

Modelling and analysis of barriers to implementation social sustainability practices using MICMAC approach

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Abstract

The objective of this study is to evaluate the crucial barriers to the successful implementation of social sustainability initiatives. We have used two distinctive modelling approaches to investigate the contextual relationship between the key barriers and to rank them concerning their importance. We identified barriers through literature review and data collected from senior managers from four manufacturing industries. Interpretative structural modelling (ISM) approach is used to develop a hierarchical structure for analyzing the interactions among the key barriers. MICMAC (Matriced' Impacts Croise's Multiplication Appliquée a UN Classement) method is then used to examine the driving and the dependence power of key barriers. ISM model highlights that lack of involvement of operational staff in planning and lack of supportive institutional policies are the key barriers. These barriers that lead to lack of understanding customer needs and exchange of information and lack of managerial capabilities for implementation and adaptation to new health and safety practices. Whereas, MICMAC analysis revealed lack of knowledge on resource management and lack of trained people drive the other barriers. This suggests that firm make social sustainable development performance by addressing these linkages barriers and driving barriers in manufacturing firms. Production managers, supply chain designers and policymakers can utilise the findings of the present study.

Keywords: Social sustainability initiatives; interpretative structural modelling; health and safety practices, customer needs;

1. Introduction

In recent years, issues related to global climate change conditions due to pollution emission for sustainable developmen have become more complex(Awan & Abbasi, 2013).Social sustainability performance has attracted attention among the academicians and practitioners of the supply chain. Many previous studies have focussed on the concept of 'social sustainability' (Anisul Huq et al., 2014; Hutchins and Sutherland, 2008; Mani et al., 2015). Some current studies have identified and analysis of barriers in "green supply chain management practices" (Govindan et al., 2016; Mathiyazhagan et al., 2013). Social sustainability is a prominent part of the many global initiatives in the field of supply chain management (Husgafvel et al., 2015). Government regulations have increased pressure from the suppliers is a significant determinant of awareness and effectively integrating sustainability concerns into their operational practices(Awan, 2017; Sarkis et al., 2010).The social sustainability issues gaining attention in developing countries industries to integrate sustainability concerns into their strategic agenda. For example, on 12th September 2012, the Ali Enterprises factory in Karachi Pakistan was solely producing jeans for German-based low-cost retailer KiK, least 254 workers killed in a fire at the factory because of inadequate safety procedures (BBC, 2012). The recent event of fire broke out in the manufacturing facility of Pakistani supplier that supply garments to German base store, led to pay \$5.15 million in compensation to the victims of one of the worst industrial accident (ECCHR, 2016).

Recent reviews (Mani *et al.*, 2015; Sutherland *et al.*, 2016) point out that most the existing research on the social sustainability aspects in manufacturing firms has been fragmented, has not been applicable across different organisations. However, from previous research, substantial evidence exists that social sustainability practices vary in different country and contextual. Similarly (Mani *et al.*, 2016) maintained that further study is needed especially from developing country the way in which the firm overcome social sustainability-related challenges. The present research has two objectives. First, to find out the interactive relationship between the influencing factors that hinder the implementation of social sustainability initiatives in export manufactures in Pakistan perspective. Second, To examine the prominence of each factor and devise a decision framework for revealing driving and dependence factors. However, with the present research study; we want to answer the following research questions:

-Which hierarchy structure of represent structure do firms choose for their social sustainability initiatives across operations?

-Which driving and dependence factors can be identified for implementation of social sustainability initiatives?

Hence, in our research setting, the ISM approach incorporates the view that several factors link to various hierarchy structure. Further, MICMAC technique is used to carry out the classification of factors based on driving and dependence power. These questions are highly relevant for the export manufacturers. The present study advances our understanding of the export manufacturers contingencies under which emerging countries firms drive their social sustainability performance.

