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ANALYZING THE CRITICAL SUCCESS FACTORS TO IMPLEMENT GREEN SUPPLY CHAIN MANAGEMENT IN LEATHER MANUFACTURING INDUSTRY IN INDIA USING GREY- DEMATEL METHOD

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To deal with raising social issues concerned with increasing environmental pollution, many Indian leather industries are leaving their traditional supply chain methodology and carrying out GSCM tradition to ensure durability into their business. The prime motive of this study is to quest out the necessary CSFs connected with execution of GSCM in Indian leather industries. Through DEMATEL -Decision Making Trial and Evaluation Laboratory tool, a Framework was developed to evaluate the impressive relations between identified factors. A causal diagram has been plotted to show the mutual relation between the recognized factors. Through a case study of Indian leather industry, situated in northern part was done to point out the real-life application of the suggested GREY-DEMATEL tool. End results shows that necessary CSFs in Green Supply Chain Management execution are global competition factors, to adopt new technology & processes, customer requirement, IT use with Green Technology, government regulations and standards, technical expertise, sustainability and environment agencies certification. Research conclusions also reveal that global completion is of topmost in GSCM implementation. At the end through conclusions and implications for managers are shown so as to carry out GSCM practices more effectively in Indian leather industries. This study offers an ideological model which could onward be tested by using any empirical data.

Key words: Grey-Dematel, Green supply chain management, leather processing companies, critical success factors North India.

1. INTRODUCTION

In today's competitive context among Indian leather industries, the result of any Indian company is not merely rooted on making economic profits but also on environmental performance; eventually, the execution of GSCM is just not only due to the consequence of modified company's competitive place but also important in having an increased environmental consideration among various industries. Newer and newer investigations on Green Supply Chain Management have bought fast concern throughout the globe in past few years as a consequence the same has lately grown in leather industries of developing countries like India.

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In Indian leather industry, GSCM is yet in its evolving stages since it hasn't been much time that leather industries are executing these practices. GSCM bestows the resource customization and is viewed as an answer to resolve environmental issues by practicing this new GSCM sequence inside their entire supply chain. Implementation and performance evaluation of GSCM is relatively essential for any leather company so as to enhance their environmental image (Hansmann and Kroger, 2001; Sheu et al., 2005 ;)In leather industries of India many CEOs are focusing to a great deal on the environmental damage occurred. This paper examines CSFs from literature survey by taking an example from an Indian leather processing industry for GSCM practice.

Sarkis and Bai (2013) emphasized that using Grey -DEMATEL has its own benefits over Fuzzy DEMATEL in not only dealing with the uncertain decisions but also handling with indistinctness in distinguishing and categorizing factors into effect and cause. GSCM introduction was the outcome of considering the unassertive effects of SCM-supply chain management exercise on the environment .Number of reasons has been cited by researchers that suggested industries to accept and execute GSCM practices. Illustration of these causes various

social stresses from regulating organizations to safeguard our environment (Mumtaz et al., 2018) also in enhancing the prestige of any industry (Caelian and Longoni, 2018). Thus, for successful execution of GSCM, organizations need accurate expert knowledge with comprehensive research work. Knowning GSCM also needs information of suppliers, criterion and regulations, competition, globalization, and other related areas (Gandhi et al. 2016; Kannan et al. 2014 Jabbour et al.2009;). As a new segment GSCM is a rising domain of research and study in underdeveloped and developing countries like India (Vijayvargy, Agarwal and Thakkar, 2017). Islam et al. (2017) did an appropriate study recently on the execution of GSCM practice in Bangladeshi leather industry.

Use of CSSFs in GSCM execution has been examined in several industries and in many countries like food retailers in Croatia (Petljak et al., 2018), manufacturing companies in India (Mumtaz et al., 2018), West African cashew factory (Agyemang et al., 2018), automobile industry in China (Dou et al., 2018), electrical & electronic industries in Taiwan-an east Asian Country (Hu and Hsu, 2010) and construction industry in India (Mathiyazhagan et al., 2018).Few studies with the CSSF in GSCM as reference were done to examine GSCM execution using different approach in many countries of the globe (Wang et al., 2018).

Objectives of the research-

(i) To identify different CSSFs so as to practice GSCM in their Firms using Grey-Dematel technique..

(ii) To Find out relevant association among different identified CSSFs. _

(iii) To suggest a stepwise structured model of CSSFs for leather industries to implement GSCM in their SCM practice.

