IDENTIFYING THE BARRIERS TO GREEN SUPPLY CHAIN PRACTICES FOR SMALL AND MEDIUM ENTERPRISES WITH REFERENCE TO CENTRAL INDIA

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ABSTRACT

Purpose: The word "green supply chain management" (GSCM) has grown in status in recent years. In a cutthroat market, the majority of SMEs are establishing their own production facilities. The need for GSCM has grown as a result of growing public awareness, economic growth, environmental concerns, or regulatory changes. This study tries to pinpoint the drivers and obstacles faced by small and medium-sized businesses operating in Nagpur in this setting.

Design/methodology/approach: To determine the contextual links between various drivers and barriers, researchers have identified them. Additionally, using Modification Strategy, to determine the drivers of GSCM implementation in the SME’s was proposed.

Findings: Six kinds of pertinent hurdles have been found in the literature and consultations with academic and industrial professionals that followed. Three barriers have been acknowledged as the driver construct, three barriers have been acknowledged as the link construct and one barrier has been acknowledged as the dependent construct. There is no known barrier that is an autonomous variable. One bottom-level barrier and three top-level barriers have each been identified. The elimination of these obstacles was taken into consideration.

Research limitations/implications: Based on the ideas of experts, a conjectural model of these barriers was built. The results thus reached may be in addition adjusted to relate to a real-world issue.

Practical implications: Organizations that have a clear knowledge of these obstacles will be better able to set priorities and manage their resources.

Originality/value: Through this report, the researcher helps to prioritize and identify obstacles to GSCM implementation in SMEs in Nagpur. The established structured model will aid in understanding the interrelation of the barriers. The eradication of these obstacles is likewise recommended in this paper.

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IDENTIFICAÇÃO DAS BARREIRAS ÀS PRÁTICAS DA CADEIA DE SUPRIMENTOS VERDE PARA PEQUENAS E MÉDIAS EMPRESAS COM REFERÊNCIA À ÍNDIA CENTRAL

RESUMO

Objetivo: A palavra "gestão da cadeia de suprimentos verde" (GSCM) ganhou status nos últimos anos. Em um mercado acirrado, a maioria das PMEs está estabelecendo suas próprias instalações de produção. A necessidade

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de GSCM cresceu como resultado da crescente conscientização do público, do crescimento econômico, de preocupações ambientais ou de mudanças regulatórias. Este estudo tenta identificar os motivadores e os obstáculos enfrentados pelas pequenas e médias empresas que operam em Nagpur nesse cenário.

**Proyecto/metodología/abordagem:** Para determinar os vínculos contextuais entre vários motivadores e obstáculos, os pesquisadores os identificaram. Além disso, foi proposta a utilização da Estratégia de Modificação para determinar os motivadores da implementação do GSCM nas PMEs.

**Resultados:** Seis tipos de obstáculos pertinentes foram encontrados na literatura e nas consultas com profissionais acadêmicos e industriais que se seguiram. Três barreiras foram reconhecidas como o construto condutor, três barreiras foram reconhecidas como o construto de ligação e uma barreira foi reconhecida como o construto dependente. Não há nenhuma barreira conhecida que seja uma variável autônoma. Foram identificadas uma barreira de nível inferior e três barreiras de nível superior. A eliminação desses obstáculos foi levada em consideração.

**Limitações/implicações da pesquisa:** Com base nas ideias de especialistas, foi criado um modelo conjectural dessas barreiras. Os resultados assim alcançados podem ser ajustados para se relacionarem a um problema do mundo real.

**Implicações práticas:** As organizações que tiverem um conhecimento claro desses obstáculos terão mais condições de definir prioridades e gerenciar seus recursos.

**Originalidade/valor:** Por meio deste relatório, o investigador ajuda a priorizar e identificar os obstáculos à implementação da GSCM nas PMEs de Nagpur. O modelo estruturado estabelecido ajudará a entender a interrelação de barreiras. A erradicação desses obstáculos também é recomendada neste documento.

**Palavras-chave:** Pequenas e Médias Empresas (PMEs), Gestão da Cadeia de Suprimentos Verde, Barreiras, Motivadores.
INTRODUCTION

Traditional supply chains support linkages that serve as a conduit for an organization to transform input into output. Earlier supply chain scenarios had to deal with challenges connected to the timely and economical delivery of commodities. However, the rapid growth of urbanization and globalization changed people's perspectives on the old working method. The current crescendos of the supply chain encourage the acceptance of environmentally suitable practices as well as efficient use with proper resources connected to people, materials, and money; the core of this is concentrated in the term "sustainability."