2. Literature Review

2.1 Identification of related barriers

Previous studies have investigated various factors affecting the implementation of sustainability initiatives from a different perspective. There are some studies analyzing the barriers to implementing green supply chain management (Mathiyazhagan *et al.*, 2013) and impediments of social sustainability (Mani *et al.*, 2016). One major problem in designing a new process for the improvement of safety standards in production is due to a lack of knowledge and expertise. The process associated with the design of best practice. Business process related to sustainability are Business process can be defined as “an approach which firms adopted by altering or modifying their current established practices and rules” (Engardio *et al.*, 2007). In this study, supply chain development of new process is focused on the design of a new process for product design, recycling and purchasing process. Design of product and process can reduce waste, mitigate air, land, water pollution, and reduce health risks to human and other species. It also attempts to conserve energy and materials, Dispose of dangerous particles and lessen waste generated throughout the the production process and establish the environmental, economic and social objective of the sustainability (Deif, 2011).

There has been evidence, for example, in the Pakistan sports manufacturer of international brand in 2007, where the use of child labour was found; and the more recent tragedies with many workers killed in Pakistani factories supplying garments to the German-based buyer in 2012. Research conducted by (Sarkis *et al.*, 2011a) indicated that most important issue is the way in which firms view on the social dimensions of supplier selection; there is a need to integrate socially responsible dimensions, before selecting a supplier. Similarly (Zorzini *et al.*, 2015), the determined barriers needed to understand how socially responsible sourcing can be achieved in practices. This includes the need for more formal means of measuring sustainability; effective use of the code of conduct and sustainability standards. Lack of understanding among buyers and suppliers is the main barrier to sustainability. (Krause *et al.*, 2007). Research by (Awan, Usama and Kraslawski, 2017) in a developing country suggest, lack of cultural differences between buyer and supplier is a major barrier to social performance.

Buyer support and commitment is a fundamental requirement for a company in manufacturing environmental friendly. Buyer involvement in the supply chain sustainability activities is considered vital for a company for successful implementation of sustainability practices (Li *et al.*, 2017). The beliefs and behaviours of top management as they relate to sustainability have been the subject of significant Study.

Handfield, Melnyk, Calantone, & Curkovic, (2001) observed that organisation are either unable or not likely to continue pursuing sustainability goals without employee incentives.

Lack of involvement of operational staff in decision-making can act as a challenging barrier for re-design whole or part of the system. It is the obvious successful implementation of any quality management program is dependent on managerial decision making (Baumgartner, 2009; Ehrgott et al., 2011). The involvement of operational staff in the development and implementation of Green and Lean Six Sigma for superior sustainability performance (Cherrafi et al., 2017). We suggest that employee involvement has increased the likelihood of development and implementation of a new process to ensure that changes take place being integrated well into the existing organisation structure. In line with this, Klassen & Vereecke (2012) proposed an integrative framework that informs managers approach to social issues in the supply chain and links social management capabilities to performance improvements. Collaboration on sustainability initiative requires devoting specific resources on joint activities to address the sustainability issues (Vachon & Klassen, 2007). Further, Engert, Rauter, & Baumgartner(2016) found that employee capabilities are a key point to develop a sustainable organization

Companies internal environmental management activities fall within the domain of firm involves in reducing the environmental problems in the process (Zhu, Cordeiro and Sarkis, 2013). The literature shows that the key barrier that hampers implementation of social practices is Lack of implementation of standards procedures in workplace and uncertainty within their environment (Locke and Romis, 2007). In many developing countries non-availability trained human resource and resistance to adopting new practices may hinder the sustainable growth (Merli et al., 2015; Sarkis et al., 2011b).Moreover, Shi, Peng, Liu, & Zhong, (2008) summarizes the specific barriers to implement cleaner production includes the lack of trained professions and resistance by decision makers and training initiatives. (Awan, 2017) has reported in their studies that lack of training and educational programs directly affects the possibility of identifying the critical challenges faced by the firms and act as a major barrier in the implementation of socially supply chain practices.