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For this data were compiled from leather industries and through literature survey to find and identify the success factors norms to enhance their performance by providing a new perspective of decision-making for leather industries to practice GSCM.

In continuation, the study was systemized as Follows: Review of literature (Section 02) provides a detailed literature review on GSCM with the proposed Factors identified for successful GSCM execution. In section 03 the methodological aspect is mentioned; Section 04 explains the research Framework in which step for applying Grey-DEMATEL in described. Section 05 talks out the key results obtained; whereas section 06 discusses their implications of the present study and at last in section 07 intimates about the conclusion and offers scope for future research work.

2. LITERATURE REVIEW

2.1 GSCM definition

Developing countries like India is depicted by increase in industrialization that is prime reason of environmental degradation in Indian leather Firms. To check the serious growth in pollution greening awareness has begun targeting to minimize the ill impact of environmental pollution. Therefore, GSCM performs a crucial task in impacting all environment influence on any leather industry. There have been numerous research which have applied DEMATEL approach for seeing interconnection among different identified factors (Shen et al., 2015; Tsai et al. 2016,).Some researchers have applied it with MCDM approach as AHP (Azadeh et al. 2015; Najmi and Makui, 2012;, Govindan et al. 2016), VIKOR (Ranjan et al., 2015), DEA (Shasfiee et al. 2014; Azadeh et al. 2015) with some other techniques like ISM, TOPSIS, etc. Results obtained by DEMATEL approach helps in making a diagraph which categorizes identified Factors into effect and cause. The present study thereby uses Grey DEMATEL approach which has already been used for sensing complex interlinking among different variables that is mostly having slight interdependence on one another.

As per Srivastava (2007) definition GSCM is sum total of environmental issues into SCM. Tiwari and Jayant (2018), proposed a hypothetical structure for influential GSCM execution for any company to take active role in decreasing environmental warnings. On the base of these terms, greening its SCM will help in improving the performance of any Firm or companies brand image.

2.2 Selecting critical success factors for GSCM implementation out of the literature

The theory of Greening the supply chain management is comparatively a new concern, that is receiving notability among producers and suppliers to enhance any company's environmental layout (Madaan and Mangla, 2015; Chang et al., 2013) Critical Success Factors have been defined as key factors that ascertain the success of any organizations endeavor in the matter of impressive and persistence supervision of these elements (Prasad et al., 2018). Therefore to recognize these critical success factors, a preview of various literature was done Critical success factors can be classified into two prime groups: institutional external and organizational internal factors (Iraldo

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and Testa , 2010). Internal Factors are stated as organizations-founded exercise with the reference of attaining environmental goals, and external factors are stated as cooperation with efforts of companies' stakeholders that will be responsible in increasing the environmental showcase (Zhang et al., 2018). Mohanty and Prakash (2013) experimentally examined the gscm exercise in Medium, Micro, and, Small ventures in India and indicated that Indian industries are facing serious stress from external stake holders to opt green supply chain management practices.

Table 1 -CSSF identified For Research

CSSF Code	Factor Name
SF1	Green infrastructure/policies/practices
SF2	Government regulations and standards
SF3	Sustainability
SF4	Technical expertise
SF5	Top management commitment
SF6	Collaboration with suppliers
SF7	Global competition Factors
SF8	Reverse Logistics
SF9	IT use with Green Technology
SF10	Employee involvement
SF11	Customer requirement
SF12	Development of skilled and qualified manpower
SF13	Adoption of New Technology & Processes
SF14	Waste disposal norm
SF15	Environmental agencies certification
SF16	Creating an environmental risk management system

3. Methodology

The current study targets in examining CSSFs for successful execution of GSCM for a leather industry by the use of Grey-DEMATEL approach. This technique has been earlier used by many investigators to see the interrelinking between different criteria in used in evaluating problems in MCDM. Also DEMATEL techniques help in analyzing these Factors by categorizing them into effect and cause batch by showing their interrelationship through a practicable relationship Figure.

