conflicting stakeholder interests, managers and researchers must simultaneously consider the complete set of stakeholders inside and outside the supply chain. This demands concepts and processes that give integrated approaches for dealing with all stakeholders on multiple issues (Freeman, 1984).

While vast research has investigated stakeholder influence on the adoption of social and environmental practices across supply chains (Mohsen *et al.*, 2014), the theory is restricted to the manufacturing context of supply chains and exclusively conducted in developed regions (Angeleanu *et al.*, 2016). Hence, our proposed research framework (Figure 1) encompasses the perspectives of four mutually important stakeholder groups inside and outside the healthcare supply chain. Those groups are: suppliers, employees, community/patients, and owners/government. These four clusters/groups are the main stakeholders of any healthcare supply chains (Khan *et al*., 2018*b*) and have been involved in this research.

Aiming to explore social sustainability from the angles of stakeholders' perspectives, we rely on stakeholder theory, as it addresses the stakeholder's roles and perceptions and provides a useful lens for analysing the interrelationships between organizations, groups, and individuals (Donaldson & Preston, 1995). Recognizing that few papers have addressed social sustainability from a theoretical lens (Carter & Easton, 2011), we introduce stakeholder theory in healthcare supply chain because the human element is involved at every stage of the healthcare process and because healthcare involves comprehensive systems that treat and prevent diseases (Gattorna, 1998).

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Stakeholder theory (Freeman, 1984) posits that other constituencies than shareowners are to be considered by business managers when formulating processes or making decisions (Phillips, 1997). When making decisions, companies should consider the influence of stakeholders (Phillips, 1997) including customers, employees (Sarkis *et al.*, 2010), suppliers, competitors, governments, media (Friedman & Miles, 2006), and creditors (Co & Barro, 2009). Understanding stakeholders' role and interests and engaging them can improve supply chain performance (Angeleanu *et al.*, 2016). To this end, as stakeholder theory has not been applied yet from the perspective of all stakeholders, this study is among the first to draw on the theory with the purpose of integrating the social perspective of all stakeholders inside and outside the healthcare supply chain in the case of motivators, barriers, and enablers.
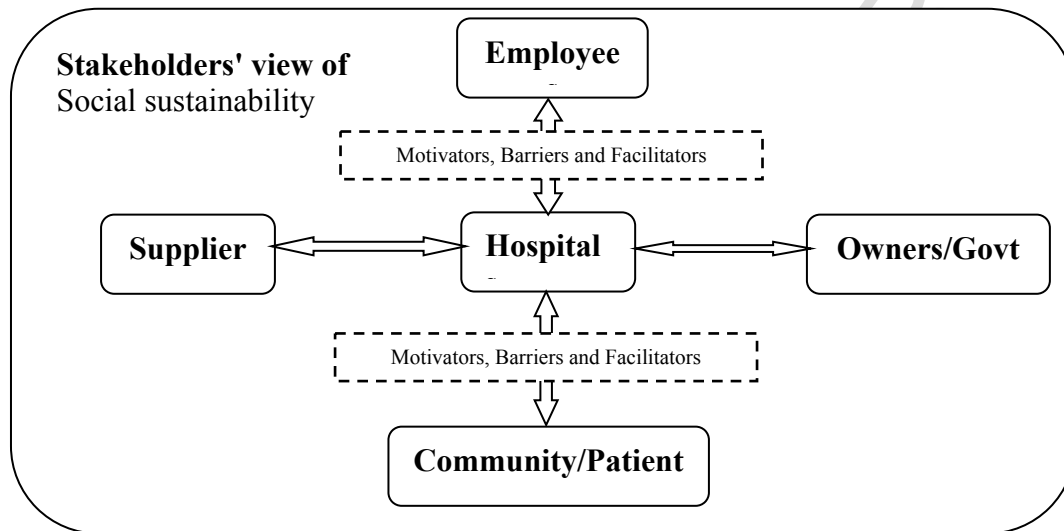


**Figure 1**: Research conceptual framework

## 4. Research Methodology

To test the proposed framework, the study has adopted a survey-based industry research method to collect empirical data from selected hospitals in UAE. The data collected from the empirical study are expected to support the objectives of assessing the current status of social sustainability practices across healthcare supply chains in UAE and providing insights and guidelines to both researchers and practitioners.

### 4.1. Survey tools

The structure of the survey is developed based on the framework in Figure 1. The survey first collected basic hospital information including the type of hospital (public or private) and the number of employees (less than 500 or more than 500). The first section focuses on identifying the motivators, barriers, and enablers of social sustainability for the suppliers of hospitals. The second section identifies the three variables for the hospital employees. The third section outlines the perspectives of the customers (patients and community). Finally, the fourth section addresses the perceptions of owners/governments. The survey includes several sections that are set to be completed by the either middle or top managers of different departments (Purchasing, Strategic, Human resource and Customer service) of the healthcare facility.

An exploratory survey was designed and distributed to 10 top UAE-based healthcare facilities selected by the researchers. It was assured that selected healthcare units are implementing social sustainability practices as highlighted in their annual review report submitted to healthcare regulatory authorities of the UAE. Target population was senior managers and directors (with more than 12-year experience in healthcare) of different departments including purchasing, strategy, human resources and customer service. Initially, sixty senior managers and directors from selected healthcare units were randomly shortlisted from the websites and to reach the target population. The shortlisted respondents were contacted by telephone and briefed about the content of the survey and research. Forty-eight respondents agreed to participate and shared their email addresses and questionnaire was emailed to all of them. A follow up reminder was sent after two weeks and finally 40 filled surveys were qualified based on completeness and content. Given the exploratory nature of the study, the 40 complete surveys were found to be sufficient sample size for exploratory study (Al-Amor and Hussain, 2017). Since Government is also an important stakeholder as shown in Figure 1, thereafter this section of questionnaire was also filled by 10 middle and top managers of healthcare regulatory authorities of the UAE. All surveys have been used for analysis purpose

The results of the survey were first validated for content and then analysed to assess the perspectives of each of the four stakeholder groups of this study pertinent to social sustainability across healthcare supply chains. Content validity in exploratory research is derived during concept elicitation, is the measurement property that assesses whether outcomes are comprehensive and adequately reflect the phenomenon for the population of interest (Brod *et al.*, 2014). In this research, outcomes of the exploratory survey were discussed with 5 healthcare senior managers and they agreed with the identified themes of social sustainability across various nodes of healthcare supply chain. Collected information was also used to answer the key research questions and to develop insights and guidelines for effective implementation of social practices in the healthcare industry in the context of UAE. Using SIPOC chart, Figure 2 represents the interrelationships of stakeholders' perspectives about social sustainability and the impacts each stakeholder has on the others.