Hong, Kwon, & Roh (2009) listed barriers to implementation of strategic green orientation in the supply chain of a manufacturing firm, that included a lack of commitment to exchange information and cooperation. Previous research identified the supplier as a key driver for environmental issues (Vachon and Klassen, 2006). Supplier development programs influence firm sustainability performance. One of the most important key barriers is how to ensure supplier continuity. Buyer support related to improving supplier performance on the social and environmental outcome is important to supply chain (Pagell and Wu, 2009). Buyers positively influence their suppliers to adopt particular social issues (working conditions, codes of conduct, process standards) throughout their supply chain (Sancha et al., 2015).

3. Search Methodology

3.1 Solution Methodology

This study analyses the barriers to implementation of social sustainability initiatives in manufacturer industries using ISM to prioritise the importance barrier according to their importance. ISM is an effective methods that represent a causal relationship between elements and assist the decision-making process by obtaining a hierarchy structure model. To establish a research gap, barriers to social sustainability were generated from the existing literature. Based on a recommendation by (Hayes and Krippendorff, 2007) the experts reviewed the initially developed factors. In the present research, literature review approach has been adopted and an appropriate for identifying important critical factors barriers for effective implementation of social sustainability practices and it is considered an integral part of theory development (Luthra et al., 2015). However, the identified factors barriers are presented in Table 1. Data collection in this study occurred in two phases. In the first phase, we conducted an interview and a group discussion with senior operations managers and academicians to understand how the selected barriers fit into local manufacturing context. 19 barriers were identified from the literature review. After having been subject to discussion with practitioners and academicians, a total 12 factor selected for the final questionnaire. For validation, academicians and practitioners were asked to rank the barriers in

accordance with the manufacturing industry and in developing country context. However, the identified factors barriers are presented in Table 1

Table 1. Identified barriers		
	Key Barrier	Authors
V1	Lack of knowledge on process development	(Deif, 2011), (Engardio et al., 2007)
V2	Lack of criteria for supplier selection	(Zorzini et al., 2015)
V3	Lack of understanding customers' needs	(Sancha et al., 2015)
V4	Lack of internal encouragement programs	(Hutchins and Sutherland, 2008; Pagell and Wu, 2009)
V5	Lack of involvement of operational staff in planning decisions	(Cherrafi et al., 2017),(Ehrgott et al., 2011)
V6	Lack of collaboration for implementation	(Klassen and Vereecke, 2012),(Engert et al., 2016)
V7	Lack of adaptions to new occupational health and safety policies	(Govindan et al., 2015)
V8	Lack of supportive policies and uncertainty from institutions	(Silvestre, 2015)
V9	Lack of internal environmental initiatives	(Zhu, Cordeiro and Sarkis, 2013)
V10	Lack of trained people and training initiatives	(Shi et al., 2008)
V11	Resistance to adopt new practices	(Shi et al., 2008),
V12	Lack of encouragement from International customers	(Ehrgott et al., 2011; Klassen and Vereecke, 2012)

3.2 Sample and Methods

The sample was selected from the chamber of commerce and industry database, a firm that is registered exporters. For this study, Pakistan companies were considered those with more than five years experience in exports related activities. We drew a random sample of 70 export manufacturers firm from the database of Chamber of commerce and Industry. The final sample size used for the modelling purpose was 41 firms. We collected data from senior operations and supply chain managers working in supply chain roles in four manufacturing firms in Pakistan. For analyzing barriers to implementing social sustainability initiatives, we chose a contextual relationship of a “leads to” type. We followed systematic procedure suggested by (Kannan et al., 2009). All key respondents were asked to evaluate the column statement to the row statement for each and every cell in order to choose a suitable value from the sing set (V,A,X,O). In accordance with their understanding the statement in the direction of the direct association between a pair of statements at the same time ,

3.3 ISM Methodology

Interpretive structure modelling (ISM) was first proposed by (Warfield, 1974) enable groups or individual to develop a map of the complex relations based on the user knowledge and practical experience to develop hierarchy level among the variable. This implies that the ISM approach intended to classify the contextual relationship broadly into what factors drive the other factors and on the other hands, what factors are dependent on others factors (Kumar and Sharma, 2015). This implies that this method categories factors into two schemes, i.e. independent variables (driving factors) and Dependent variables (dependence variables). So, they developed model may not provide a clear picture but could be a motivation for the companies to understand, how to best align the practices and which practices dependent on the other practices. ISM methodology depends on the judgement of individuals, forced to reassess perceived barriers and establish the linkages among the key factors based on their understanding and experience. The ISM methodology consists of the following steps (Kannan et al., 2009). These decision-making techniques heavily rely on the human judgments, and it involves inter and intra-attribute relationships. The results of the ISM methodology is shown in Table to 5.