Questionnaire development

The selection of SF success Factor for implementing in GSCM network in Indian leather industry were selected on behalf of literature survey .From which 016 Success Factors were identified. A set of questions was framed on account of CSFs that were recognized from literature review; those selected Factors for evaluation are mentioned in Table 1. Toke et al. (2012) suggested in his study for identifying critical factors with respect to gscm for Indian automotive industry. He divided GSCM practices into 15 factors ahead splited it into 113 sub sub factors. The purpose of their

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research was to grade the important elements in practicing gscm. By their results they proposed that cooperation from top level management is extremely crucial element for the success of executing GSCM. Muduli et al. (2013) mentioned that success of GSCM in mining industry has affected human habit and in their research such variables/factors were pointed out and prioritized. By benefits of GSCM practice, industries can chose from a broad variation of suppliers by removing the environmental influence of SCM activities like this, new chance that helps contrary the competition and also together with new worth into the trade must be examined (Hansmann & Kroger, 2001). The outcomes of Luthra et al. (2015) differed from Luthra et al. (2015), Muduli et al. (2013) & Toke et al. (2012), created a group of factors named as "critical success factors" needed for successful implementation of gscm.He used Interpretive Structural Modeling (ISM) in prioritizing these critical success factors. In their concluding remark they pointed that "Lack of Natural Resources" is one the extreme important critical success factors.

03 critical success factors were recognized by Hsu and Hu (2010) that were organizational involvement, life cycle management & product recycling. Local government provision and environmental law is an important factors influencing use of GSCM acceptance in any country (Hoskin, 2011). CSSFs is an important element needed for confirming the achievement of any organization / event to happen and essential for any organization to obtain their aim, which are needed to be recognized ,evaluated and concentrate (Haleem et al., 2012).GSCM practices for sustaining business in the world market. The footwear factories want to decrease environmental effect together by fulfilling buyer needs to keep the global contest. Many industries wants to deflate waste, maximize gain, green the existing supply chain, and try to carry out reverse Flow of materials. In spite of, the factories has been dealing with some problems in executing GSCM to their conventional supply chain network. Investigating the Critical Success Factors can help the industry in implementing green exercises in their production units to obtain sustainability A number of Critical Success Factors, such as international environment agreements, economic concerns, domestic legislations, stakeholder pressures and social responsibility, have been advised in the literature making good knowing of the inspirational factors that lead organizations to execute green activities (Melnyk 1998; Beamon 1999).

4. Research Framework

Since use of normal DEMATEL is incompetent of dealing with such unevenness and uncertainties, the current study is an approach to by using Grey DEMATEL in and Indian leather industry. This Grey theory was 1st introduced by Deng in the year 1982 and has been comprehensively used with different MCDM techniques & has been excessively acknowledged in the literature. By using Grey DEMATEL which already had been used by different researchers for understanding complicated interlinking among different variables which are commonly having some interlinking on one another. All the steps for applying Grey-DEMATEL can be understood as follows:

Step 1: By framing an initial matrix M, by asking all the experts to fill lower triangular matrix estimating the interlinking among all the feasible pairs of qualifiers. Selected experts are asked to

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make their entries on linguistic scale (Table 2). After this individual linguistic table is then changed into their assigned grey scale & average grey scale value is evaluated which is mentioned to initial matrix M.

Table 2 Linguistic level/scale used in assigning grey scale & crisp values

Applied Term	Abbreviation	Value of Fuzzy Scale	Crisp values
Not Important	NIM	(0, 0, 1)	1
Slightly Important	SIM	(0, .2, .4)	2
Fairly Important	SFIM	(.2, .4, .6)	3
Important	IM	(.4, .6, .8)	4
Very Important	VIP	(.6, .8, 1.0)	5

Step 2: Likewise make a Grey matrix through the initial matrix by using upper and lower range of data (Rajesh et al., 2017).
Step 3: By using modified Fuzzy suitability manner - CSFCS (changing Fuzzy data in crisp scores) in order to change the average grey matrix in crisp numbers (Xia, Zhu, and Govindan, 2015).
Step 4: To make a normalized direct relation matrix (M) –this is done by multiplying the matrix as mentioned by a selected multiplier that is having min value of inverse of maximum of sum columns and row. After that calculation of total relation matrix (T)is done by multiplying M with the inverse of difference of M and I, here I is considered as an identity matrix.
Step 5: To find out addition of all the rows "R"and all the columns "C".
Step 6: To make a casual diagram by finding out R+C and R-C. Here R+C are termed as "prominence" which denotes the degree of importance i.e. total effect given/ received by any mentioned factor whereas R-C is termed as "relation" which shows the total effect that criterion i contributes to the framework. If the findings value of Ri
− Ci comes out positive then it comes under cause factor whereas if Ri − Ci comes out negative then it comes under effect factor.