SIPOC is a widely used tool for process modeling, diagnosis, and improvement for business planning, re-engineering, and continuous improvement (Rasmusson, 2006). SIPOC is a systemetic procedure to explore all relevant elements of a process in a systematic tabulated format. SIPOC chart is used in this research as a platform to explore social sustainability practices and to allocate them across the supply chain. Results from surveyed hotels are used as inputs to construct the SIPOC chart. The SIPOC chart can be applied to list the healthcare suppliers, the inputs (such as employees) supplied and used by main healthcare processes, the outputs (products and services) of these processes, and their customers (patients and community). This facilitates linkages of different supply chain internal and external stakeholders (Alaomar and Hussain., 2017). Internal stakeholders in this study are suppliers, employees, and patients while external stakeholders are community and Government.In this research, we identify owners and government as a stakeholder group that imposes such an external impact on the chain. This helps in seeking factors that affect the successful implementation of social sustainability practices in healthcare supply chain and at the same time in generating themes of common interest as perceived by all stakeholder groups. This assists the hospital in developing the needed know-how and organizing the efforts for effective implementation of the most common and agreed-on practices of social sustainability.
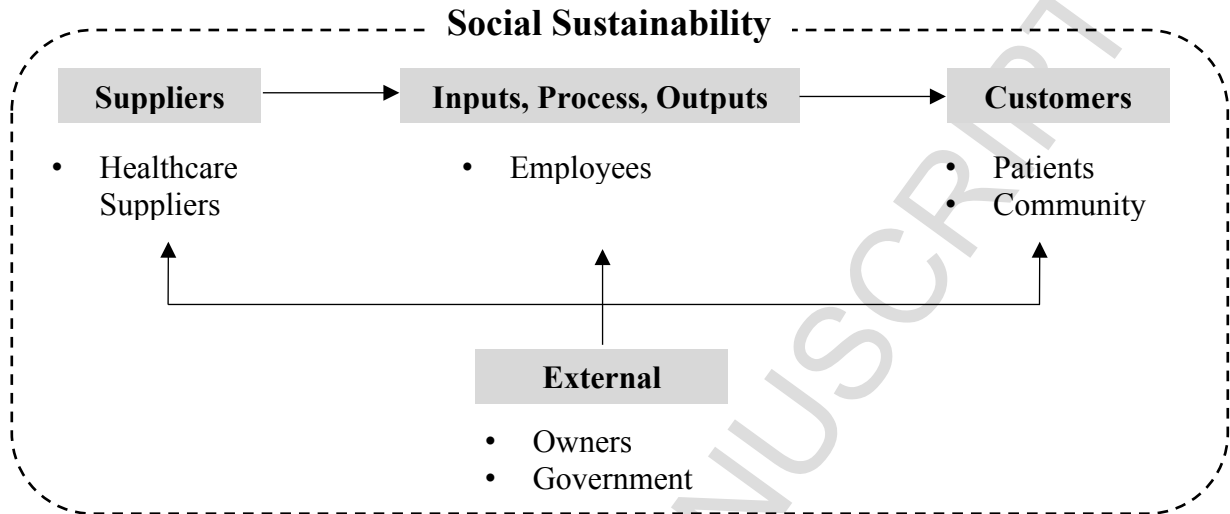
**Figure 2**: A platform for SIPOC chart of social sustainability in a hospital supply chain

## 4.2. Research Objectives

A key objective of the study is to investigate social sustainability practices in the supply chain of the UAE healthcare sector. The research sub-objectives are as follows:

- **1**. To identify motivators, barriers, and enablers (facilitators) of social sustainability from the view of the hospital's stakeholders;

- **2.** To identify the commonalities among stakeholder groups in terms of motivators, barriers, and enablers of social sustainability in healthcare, and
- **3.** To build on a comprehensive picture of what drives, inhibits, and facilitates social sustainability practices in healthcare, as perceived by all stakeholder groups.

## 5. Analysis and Findings

As this paper explores the views of four stakeholder groups regarding social sustainability implementation in healthcare supply chain, an open-ended questionnaire was distributed to investigate the motivators, barriers, and enablers for social improvements from the perspectives of suppliers, patients and community (customers), employees, and government/owners**.** The inputs of the participants were initially filtered and shortlisted to generate main themes at each node of the chain. Repetition of themes was observed among participant's responses and such information was filtered in order to avoid duplication of themes (e.g. out of 40 respondents, 21 mentioned that

accountability is the motivational factor of social sustainability for suppliers as shown in table 1). Furthermore, few inputs of various respondents were merged to introduce a standard theme. For example, cost efficiency (as reporter in Table 1, Column 1) was reported as a supplier's social sustainability motivational factor. Out of 40 respondents, 12 mentioned cost as a motivational factor and 15 mentioned efficiency and we merged both inputs under a theme of "Cost Efficiency" and so on. These themes help distinguish between the views of all stakeholders in terms of what is uniquely identified by each stakeholder and what is agreed on by two, three, or all of the four groups. The SIPOC table was developed by aggregating the survey results (i.e., allocating social sustainability themes to different nodes of the healthcare supply chain). Each node was represented by a column in the SIPOC chart.

## 5.1. Social sustainability motivators

A thorough analysis of the responses to the exploratory survey on the motivators of social sustainability resulted in common themes, presented in Table 1. These themes were reached after eliminating repetitive responses and grouping the responses that relate to the same concept. The final list of motivators includes 25 factors identified by suppliers, 17 by customers, 19 by employees, and 12 by government/owners.