	V12	V11	V10	V9	V8	V7	V6	V5	V4	V3	V2	V1
V1	V	V	V	V	A	V	V	A	A	V	V	
V2	V	A	V	O	A	V	V	A	A	V		
V3	A	A	A	A	A	X	X	A	A			

V4	V	V	V	V	O	V	V	O				
V5	V	V	V	V	O	V	V					
V6	A	A	A	A	A	X						
V7	A	A	A	A	A							
V8	V	V	V	V								
V9	V	A	V									
V10	O	A										
V11	V											

V1:Lack of knowledge on process development V2:Lack of criteria for supplier selection,V3: Lack of understanding customers’ needs and exchange of information,V4: Lack of support and encouragement programs,V5:Lack of involvement of operational staff in planning decisions ,V6:Lack of collaboration for implementation,V7: Lack of adaptations to new occupational health and safety policies,V8:Lack of supportive policies and uncertainty from institutions,V9:Lack of internal environmental initiatives.V10: Lack of trained people and training initiatives, V11: Resistance to adopt new practices, V12: Lack of encouragement from International buyers (V12)

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	Driving power
V1	1	1	1	0	0	1	1	0	1	1	0	1	8
V2	0	1	1	0	0	1	1	0	0	1	0	1	6
V3	0	0	1	0	0	1	1	0	0	0	0	0	3
V4	1	1	1	1	0	1	1	0	1	1	1	1	10
V5	1	1	1	0	1	1	1	0	1	1	1	1	10
V6	1*	0	1	0	0	1	1	0	0	0	0	0	4
V7	1*	0	1	0	0	1	1	0	0	0	0	0	4
V8	1	1	1	0	0	1	1	1	1	1	1	1	10
V9	1*	0	1	0	0	1	1	0	1	1	1*	1	8
V10	0	0	1	0	0	1	1	0	0	1	0	0	4
V11	0	1	1	0	0	1	1	0	1	1	1	1	8
V12	0	0	1	0	0	1	1	0	0	0	0	1	4
Dependency power	7	6	12	1	1	12	12	1	6	8	5	8	79

3.4 Solution Methodology Followed

The steps followed in the ISM approach are discussed below-

4.1- The barriers relevant to social sustainability in Pakistan manufacturing industries identified and established a contextual relationship between the variables.

The important barriers identified through a literature review and expert's opinion from the manufacturing sector. The identified barriers presented in Table 1.

4.2- Development of structural self-interaction matrix (SSIM), indicates a pairwise relationship between a variable of interest. The Structural Self-Interaction Matrix (SSIM) was developed based on the contextual relationship between the twelve identified barriers. We used four symbols to represent the relationship between the variables. (i and j), where, V represents, “i will help to achieve j”, A represents, “j will help to achieve i”, “X represents i and j will help to achieve each other”, and “O represents i and j are not related”. The initial reachability matrix (binary matrix) shown in Table 2.

4.3- A reachability matrix is developed from the SSIM matrix, and the matrix is checked for transitivity of contextual relationship. The development of Structural Self-Interaction Matrix (SSIM) is transformed into a reachability matrix by substituting the symbols V, A, X and O with binary numbers 1 and 0 as per the following rules.

- I. If symbol V is assigned in the SSIM matrix, the (i,j) value will be 1, and (j,i) value (entry) will become 0 in the reachability matrix.
- II. If symbol A is assigned in the SSIM matrix, the (i,j) value will be 0, and (j,i) value (entry) will become 1 in the reachability matrix.
- III. If symbol X is assigned in the SSIM matrix, the (i,j) value will be 1, and (j,i) value (entry) will become 1 in the reachability matrix.