4.1 Application of the Introduced Model: Indian leather Case Study

Tannery Industry X is one of the major leading Buffalo leather tanneries specialized in the manufacturing of good quality leather for safety & Lifestyle Footwear, Automotive and Furniture furnishing, Belts, Bags, Sporting Goods and cavalier products in North India. This company has one of the globes most extensive R&D Facilities. Established in 1953, Tannery Industry X is one the oldest tannery operating in Northern India and has a high name in the world leather markets also has created an important place for itself in world for practicing supply chain in their leather and allied products.
Presently, this Tannery Industry X is OHSAS 18001:2007 and ISO 14001:2004, ISO 9001:2008, certified. This case industry schemes to improve its role towards environmental performance. To visualize this problem, a decision making group of 05 experts was Formed. 01 agent from various fields; quality, planning, production, administration, and environment of this Tannery Industry X

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were added in focus group. These experts were having excellent skills in making decision with more than 10 years industry experience. After conversation with these experts, the suggested DEMATEL method was applied to perceive the question statement also the computational process is confined as Follows: As per the procedural steps mentioned in the section 03, as 1st step, the objective of this study was set also, a decision making group to visualize the problem statement is formed as stated above. Through literature survey, 16 probable critical important factors in successful Green Supply chain management implementation were identified. Accordingly discussion with decision making group, these critical factors was finalized as the Green Supply chain management evaluation success factors criterion (see Table 1).After that the experts in the decision making group were communicated personally and their answers on evaluating these critical Factors were recorded under Grey –Dematel method.

5. Results and discussions

As shown in Table 4, the critical success factors are ordered in matter of the level of importance on account of their concerned (R + C) score. Global competition Factor (SF7) Factor with (R + C) value of 9.279 has got

upmost level of importance along with SF13 > SF11 > SF9 > SF2 > SF4 > SF3 > SF15 > SF16 > SF8 > SF14
> SF5 > SF6 > SF12 > SF10 > SF1.

Table 3—Cause and Effect Parameter using Grey –Dematel Method

CSSF	R	C	R+C	R-C	Category
SF1	3.314	4.004	7.318	-.690	Cat.of Effect
SF2	5.223	3.852	9.075	1.371	Cat. of Cause
SF3	3.753	4.096	7.848	-.343	Cat.of Effect
SF4	4.527	4.467	8.994	.060	Cat. of Cause
SF5	4.803	3.640	8.442	1.163	Cat. of Cause
SF6	3.689	4.588	8.277	**-.899**	Cat.of Effect
SF7	4.912	4.358	**9.270**	.554	Cat. of Cause
SF8	4.134	4.481	8.615	-.347	Cat.of Effect
SF9	4.621	4.485	9.105	.136	Cat. of Cause
SF10	3.390	4.056	7.446	-.667	Cat.of Effect

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SF11	4.175	5.016	9.190	-.841	Cat.of Effect
SF12	4.256	3.776	8.032	.480	Cat. of Cause
SF13	4.486	4.716	9.202	-.230	Cat.of Effect
SF14	4.389	4.079	8.469	.310	Cat. of Cause
SF15	4.474	4.188	8.662	.285	Cat. of Cause
SF16	3.642	3.986	7.628	-.344	Cat.of Effect