**Table 1:** Stakeholders' views of social sustainability motivators in healthcare

| Suppliers | Community/Patients | Employees | Government/Owners |
|---|---|---|---|
| 1. Accountability | Auditing & accountability | Availability of resources | Competitive Advantage |
| 2. Business Performance Improvements | Continuous Assessment and Feedback | Competitive Advantage | Corporate social responsibility |
| 3. Collaboration with service providers & partners | Corporate Social Responsibility | Cooperation and Support | Cultural value & ethics |
| 4. Competitive Advantage | Cultural values & ethics | Customers' Satisfaction | Green supply chain practices |
| 5. Corporate Responsibility | Engagement & empowerment | Engagement & Empowerment | Health education & awareness |
| 6. Cost Efficiency | Green Supply Chain practices | Equality of Opportunity | Image & Reputation |
| 7. Cultural values & integrity | Health Education and Awareness | Fairness & Equity | Innovation |
| 8. Customers' Expectations & demand | Open Communication and Connectivity | Flexibility | Policies and Regulations |
| 9. Effective Financial system | Organizational image & reputation | Learning & Improvement | Quality of customer services |
| 10. Empowerment & attention | Promoting Community Welfare & Wellbeing | Management Support | Stakeholder management |
| 11. Equality of opportunity | Regulatory Compliance | Morals & Accountability | Supply chain value |
| 12. Flexibility | Resources Efficiency | Organizational Culture | Sustainability-based strategy |

| Suppliers | Community/Patients | Employees | Government/Owners |
|---|---|---|---|
| 13. Frequency of orders | Safety and Security | Policies & Regulations | |
| 14. Image & Reputation | Scope of the services | Productivity & Performance | |
| 15. Innovation | Supply chain value | Reward & Compensations | |
| 16. Market share & profitability | Sustainability-based strategy | Sustainability Initiatives | |
| 17. Market trends | Technology & Innovation | Technological Advancement | |
| 18. Open Communication and Feedback | | Wellbeing and health promotion | |
| 19. Policies & regulations | | Workplace Improvements | |
| 20. Positive outcomes to community | | | |
| 21. Quality consciousness | | | |
| 22. Sustainability strategy & goals | | | |
| 23. Sustainable supply chain practices | | | |
| 24. Technological Advancements | | | |
| 25. Time & resources | | | |

The next step was to find whether common perceptions exist among stakeholders. Analysing the factors in the previous table, some factors were found common among the groups. Therefore, Table 2 classifies motivators according to the commonality in stakeholders' views of what drives social sustainability practices in healthcare. Groups A, B, C, and D contain the motivators that are uniquely identified by each stakeholder group. Groups E, F, and G reflect motivators common to two stakeholder groups, whereas Groups H, I, J, and K are agreed on by three stakeholder groups. Group L shows the motivators that are commonly identified by the four stakeholder groups of this study.

**Table 2:** Commonality in stakeholders' views of social sustainability motivators

| Stakeholder group | Common factor/s | Group |
|---|---|---|
| **Suppliers** | • Cost Efficiency<br>• Effective Financial system<br>• Frequency of orders<br>• Market share & profitability<br>• Market trends<br>• Positive outcomes to community<br>• Quality consciousness | A |

| Stakeholder group | Common factor/s | Group |
|---|---|---|
| **Customers & Community** | • Continuous Assessment and Feedback<br>• Safety and Security<br>• Scope of the services | B |
| **Employees** | • Availability of resources<br>• Learning & Improvement<br>• Management Support<br>• Reward & Compensations | C |
| **Governments & Owners** | • Stakeholder management | D |
| **Suppliers-customers** | • Open communication & feedback<br>• Resource efficiency | E |
| **suppliers-employees** | • Productivity & performance<br>• Cooperation & support<br>• Equality of opportunity<br>• Fairness & equity<br>• Flexibility | F |
| **suppliers-government** | - | - |
| **employees-customers** | - | - |
| **employees-government** | - | - |
| **customers-government** | • Supply chain value | G |
| **suppliers-employees-customers** | • Auditing & Accountability<br>• Empowerment & engagement | H |
| **suppliers-employees-government** | • Competitive advantage<br>• Customer-oriented approach<br>• Green supply chain practices | I |
| **suppliers-customers-government** | • Corporate social responsibility<br>• Image & reputation | J |
| **employees-customers-government** | • Health education & awareness | K |
| **Suppliers-customers-employees-government** | • Culture & values<br>• Innovation & technology<br>• Sustainability strategy & goals<br>• Policies & regulatory compliance | L |

It should be noted that "suppliers-government", "employees-customers", and "employees-government" intersections did not report common factors that were not reported by other groups. Hence, while both stakeholders in each of the three intersections above agreed that culture and values, for instance, are one of the motivating factors of social sustainability, the fact that this factor was reported by all other stakeholders eliminates the uniqueness related to each of the three intersections and declares an overall consensus towards what drives social sustainability.

The intersection of "suppliers-employees-customers" reveals that auditing and accountability and stakeholders' empowerment and engagement would help healthcare management develop a more socially sustainable approach. While accountability reflects deeper social responsibility towards

stakeholders, engaging stakeholders would influence profitability of the business in a positive way (Belal, 2002).

Moreover, "suppliers-employees-government" together emphasize that the competitive position of the firm, focus on customers, and green supply chain practices are necessary for healthcare to be socially sustainable. Healthcare supply chains can use "sustainable strategies in their planning and operations of facilities to set themselves apart from their competition (Sagha Zadeh *et al.*, 2016).

"Suppliers-customers-government" groups confirm that social sustainability is driven by strong image and high responsibility towards the society. Furthermore, the groups "employees-customers-government" believe that health education and awareness are critical for a supply chain to achieve social sustainability. This means that it is not enough that employees and suppliers are aware and trained to be more socially responsible. The whole community needs to understand the impact of social sustainability of the business and its potential benefits to the society. Awareness is defined as knowing about a sustainability issue or being informed that a sustainability issue exists. This may include general awareness of an environmental or social issue or a particular type of sustainability practice (Meixell & Luoma, 2015).