IV. If symbol O is assigned in the SSIM matrix, the (i,j) value will be 0, and (j,i) vale (entry) will become 0 in the reachability matrix.

The final reachability matrix is shown in Table 3.

4.4 From the final reachability matrix (Table 4). The reachability matrix is portioned to get a better understanding of each barrier. The final reachability matrix is formed by incorporating transitive, and it marked with 1*. This is consists of barriers get affected by itself and other variables. The reachability set consists of the barriers that contain 1 in the row. Similarly, Antecedents set collection of barriers itself and other barriers that may influence it. The antecedent set consists of the barriers that contain 1 in the column. Based on this process, the level of partitioning of each level of barriers is obtained. The identified level 1 is placed at the top of the ISM model. If the reachability, antecedents set and intersection barriers are the same, it will not be considered in the level partitioning. The identified level in this process helps to achieve the final model (Kannan and Haq, 2007). Various level of partitioning is obtained in the 7th iteration and are shown in Table (4).

4.5 We converted digraph by replacing nodes with statements. A structural model developed from the final reachability matrix (Table 4). The summary of the obtained levels depicted in Table 5.If their relationship exists between i and j, and an arrow that points shows from i to j and the resulted graph is called an initial digraph (see Fig. 1).

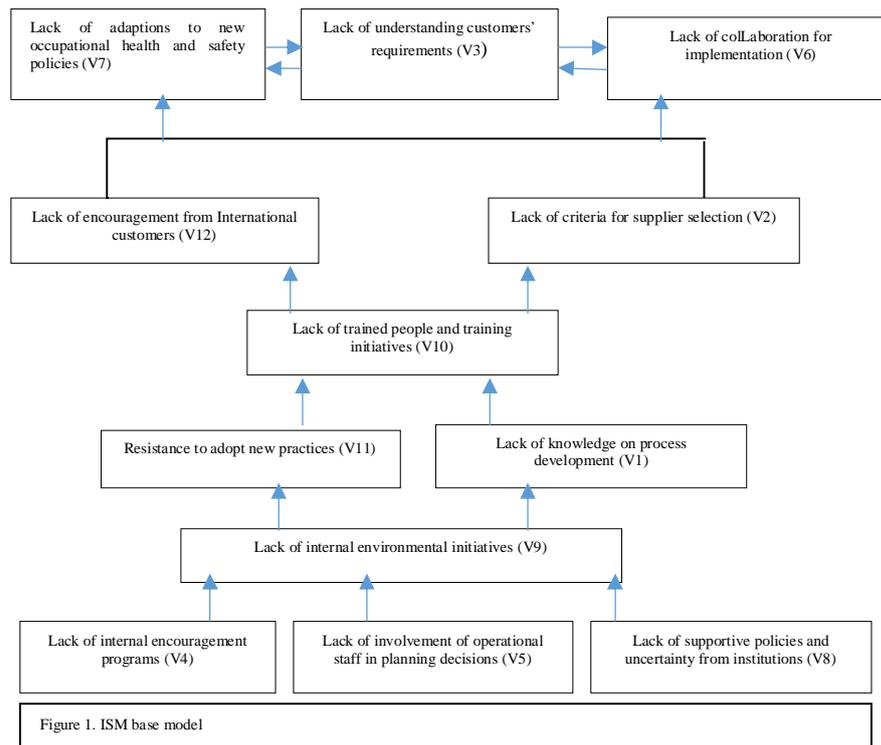
Barriers	Reachability	Antecedent	Intersection	Level
V1	V1,V2,V3,V6,V7,V9,V10,V12	V1,V4,V5,V6,V7,V8,V9	V1,V9	IV
V2	V2,V3,V6,V7,V10,V12	V1,V2,V4,V5,V8,V11	V2	III
V3	V1,V2,V3, V6,V7,	V1,V2,V3,V5,V6,V7,V9,V10,V11,V12	V1,V2,V3, V6,V7,	I
V4	V1,V2,V3,V4,V6,V7,V9,V10,V11,V12	V4	V4	VI
V5	V1,V2,V3,V5,V6,V7,V9,V10,V11,V12	V5	V5	VI
V6	V1,V3, V6,V7,	V1,V2,V3,V5,V6,V7,V9,V10,V11,V12	V1,V3, V6,V7,	I
V7	V1,V3, V6,V7,	V1,V2,V3,V5,V6,V7,V9,V10,V11,V12	V1,V3, V6,V7,	I
V8	V1,V2,V3,V6,V7,V8V,9,V10,V11,V12	V8	V8	VI
V9	V1,V3,V6,V7,V9,V10,V11,V12	V1,V4,V5,V8,V9,V11	V9	V
V10	V3,V6,V7,V10	V1,V2,V4,V5,V8,9V,V10,V11	V10	II
V11	V2,V3,V6,V7,V9,V10, V11,V12	V4,V5,V8,V9, V11	V9,V11	IV
V12	V3,V6,V7,V12	V1,V2,V4,V5,V8,V9,V11,V12	V12	II