Figure 1:---Causal diaphragm

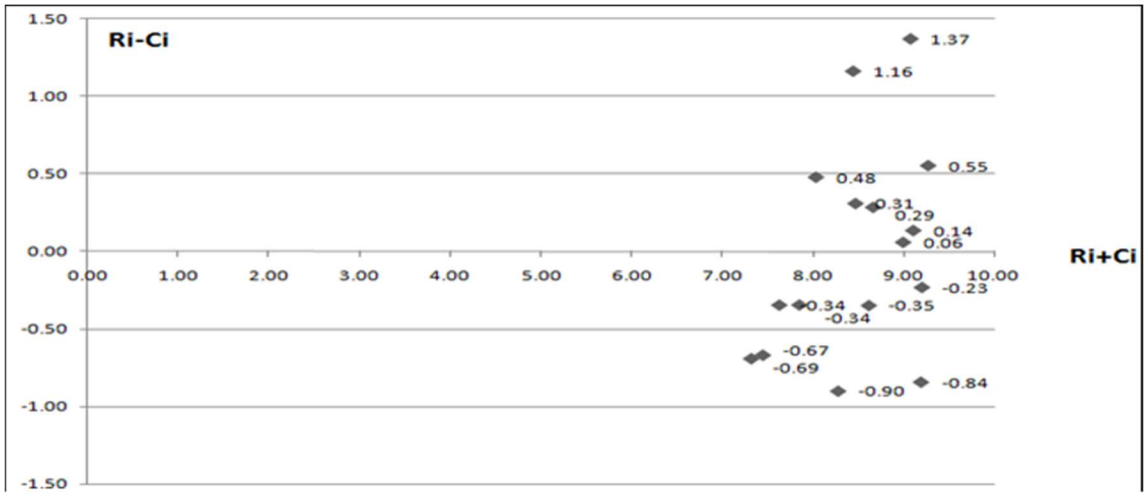
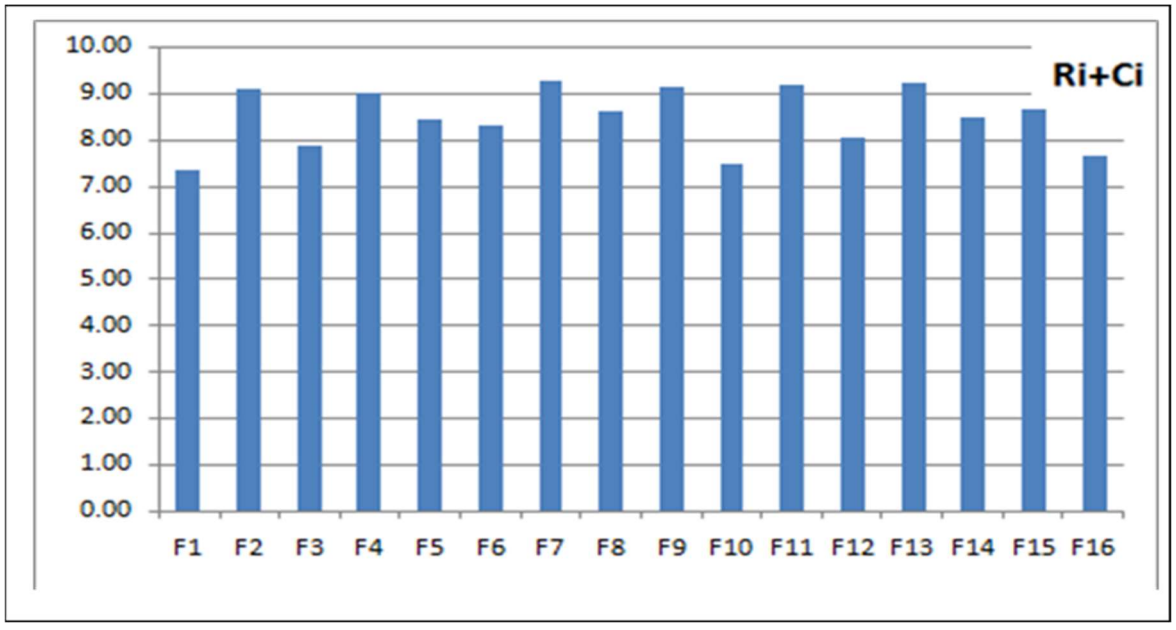


Figure 2 –Illustration of Success Factors based upon Output Data



In continuation to this, if we consider the score of their concerned (R - C) value, the assesment factors viz Government Regulations & Standards (SF1), Technical expertise (SF4), Top

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management commitment (SF5), Global competition Factors (SF7), IT use with green technology (SF9), Development of skilled and qualified manpower (SF12), Waste disposal norm (SF14), Environmental agencies certification (SF15) are splited into cause group category. Also the factors like Green infrastructure/policies/practices(SF1), Sustainability(SF3), Collaboration with suppliers(SF6), Reverse Logistics(SF8), Employee involvement (SF10), Customer requirement (SF11), Adoption of New Processes &Technology (SF13), Creating an environmental risk management system (SF16) comes under effect group.

6. Implications of the current study

Findings of current study shows many theoretical role in present literature on GSCM implementation in leather industry,

as follows:

1. To identify the most necessary CSFs for execution of GSCM in leather industry by doing an elaborative literature survey also through merging experts' opinion received.
2. By focusing on high priority factors for GSCM practicing, in descending order of their importance, like- global competition factor adoption of new technology & processes, and customer requirement, etc.
3. By using GREY-DEMATEL-technique to choose the CSFs and derive cause–effect connection between them based on industrial expert views.
4. To build a list and to discuss with the HRs of Case Company X selected, for the advancement of GSCM by pointing out the most serious CSFs that influence each other.

When any business starts to add GSCM into their SCM system, different firms will also get inspiration to adopt GSCM framework to ascertain that they're in queue to do so. This is because entire policymaking mainly relies on higher authority.

Table 4: Ranking of supplier selection criteria.