While the intersection of views among three groups of stakeholders provides valuable information for healthcare managers to push social sustainability throughout the supply chain, it is argued that a consensus among all stakeholders inside and outside the supply chain would generate greater benefits. The findings reveal that all groups of stakeholders contend that culture and values, innovation and technology, sustainability integration in business strategy, and policies and regulatory compliance are all drivers of social sustainability in the supply chain. Figure 3 visualizes the commonality in stakeholders' view of social sustainability motivators. As shown in the figure, areas of intersection represent the commonality among the stakeholder groups, and intersection L mirrors the intersection among all four stakeholders.
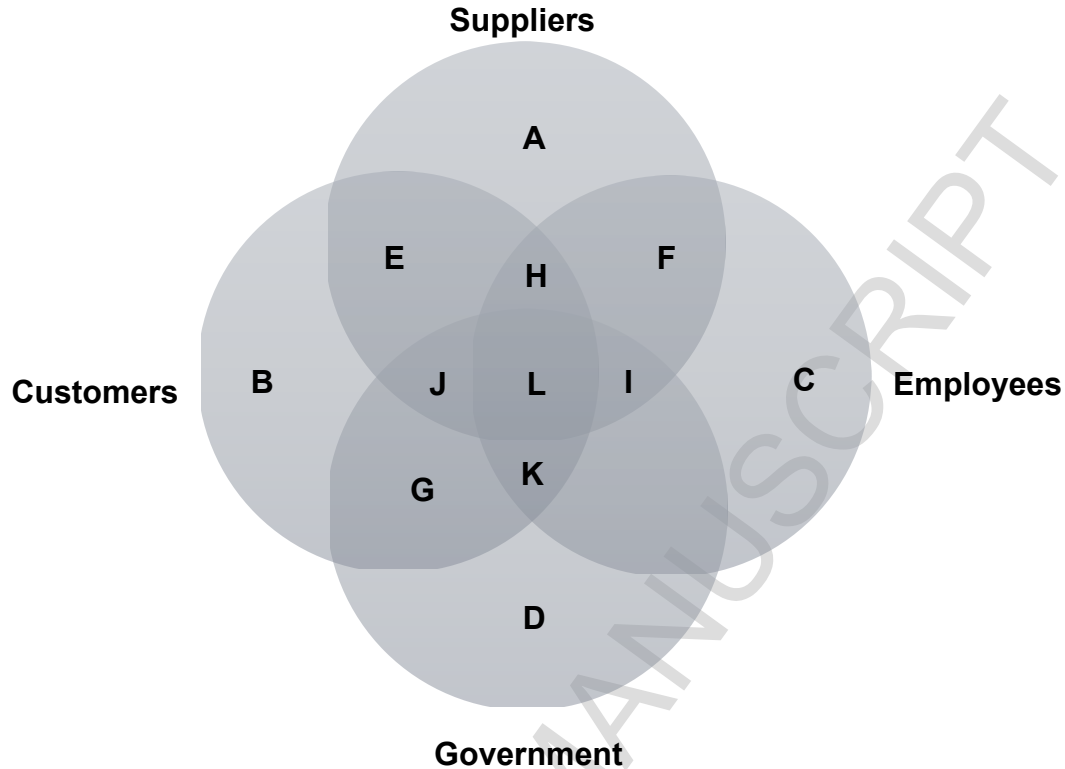
**Figure 3:** Commonality in stakeholders' view of social sustainability motivators

## 5.2. Social sustainability barriers

Following the same steps as those used for motivators, Table 3 lists the themes of barriers to social sustainability in the eyes of stakeholders. The final list of motivators includes 18 factors identified by suppliers, 18 by customers, 22 by employees, and 14 by government/owners.

**Table 3:** Stakeholders' views of social sustainability barriers in healthcare

| Suppliers | Community/Patients | Employees | Government/Owners |
|---|---|---|---|
| 1. Buyer-supplier exchange issues | Availability and Scope of Service | Communication barriers | Conflict of interests |
| 2. Changing Business Environment | Communication & feedback barriers | Conflict in interests | Cost pressure |
| 3. Communication barriers | Conflict of stakeholders interests | Cost pressure | High competition & external pressure |
| 4. Cost pressure | Cost pressure | Cultural differences | Image & reputation |
| 5. Demand issues | Cultural barriers | Employees' Dissatisfaction | Lack of Consensus and Cooperation |

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| Suppliers | Community/Patients | Employees | Government/Owners |
|---|---|---|---|
| 6. High competition | High competition | High competition | Lack of Innovation |
| 7. Lack of accountability and social audit | Lack of awareness & engagement | Lack of Awareness | Lack of Knowledge |
| 8. Lack of awareness & knowledge | Lack of innovation & research | Lack of engagement | Lack of organizational commitment to sustainability |
| 9. Lack of commitment to sustainability | Lack of organizational commitment to sustainability | Lack of innovation & research | Perception towards sustainability |
| 10. Lack of coordination & collaboration | Perception towards sustainability | Lack of knowledge & efficiency | Policies & regulations |
| 11. Lack of resources | Policies & regulations | Lack of organizational commitment to sustainability | Poor corporate structure & processes |
| 12. Lack of training and experience | Poor corporate structure & processes | Lack of training | Poor Customer Service |
| 13. Organizational culture & design | Poor Customer Service | Low flexibility | Poor management & leadership support |
| 14. Perception towards sustainability | Profitability focus | Organizational culture & ethics | Resources limitation |
| 15. Policies & regulations | Quality Issues | Perception towards sustainability | |
| 16. Poor Risk Management Capabilities | Resistance to Change | Policies & regulations | |
| 17. Profitability focus | Resource limitation | Poor Corporate Structures and Processes | |
| 18. Quality Issues | Uncertainty of demand | Poor management & leadership support | |
| 19. | | Resistance to Change | |
| 20. | | Resource Limitation | |
| 21. | | Shortage of Skills | |
| 22. | | Substandard Working Conditions | |

Table 4 classifies those barriers according to the commonality in the views of what hinders social sustainability implementation within healthcare supply chain. Groups A, B, C, and D contain the barriers that are uniquely identified by each stakeholder. Groups E, F, G, H, and I reflect the barriers found common to two stakeholder groups, whereas Groups J, K, and L are agreed on by three stakeholder groups. Group M shows the obstacles that are commonly identified by all four stakeholder groups.