Barriers	Level	Barriers
1	I	Lack of understanding customers' needs (V3)
		Lack of collaboration for implementation (V6)
		Lack of adaptations to new occupational health and safety policies (V7)
2	II	Lack of trained people and training initiatives (V10)
		Lack of encouragement from the International customer (V12)
3	III	Lack of criteria for supplier selection (V2)
4	IV	Lack of knowledge on process development (V1)
		Resistance to adopt new practices (V11)
5	V	Lack of internal environmental initiatives (V9)
5	VI	Lack of Internal encouragement programs (V4)
		Lack of involvement of operational staff in planning decisions (V5)
		Lack of supportive policies and uncertainty from institutions (V8)

3.5 MICMAC analysis

Matrices' Impacts Croises Multiplication Applique' and Classement (MICMAC) analysis (Duperrin et al., 1973) are used to identify the relationship between dependence power and their driving power. The identified barriers classified into four sectors, which is presented in Table 6. The purpose of MICMAC analysis is to draw a graph to categorized barriers that drive implementation of social sustainability practices in various categories (Kannan & Haq, 2007). The MIMAC analysis for the barriers to the implementation of social sustainability initiatives in Pakistan manufacturing industries is shown in Fig.2.

Sectors	Explanations	Resulted Barriers
Autonomous	Weak driving power as well as a weak dependence power. These neither influenced by the system nor they influence the system. In the present case, there is no such critical factor	V2, V11
Dependent	Weak driving power but a strong dependence power. Dependent factors are the ones that are driven by independent variables.	V3, V6, V7, V12
Linkage	Strong driving as well as dependence power. These drivers are unstable, and any change happens to them affect other drivers and themselves.	V1, V10
Driving or independent	Strong driving power but weak dependence power. These factors are considered as 'key factors' which are also considered as a cause of other factors in the complex problem.	V4, V5, V8, V9



Low Dependence Power	12			V3	V6, V7								
	11												
	10												
	9			Dependent					Linkages				
	8				V12				V10				

7								V1					
6						V2		V9					
5					V11								
4													
3		Autonomous						Independent					
2													
1										V4, V5, V8			
0	1	2	3	4	5	6	7	8	9	10	11	12	
	Low						Driving Power						High

Autonomous-I. This category of barriers has less driving as well as dependence power. Lack of criteria for supplier selection’ and ‘resistance to adopting new practices’ falling in autonomous cluster I, as shown in Fig. 2.

Driving-II. The barriers to high driving power and less dependence power are shown in sector 2 in the MICMAC diagram. These barriers are ‘lack of support and encouragement programs from institutions; lack of involvement of operational staff in planning decision; lack of supportive policies and uncertainty from the institution and lack of internal environmental initiatives. These indicate that the manufacturing firms should identify all the sources of barriers and try to address appropriately. Manufacturing firms should give priorities while addressing these barriers to achieve sustainable social performance in their operations.