Criteria	R+C	Rank A	R-C	Rank B
Green infrastructure/policies/practices	7.318	16	-.690	14
Government regulations and standards	9.075	5	1.371	1
Sustainability	7.848	7	-.343	10
Technical expertise	8.994	6	.060	8
Top management commitment	8.442	12	1.163	2
Collaboration with suppliers	8.277	13	**-.899**	16
Global competition Factors	**9.270**	1	.554	3
Reverse Logistics	8.615	10	-.347	12
IT use with Green Technology	9.105	4	.136	7
Employee involvement	7.446	15	-.667	13
Customer requirement	9.190	3	-.841	15
Development of qualified and skilled manpower	8.032	14	.480	4
Adoption of New Technology & Processes	9.202	2	-.230	9
Waste disposal norm	8.469	11	.310	5

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Environmental agencies certification	8.662	8	.285	6
Creating an environmental risk management system	7.628	9	-.344	11

Ranking (A)*: the criteria rank based on prominence. Ranking (b)* the criteria rank based on influence.

7. Conclusions, and Future work scope

In today's world of industrialization, Indian leather industry is also trying to cope its pace by greening its supply chain practice. Here in this research paper Grey DEMATEL technique was selected to categorize the CSFs for leather industries with respect to India. At current, both developing and developed countries are focusing with a great thrust on the acceptance of GSCM practices. Moreover, for developing nations like India it is now becoming particularly essential to execute GSCM practices to minimize environmental influence and to maximize economic benefits. Although, the successful implementation of GSCM in leather industry is hard because of the presence of several critical factors. One of the major advantages is that GSCM can shorten the ill environmental effects of industrial activities without sacrificing, quality, cost, paradigm shift, performance, and trustworthiness. GSCM not only optimize overall economic gain but also reduces ecological damage. In this paper after obtaining experts inputs, a total of sixteen CSFs for implementing GSCM in leather industry were selected. During our findings we got that 08 factors out of 16 were causal group whereas 08 out of remaining 16 were founded to be under affect groups. The outcome of this research reveals that the main factors are global competition factors, to adopt new technology & processes, customer requirement, IT use with Green Technology, government regulations and standards, technical expertise, sustainability and environment agencies certification The limitations of this GREY-DEMATEL technique should not be neglected. The future findings can be done to understand the structure binding relations between various GSCM critical success factors by using ANP, ISM and TOPSIS with GREY-DEMATEL. Conflict of Interest. The authors don't have any conflicts of interest. ACKNOWLEDGEMENT

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Annexure A

Table T.1 Average initial direct relation matrix.

Success Factors	SF 01	SF 02	SF 03	SF 04	S E05	SF 06	SF 07	SF 08	SF 09	SF 10	SF 011	SF 012	SF 013	SF 014	SF 015	SF 016
SF1	**0**	**.2**	**.33**	**.6**	**.2**	**.33**	**.4**	**.2**	**.6**	**.33**	**.8**	**.2**	**.4**	**.33**	**.2**	**.4**
SF2	**.4**	**0**	**.4**	**.4**	**.8**	**.8**	**.8**	**.4**	**.8**	**.6**	**.6**	**.4**	**.6**	**.4**	**.8**	**.6**
SF3	**.6**	**.4**	**0**	**.33**	**.2**	**.6**	**.2**	**.33**	**.8**	**.4**	**.2**	**.33**	**.8**	**.6**	**.2**	**.33**
SF4	**.2**	**.6**	**.6**	**0**	**.4**	**.4**	**.6**	**.8**	**.4**	**.8**	**.8**	**.6**	**.4**	**.2**	**.6**	**.2**
SF5	**.33**	**.8**	**.4**	**.8**	**0**	**.33**	**.4**	**.6**	**.6**	**.33**	**.4**	**.2**	**.8**	**.8**	**.4**	**.8**
SF6	**.4**	**.4**	**.33**	**.4**	**.33**	**0**	**.33**	**.4**	**.33**	**.4**	**.6**	**.8**	**.33**	**.4**	**.33**	**.4**
SF7	**.6**	**.2**	**.8**	**.8**	**.4**	**.6**	**0**	**.6**	**.4**	**.6**	**.8**	**.4**	**.6**	**.6**	**.8**	**.2**