**Table 4:** Commonality in stakeholders' views of social sustainability barriers

| Stakeholder group | Common factor/s | Group |
|---|---|---|
| **Suppliers** | • Buyer-supplier exchange issues<br>• Lack of accountability and social audit<br>• Lack of coordination & collaboration<br>• Poor Risk Management Capabilities<br>• Changing Business Environment | A |
| **Customers & Community** | • Availability and Scope of Service | B |
| **Employees** | • Employee dissatisfaction<br>• Low flexibility<br>• Shortage of Skills<br>• Substandard Working Conditions | C |
| **Governments & Owners** | • Image & reputation<br>• Lack of Consensus and Cooperation | D |
| **suppliers-customers** | • Uncertainty of demand<br>• Profitability focus<br>Quality issues | E |
| **suppliers-employees** | • Lack of training<br>• Organizational culture | F |
| **suppliers-government** | - | - |
| **employees-customers** | • Resistance to Change<br>• Lack of engagement<br>• Cultural barriers | G |
| **employees-government** | • Poor management & leadership support | H |
| **customers-government** | • Poor customer service | I |
| **suppliers-employees-customers** | • Communication barriers<br>• Lack of awareness | J |
| **suppliers-employees-government** | • Lack of knowledge | K |
| **suppliers-customers-government** | - | - |
| **employees-customers-government** | • Lack of innovation<br>• Conflict of interests<br>• Poor corporate structure & processes | L |
| **Suppliers-customers-employees-government** | • Policies & regulations<br>• Cost pressure<br>• Resources limitation<br>• High competition<br>• Lack of commitment to sustainability<br>• Perception towards sustainability | M |

"Suppliers-employees-customers" together agree that communication barriers and lack of awareness are obstacles of social sustainability. Lack of knowledge is also a barrier, as reported by "suppliers-employees-government". In addition, "employees-customers-government" groups

point to lack of innovation, conflict of interests, and poor corporate structure and processes as major obstacles to achieving social sustainability in healthcare.

The findings also reveal a consensus among all groups of stakeholders that policies & regulations, cost pressure, resources limitation, high competition, lack of commitment to sustainability, and perception towards it all act as barriers to successful integration of social sustainability in healthcare supply chain.

Figure 4 provides a visual illustration of the commonality in stakeholders' view of social sustainability barriers.
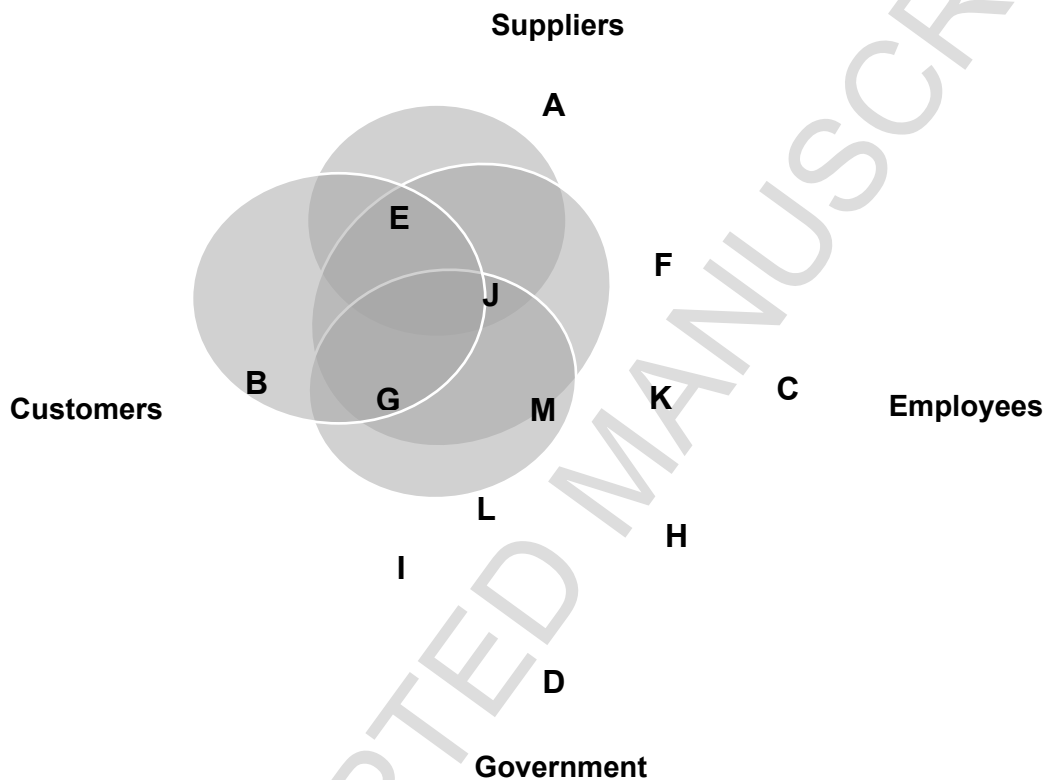
**Suppliers**

A

E

F

J

B

G

M

K

C

**Customers**

**Employees**

L

H

I

D

**Government**

**Figure 4:** Commonality in stakeholders' view of social sustainability barriers

### 5.3. Social sustainability enablers

Table 5 lists the themes of social sustainability enablers from stakeholders' perspectives. The final list of motivators includes 18 factors identified by suppliers, 17 by customers, 16 by employees, and 14 by government/owners.