Linkages-III. The barriers to high driving power and high dependence power are shown in sector 3 in the MICMAC diagram. These barriers are lacking knowledge on resource management, and lack of trained people and training initiatives are making a connection between the independent and dependent cluster and coming in the middle of the ISM based hierarchical model (see Fig.2). This shows that if the institution provides support to the first on resource management will affect understanding the customer needs, in turn, the firm will be able to adapt to the new occupational health and safety issues. The linkage barriers are at the intermedium level in the hierarchy structure. The finding reveals that this two category of barriers act as mediation between independent and dependent barriers. If these barriers are unstable or any change happens to them, it will affect the other drivers.

Dependent-IV. Further analysis from Fig.2 shows that lack of understanding customer needs and information exchange; lack of managerial capabilities; lack of adaptation to new occupational health and safety practices’ and lack of encouragement from international customers falls in the independent category. These barriers are driven by independent variables in which they have low driving power and high dependence power. This shows that resistance to adapting to new manufacturing practices is essential factors, which can drive the support from the international customers. The international customers might have the image that the developing countries do not implement advanced manufacturing and production process. These barriers are usually at the bottom of the hierarchy structure.

4. Discussion and Research Implications

Social sustainability practices have become a topic of interest to many emerging countries. Social sustainability practices are an important pathway for achieving sustainable development goals. However, these practices are not well developed, especially in the developing countries. There are various factors affecting the development of this strategic mechanism in export-oriented manufacturing firms, and this study has found 12 representative factors. As shown by our analysis, we find that social sustainability can be achieved by combining a wide set of internal sustainability initiatives by empowering the employees and their participation could be beneficial to the management but also ultimate the fulfilment of social sustainability goals for the company. We especially found that dependence, understanding customer requirements, collaboration and adaptation have a high influence overall implementation of social sustainability practices. Our results indicate that export-manufacturing firms are better off in implementing the social sustainability practices when: (1) policies and tools for continuous improvement

are available. (2) Employees involvement in continuous process improvement and increase their skills. (3) Institutions coach and teach the industrial practitioners instead of simply commanding, controlling, and (4) employee granting autonomy and geared toward the self- regulation, implementation and determination of sustainability working standards.

This study contributes to the sustainability literature in several ways. The contribution of the study is to provide a better understanding of the extent to which key factors which affect the implementation of social sustainability practices and conditions in which this occurs (see fig.1.). First, the findings highlights that ISM approach is adequate in explaining and identification of barriers of export manufacturers from emerging country, and findings provided evidence of how these factors exercised different levels of independent influence on implementation. This study extends this line of research to explore how different types of driving factors might further facilitate the implementation of social sustainability practices. Second, the paper contributes to the stream of research on impediments to sustainable development in emerging country. There is growing recognition of resources constraint issues in emerging market manufacturing firm's to implement and initiate sustainability-related practices. This study has some limitations, study context is developing country in South Asian, and second, the sample contains only exports firms. Therefore, future research studies may apply the longitudinal approach to investigate changes in the sustainability practices have been implemented

5. Implications of Findings

The following managerial implications may be derived from our findings, especially for managers running an export-manufacturing firm in Pakistan and other economies with a similar level of development.

- ✓ Foreign buyers must collaborate with suppliers and focus on supplier development on social issues. This interaction results in understanding the context regarding whom they have to consults and can learn more about how they have to carry out operations.
- ✓ The government should involve with exporters in framing policies and should take steps in the effective implementation of its laws.
- ✓ Providing access to education to workers family, which often do not have enough income to support education, not the ability to raise the needed long-term financial resources, is a major problem of child labour issues. Thus, it is pre-requisite to allocate a significant amount of allocation of funds on social spending, which returns in the form of greater school enrollment, reduction in child labour.
- ✓ Manufacturing firms from developing countries need buyer cooperations to support social sustainability. Thus, it is pre-requisite that buyers must closely work with the human resource department.

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