SF8	**.33**	**.6**	**.33**	**.6**	**.2**	**.8**	**.6**	**0**	**.8**	**.33**	**.33**	**.2**	**.4**	**.2**	**.4**	**.8**
SF9	**.8**	**.8**	**.4**	**.4**	**.33**	**.4**	**.4**	**.33**	**0**	**.4**	**.4**	**.6**	**.8**	**.8**	**.33**	**.6**
SF10	**.4**	**.4**	**.2**	**.2**	**.4**	**.6**	**.2**	**.4**	**.4**	**0**	**.6**	**.2**	**.33**	**.4**	**.6**	**.33**
SF11	**.2**	**.33**	**.6**	**.33**	**.6**	**.33**	**.8**	**.8**	**.2**	**.33**	**0**	**.4**	**.6**	**.2**	**.8**	**.4**
SF12	**.33**	**.6**	**.4**	**.6**	**.2**	**.4**	**.4**	**.2**	**.6**	**.8**	**.8**	**0**	**.4**	**.8**	**.4**	**.2**
SF13	**.6**	**.4**	**.8**	**.4**	**.4**	**.8**	**.6**	**.6**	**.4**	**.2**	**.4**	**.33**	**0**	**.6**	**.33**	**.8**
SF14	**.4**	**.2**	**.6**	**.33**	**.8**	**.6**	**.33**	**.4**	**.33**	**.4**	**.6**	**.8**	**.8**	**0**	**.6**	**.2**
SF15	**.33**	**.33**	**.2**	**.8**	**.6**	**.4**	**.8**	**.8**	**.6**	**.6**	**.8**	**.2**	**.4**	**.2**	**0**	**.4**
SF16	**.8**	**.2**	**.4**	**.6**	**.2**	**.33**	**.4**	**.6**	**.4**	**.33**	**.4**	**.6**	**.33**	**.4**	**.2**	**0**

Table T.2 Normalized initial direct-relation matrix.

Success Factors	SF 01	SF 02	SF 03	SF 04	S F05	SF 06	SF 07	SF 08	SF 09	SF 10	SF 011	SF 012	SF 013	SF 014	SF 015	SF 016
SF1	.000	.023	.038	.068	.023	.038	.045	.023	.068	.038	.091	.023	.045	.038	.023	.045
SF2	.045	.000	.045	.045	.091	.091	.091	.045	.091	.068	.068	.045	.068	.045	.091	.068
SF3	.068	.045	.000	.038	.023	.068	.023	.038	.091	.045	.023	.038	.091	.068	.023	.038
SF4	.023	.068	.068	.000	.045	.045	.068	.091	.045	.091	.091	.068	.045	.023	.068	.023
SF5	.038	.091	.045	.091	.000	.038	.045	.068	.068	.038	.045	.023	.091	.091	.045	.091
SF6	.045	.045	.038	.045	.038	.000	.038	.045	.038	.045	.068	.091	.038	.045	.038	.045
SF7	.068	.023	.091	.091	.045	.068	.000	.068	.045	.068	.091	.045	.068	.068	.091	.023
SF8	.038	.068	.038	.068	.023	.091	.068	.000	.091	.038	.038	.023	.045	.023	.045	.091
SF9	.091	.091	.045	.045	.038	.045	.045	.038	.000	.045	.045	.068	.091	.091	.038	.068
SF10	.045	.045	.023	.023	.045	.068	.023	.045	.045	.000	.068	.023	.038	.045	.068	.038
SF11	.023	.038	.068	.038	.068	.038	.091	.091	.023	.038	.000	.045	.068	.023	.091	.045
SF12	.038	.068	.045	.068	.023	.045	.045	.023	.068	.091	.091	.000	.045	.091	.045	.023
SF13	.068	.045	.091	.045	.045	.091	.068	.068	.045	.023	.045	.038	.000	.068	.038	.091
SF14	.045	.023	.068	.038	.091	.068	.038	.045	.038	.045	.068	.091	.091	.000	.068	.023
SF15	.038	.038	.023	.091	.068	.045	.091	.091	.068	.068	.091	.023	.045	.023	.000	.045
SF16	.091	.023	.045	.068	.023	.038	.045	.068	.045	.038	.045	.068	.038	.045	.023	.000

Table T.3 Total relationship matrix.