**Table 5:** Stakeholders' views of social sustainability enablers in healthcare

| Suppliers | Community/Patients | Employees | Government/Owners |
|---|---|---|---|
| 1. Change Management | Accountability & Auditing Practices | Accountability & Auditing Practices | Accountability & Auditing Practices |
| 2. Collaboration & Co-partnership | Availability and Scope of the Service | Awareness & Education | Effective Leadership & Management Practices |
| 3. Education & Awareness | Collaboration & Co-operation | Employees' Welfare & Wellbeing | Fairness & Justice |
| 4. Effective Financial System | Community Engagement | Empowerment & Engagement | Human Resources Management and Development |
| 5. Equity & Fairness | Customer Service | Fairness & Justice | Innovation & Technological Advancements |
| 6. Establishing and Emphasizing Quality standards | Education & Awareness | Innovation & Technological Advancements | Open Communication & Information Sharing |
| 7. Fair Trade Practices | Effective Leadership & Management | Leadership & Management Support | Organizational Culture & Strategy |
| 8. Flexibility & Resilience | Government Support | Open Communication & Information Sharing | Organizational Image & Reputation |
| 9. Innovation & Technological Advancement | Health & Safety | Organizational Culture & Strategy | Policies & Regulations |
| 10. Long term Relationship & Exchange | Innovation & Technological Advancements | Policies & Regulations | Resources Efficiency |
| 11. Open Communication & Information Sharing | Long Term Benefits | Resources Efficiency | Risk Management & Safety Measures |
| 12. Organizational Culture & Strategy | Open Communication & Feedback | Risk Management & Safety Measures | Stakeholders' Partnerships & Collaboration |
| 13. Performance Improvements | Organizational Culture & Strategy | Skillful Human Resources | Sustainable Supply Chain Practices |
| 14. Resources Efficiency | Policies & Regulations | Sustainable Supply Chain Practices | Workplace Improvements |
| 15. Risk Management & Safety Standards | Quality Assurance | Training & Development | |
| 16. Stakeholders' influence | Resources Efficiency | Workplace Improvements | |
| 17. Supplier's Social Responsibility | Sustainable Supply Chain Practices | | |
| 18. Sustainable Supply Chain Practices | | | |

Based on the content analysis, Table 6 further classifies those themes according to the commonality in the views of what facilitates integration of social sustainability throughout healthcare supply chain. Groups A, B, C, and D contain the enablers that are uniquely identified by each stakeholder. Groups E and F reflect common themes found in two stakeholder groups,

whereas Groups G, H, I, and J are agreed on by three stakeholder groups. Group K shows the facilitators that are commonly identified by all the four stakeholders.

**Table 6:** Commonality in stakeholders' views of social sustainability enablers

| Stakeholder group | Common factor/s | Group |
|---|---|---|
| **Suppliers** | • Change Management<br>• Long term Relationship & Exchange<br>• Effective Financial System<br>• Fair Trade Practices<br>• Flexibility & Resilience<br>• Stakeholders' influence<br>• Supplier's Social Responsibility | A |
| **Customers & Community** | • Community Engagement<br>• Availability and Scope of the Service<br>• Customer Service<br>• Government Support<br>• Health & Safety<br>• Long Term Benefits | B |
| **Employees** | • Employees' Welfare & Wellbeing<br>• Empowerment & Engagement<br>• Skillful Human Resources | C |
| **Governments & Owners** | • Organizational Image & Reputation | D |
| **suppliers-customers** | • Establishing and Emphasizing Quality standards | E |
| **suppliers-employees** | - | - |
| **suppliers-government** | - | - |
| **employees-customers** | - | - |
| **employees-government** | • Human Resources Management and Development | F |
| **customers-government** | - | - |
| **suppliers-employees-customers** | • Education & Awareness | G |
| **suppliers-employees-government** | • Equity & fairness<br>• Workplace performance improvements<br>• Risk Management & Safety Standards | H |
| **suppliers-customers-government** | • Collaboration & Co-operation | I |
| **employees-customers-government** | • Accountability & Auditing Practices<br>• Policies & Regulations<br>• Effective Leadership & Management Practices | J |
| **Suppliers-customers-employees-government** | • Innovation & Technological Advancement<br>• Open Communication & Information Sharing<br>• Organizational Culture & Strategy<br>• Resources efficiency<br>• Sustainable Supply Chain Practices | K |

"Suppliers-employees-customers" together agree that education and awareness facilitate social sustainability. Moreover, "suppliers-employees-government" state that equity and fairness, performance improvements, and risk management and safety standards should be established to nurture social sustainability. Collaboration and cooperation are also emphasized by "suppliers-customers-government" groups, whereas "employees-customers-government" agree on the need for accountability & auditing practices, policies and regulations, and effective leadership and management so that healthcare facilities reach a point where they can be socially responsible.

All groups of stakeholders perceive that the availability of innovation and technological advancement, open communication and information sharing, organizational culture and strategy, resources efficiency, and sustainable supply chain practices would help organizations lead the shift to socially sustainable practices in the supply chain. For instance, clear communication is needed among all stakeholders to set goals early and to implement, evaluate and communicate the outcomes, thereby facilitating healthcare sustainability trends (Sagha Zadeh *et al.*, 2016).

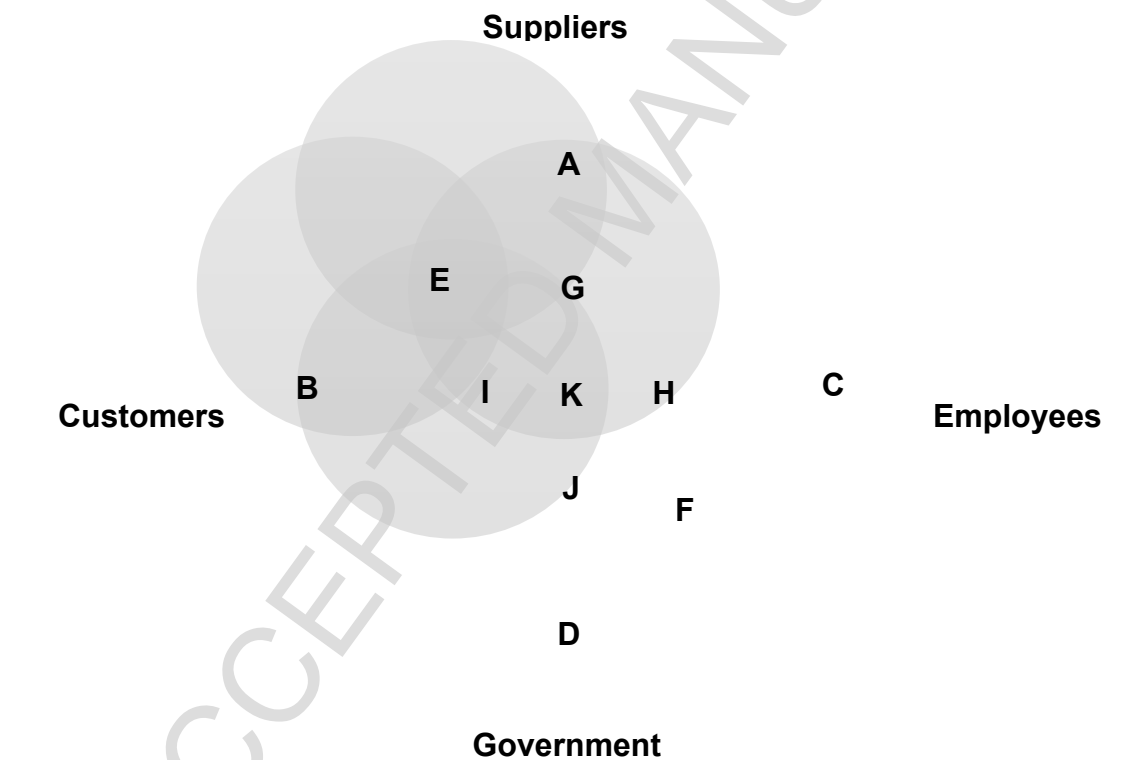Figure 5 represents the groups of enablers and their intersections among stakeholders.



**Figure 5:** Commonality in stakeholders' view of social sustainability enablers

## 6. Discussion

This paper draws on stakeholder theory to explore the views of multiple stakeholder groups in service supply chains, and more in particular, in healthcare. This paper presents an exploratory study of social sustainability – which is concerned with the human side of sustainability. The operations and supply chain management literature on social sustainability is extremely limited (Gimenez and Tachizawa, 2012; Khan et al., 2018a). This would respond to the dearth of research on social sustainability supply chain practices and (Pfeffer, 2010; Pullman & Dillard, 2010; Ehrgott *et al.*, 2011), by investigating the adoption of social sustainability in supply chains to understand the drivers, facilitators and hindrances in their implementation.

This exploratory study seeks to identify the reasons why health care supply chains are adopting socially sustainable practices; and, how the implementation process is both facilitated and impeded. In this context, paper make following novel contributions to the field of sustainable operations and supply chains. Firstly, paper focuses on the exploration of social sustainability, which is an under-researched area in general in supply chains in general and service (healthcare) supply chains in particular. Secondly, most of the previous work has focused on single tier of supply chain while our work includes all tiers of supply chain using a systematic tool of SIPOC. Thirdly, it provides not only the analysis of different stakeholder's opinion, but it also highlights the boundaries/commonalities of motivators, barriers and enablers of social sustainability among various tiers of health care supply chain, as shown in Figures 3, 4 and 5.

The results offer insights into the integrated perspectives of four stakeholder groups: suppliers, employees, customers/community, and government/owners, on issues related to social sustainability practices in healthcare supply chains. Our findings suggest that a comprehensive analysis of stakeholders' opinions regarding the factors that constitute a socially sustainable supply chain would help hospital managers balance the expectations of all involved parties, through obtaining the highest benefits at the lowest costs. Healthcare management must consider the entire supply chain, and not just those links that belong to their own sphere of responsibility (Hauschild *et al.*, 2005; Windsor, 2006). They also have to balance their responsibilities to multiple stakeholders (Hart, 1995; Starik & Rands, 1995).

As shown in Figure 6, the notable motivators of social sustainability explored through health care supply chains are Culture & values, innovation and technology, sustainability goals and policies and compliances. In terms of barriers to implementing social sustainability in health care supply chains, policies & regulations, cost, resource limitations, high competition, lack of commitment and perception towards sustainability are the major reasons. Major enablers of social sustainability identified across health care supply chains are Technological advancement, Communication, organizational culture, resource efficiency and sustainable practices. Some of our findings on the motivators, barriers and enablers support and challenge prior research, but a number of novel factors have been also explored (see Figure 6). For example, we have identified that cost, resource limitations and policies and regulations as important barriers of social sustainability in health care supply chains and this is accordance with the findings of Huq *et al* (2014). On the other hand, lack of commitment and perception towards sustainability are the novel barriers for implementing social sustainability in health care supply chains. Similarly, innovation & technology and culture & values have not been identified in the literature as the motivators of social sustainability. Interestingly, high competition has been identified as a motivator of social sustainability in manufacturing supply chains (Huq et al., 2014) while this element has been identified as a major barrier of social sustainability in health care