Success Factors	SF 01	SF 02	SF 03	SF 04	S F05	SF 06	SF 07	SF 08	SF 09	SF 10	SF 011	SF 012	SF 013	SF 014	SF 015	SF 016
SF1	.160	.177	.202	.241	.168	.218	.219	.204	.240	.198	.285	.175	.233	.198	.192	.202
SF2	.297	.244	.302	.327	.315	.373	.360	.328	.366	.319	.380	.282	.362	.302	.349	.317
SF3	.249	.218	.186	.235	.187	.273	.218	.236	.287	.225	.249	.210	.299	.251	.209	.218
SF4	.239	.276	.287	.244	.243	.296	.305	.331	.290	.308	.358	.267	.301	.244	.297	.241
SF5	.270	.308	.284	.343	.213	.305	.298	.326	.324	.271	.333	.245	.359	.320	.287	.318
SF6	.220	.215	.219	.242	.198	.203	.231	.242	.236	.226	.289	.253	.245	.226	.224	.219
SF7	.299	.251	.328	.348	.260	.336	.259	.332	.309	.305	.382	.266	.343	.303	.333	.258
SF8	.239	.256	.241	.287	.203	.313	.282	.224	.308	.239	.287	.215	.277	.226	.252	.284
SF9	.309	.297	.274	.291	.241	.301	.287	.284	.250	.269	.324	.276	.348	.313	.270	.286
SF10	.206	.201	.189	.206	.194	.251	.203	.228	.226	.165	.269	.177	.229	.208	.236	.201
SF11	.225	.231	.272	.265	.247	.270	.307	.314	.251	.241	.252	.230	.301	.228	.296	.247
SF12	.240	.261	.255	.289	.214	.280	.268	.254	.292	.294	.344	.196	.287	.293	.263	.225
SF13	.283	.250	.307	.286	.238	.333	.298	.305	.287	.241	.313	.244	.256	.285	.260	.300
SF14	.254	.229	.282	.274	.277	.307	.267	.281	.274	.258	.329	.284	.335	.219	.285	.236
SF15	.251	.246	.245	.327	.261	.291	.323	.331	.305	.284	.356	.225	.297	.240	.230	.260
SF16	.260	.192	.224	.260	.180	.237	.234	.259	.241	.215	.266	.230	.242	.222	.206	.173

Table T.4 Degree of Central matrix

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Success Factors	SF 01	SF 02	SF 03	SF 04	SF05	SF 06	SF 07	SF 08	SF 09	SF 10	SF 011	SF 012	SF 013	SF 014	SF 015	SF 016	Ri
SF1	.160	.177	.202	.241	.168	.218	.219	.204	.240	.198	.285	.175	.233	.198	.192	.202	3.314
SF2	.297	.244	.302	.327	.315	.373	.360	.328	.366	.319	.380	.282	.362	.302	.349	.317	5.223
SF3	.249	.218	.186	.235	.187	.273	.218	.236	.287	.225	.249	.210	.299	.251	.209	.218	3.753
SF4	.239	.276	.287	.244	.243	.296	.305	.331	.290	.308	.358	.267	.301	.244	.297	.241	4.527
SF5	.270	.308	.284	.343	.213	.305	.298	.326	.324	.271	.333	.245	.359	.320	.287	.318	4.803
SF6	.220	.215	.219	.242	.198	.203	.231	.242	.236	.226	.289	.253	.245	.226	.224	.219	3.689
SF7	.299	.251	.328	.348	.260	.336	.259	.332	.309	.305	.382	.266	.343	.303	.333	.258	4.912
SF8	.239	.256	.241	.287	.203	.313	.282	.224	.308	.239	.287	.215	.277	.226	.252	.284	4.134
SF9	.309	.297	.274	.291	.241	.301	.287	.284	.250	.269	.324	.276	.348	.313	.270	.286	4.621
SF10	.206	.201	.189	.206	.194	.251	.203	.228	.226	.165	.269	.177	.229	.208	.236	.201	3.390
SF11	.225	.231	.272	.265	.247	.270	.307	.314	.251	.241	.252	.230	.301	.228	.296	.247	4.175
SF12	.240	.261	.255	.289	.214	.280	.268	.254	.292	.294	.344	.196	.287	.293	.263	.225	4.256
SF13	.283	.250	.307	.286	.238	.333	.298	.305	.287	.241	.313	.244	.256	.285	.260	.300	4.486
SF14	.254	.229	.282	.274	.277	.307	.267	.281	.274	.258	.329	.284	.335	.219	.285	.236	4.389
SF15	.251	.246	.245	.327	.261	.291	.323	.331	.305	.284	.356	.225	.297	.240	.230	.260	4.474
SF16	.260	.192	.224	.260	.180	.237	.234	.259	.241	.215	.266	.230	.242	.222	.206	.173	3.642
Ci	4.004	3.852	4.096	4.467	3.640	4.588	4.358	4.481	4.485	4.056	5.016	3.776	4.716	4.079	4.188	3.986	67.786 /67.786

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