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supply chains. Likewise, Khan et al (2018b) have recognized organizational culture as a barrier of social sustainability while our exploration shows that this is among the motivators and enablers of social sustainability. Correspondingly, resource efficiency and organizational culture have been identified as a novel enabler of social sustainability across health care supply chains.
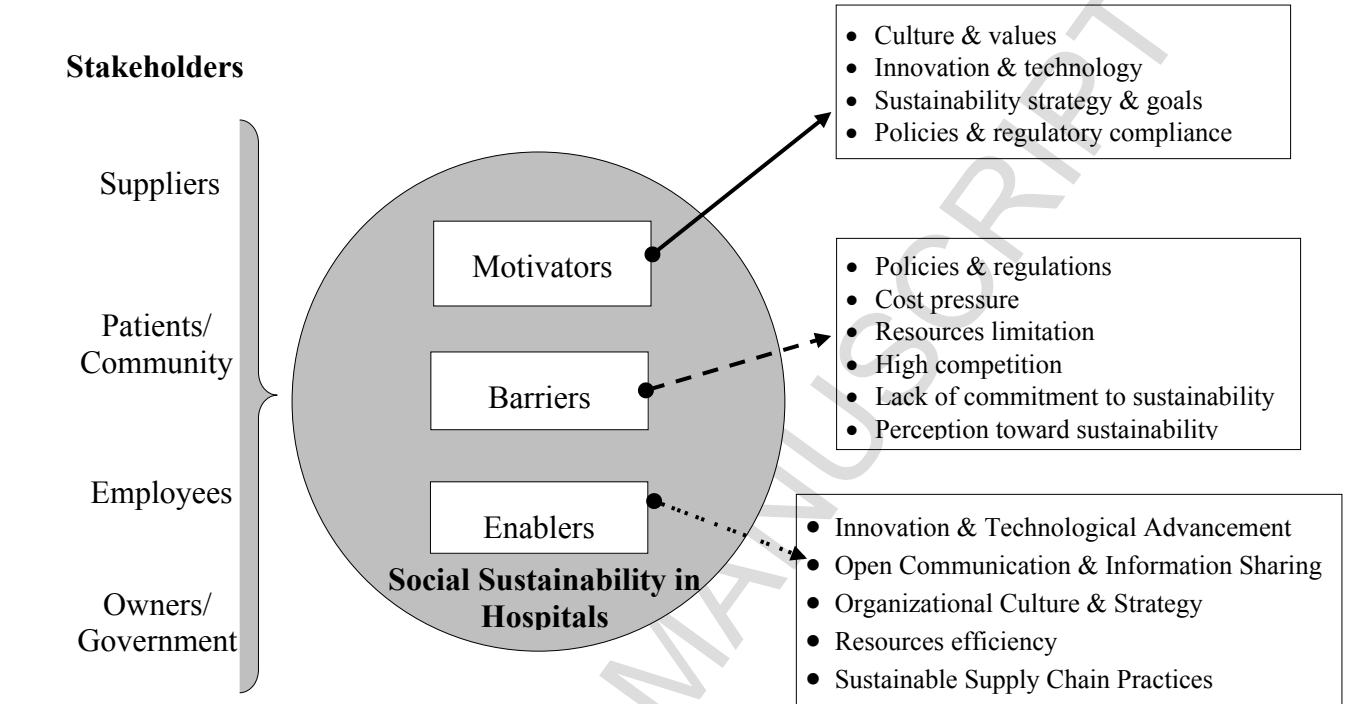


**Figure 6:** Comprehensive stakeholders' view of social sustainability

Figure 6 also shows, we argue that social practices have abrupt and entire impact, which means that working on one factor would not only have impact on that single factor, but it would also extend to others. For example, if hospitals integrate social sustainability goals in their strategies (motivator), a positive perception towards sustainability would increase people's commitment to social issues (two of the barriers would be overcome) and that would solidify a culture that supports social sustainability practices (enabler). Providing a certain motivator would lead to overcoming a barrier and that would lead to a more socially sustainable behaviour. For example, identifying the existing links between sustainable design and healthcare facilities' strategy and missions would help overcome cultural and psychological barriers and enhance positive attitudes towards social sustainability. Sustainable healthcare supply chains would only stay competitive by adopting strategies with lower costs, and less complexity of the process would support hospitals' mission of health and treatment (Lavy & Fernández-Solis, 2009).

## 7. Conclusions

The framework of this study is meant to help the hospital prioritize the areas it needs to address. Motivators, obstacles, and facilitators mentioned in Figure 6 reflect those the hospital needs to

emphasize by making major improvements to reach an acceptable level of performance in social sustainability. Setting priorities would help management allocate more resources and efforts to areas emphasized by all stakeholders. Once the supply chain reaches a level where it fulfils the areas identified by all stakeholders, it can move to focus on the other factors highlighted by group of stakeholders.

For the framework to be effective, hospitals have to analyse their business strategies and sustainability initiatives to determine the facilitators that they already have and the facilitators they should improve; the motivators the company has offered to stakeholders and how effective they are, and the obstacles that the company faces while implementing social sustainability. Afterwards, it becomes easier to spot areas of improvement in the business strategy and the resources needed to make improvements. Changing or adjusting business strategy is an essential part of the whole process to ensure that social sustainability is at the heart of healthcare supply chain.

## 7.1 Implications

It is vital in today's competitive environment to realize that sustainability goes beyond environmental issues. More and more managers in supply chains are trying to proactively respond to the social needs of their stakeholders. This pronounced rigor frames the social aspects for today's healthcare organizations from being a mere act of philanthropy to the real societal stakes they must incorporate in their strategies. This requires them to enact/respond to various measures/challenges of social sustainability. A smart strategy to encompass social measures would rather enhance the experience of all the stakeholders in their supply chain. This paper helps healthcare managers make smarter decisions based on their own supply chain. Besides, it would foster a diligent program to engage all the stakeholders in forming better coordination schemes. Although the set of motivators, barriers and enablers may be different for every healthcare supply chain, a broader understanding of the scope of the area would help them in

— Setting competitive standards for patient-care, diagnosis, surgical-procedures, medicine-administration and food-supply etc.
— Ensuring that their middle-level management positions are held by individuals with intrinsic background with social causes.
— Setting strict social criteria to select suppliers from emerging economies
— Guarding against their ethical compromises and adopting transparent governance procedures in order to be more accountable to their stakeholders
— Encouraging an open participation and employee engagement program to increase innovation and efficiencies throughout their operations

## 7.2 Limitations and future research directions

Though this study highlights indicators of social sustainability from stakeholders' perspective, it has some limitations that could be addressed in a future research. For example, one may explore

— the validity of the identified factors (motivators, barriers and enablers) in other service supply chains.
— the similarities and contrasts with respect to the identified factors in the neighbouring countries.

— a comprehensive set of factors that encompass the environmental and economic aspects in a service supply chain, along with the identified social aspects.

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**Highlights**

1- To apply stakeholder theory and Supplier-Input-Process-Output-Customer (SIPOC) technique for investigating the issue of social sustainability in health care supply chains.

2- to explore the motivators, barriers, and enablers of social sustainability in healthcare supply chains from stakeholders' perspectives;

3- to identify commonalities of social sustainability perceptions among stakeholder groups,

4- to develop a comprehensive social sustainability framework that integrates the perspectives of all stakeholder groups within the context of UAE.

5- To recommend strategies for improving the measures of social sustainability across the entire health care supply chain.