Supply chain management is a hot topic in the modern period, which is expanding new locations to match supply and demand designs in an economical manner. In addition, academics' attention is shifting to this area in order to explore new vistas that boost the effectiveness of supply chains. Supply chain desires to be reviewed for the deployment of enactment concerned with occupation strategies if it is to flourish in the competitive climate and maintain substantial market shares. Due to these circumstances, academics and businesspeople are exploring novel ideas in order to meet urgent needs.

The establishment of the Environmental Protection Agency in the United States in 1987, the term "sustainability" was first used in the Brundtland Report. The Triple Bottom Layer (TBL), often known as the notion of sustainability, is made up of three main layers: social, environmental, and economic. Elkingston has nicely identified these layers. Three objectives were established at the 2005 World Summit on "Social Development," and they are shown in Figure 1.

About 1800 examination publications have been distributed since 1990 with keywords like "SSCM," "SCM," and "Supply chain." Although experts from Europe have done the majority of the work, a small number of Asian researchers have contributed. It is estimated that SSCM adoption is still lacking in one-third of sectors. Being a popular research issue at the moment, SSCM has not received much attention from researchers in developing countries. As a result, there is now a research gap that has to be closed in order to get more knowledge about the situation of emerging countries. Supply chain, which in the 1970s appeared to be non-competitive, is now a crucial component for gaining a competitive edge. According to Pagell and Wu, it is essential to link supply chain processes with sustainability dimensions in order to effectively and efficiently meet the needs of future generations. However, the techniques allowing the incorporation of sustainability through supply chain working procedures still need to develop. Investigatorstake recently focused on an idea that SC top management needs to be
more effective, and specialists require to determine the effects of maintainable practices through their organizations for improved application of regular means. Investigators believe that the future of traditional supply chains can be seen in sustainability and green efforts. According to Sudusinghe, there is a strong correlation between the social and environmental aspects of sustainability.

The law-making bodies are taking steps to improve the environment in light of the environmental effects of urbanization and industrialization. Due to end customers’ growing knowledge of the importance of a clean environment, industry is also being pressured to implement environmentally friendly practices in order to project an image of environmental responsibility and gain an advantage over rivals. Maintaining the sustainable nature of business is a vital component of the supply chain that is receiving more attention, not only for businesspeople but for all of the planet's living things as well. Researchers have taken to the idea of sustainability as a topic of interest. The incorporation of the conventional supply chain and the aspects of sustainability is depicted in figure 2 in place of the idea of sustainability.

OBJECTIVE OF THE STUDY

• To determine the crucial GSCM implementation factors that are pertinent to Nagpur's SME sector.
• To determine the obstacles to GSCM performance measurement evaluation in Nagpur SME’s.

LITERATURE REVIEW

Small and medium-sized firms (SMEs), which are over 95% of businesses, have significant impact on the environment globally. SMEs have started to find more efficient ways to improve environmental performance as a result of the recognition they have received for the crucial roles they play in adopting sustainable operations to minimise environmental pollution. Although there has been debate regarding the idea that small and medium-sized enterprises (SMEs) should not perform environmental practises because of their low individual environmental impact and because they may not have the necessary knowledge and skills to fully address environmental issues, more recent literature has supported the idea that SMEs are actually more suited to go green than larger corporations. (Silvestre, 2015). This justification is based on how quickly SME's make decisions when compared to large corporations.
For instance, SMEs often have greater adaptability and flexibility to execute operational initiatives quickly in response to shifting market conditions. The restaurant industry in particular is regarded as a SME sector and is well-known for having a large environmental impact. As a consequence, cafeterias and their green practices played a crucial role for advancing environmental excellence, finally satisfying the needs of modern consumers. As a result, many restaurants in the SME sector make a variety of steps to improve their environmental enactment by retaining environmentally approachable made objects, cutting back on food waste, lowering reserve consumption, and preserving energy. In order to attain improved environmental practices, SMEs should create and maintain well-structured networks and alliances amongst business partners, according to academic research.
In academic literature, the phrase "green supply chain management" (GSCM) is frequently used to refer to organizational and business decisions regarding the purchase of goods and services with an eye toward protecting the environment. (Baqleh, L. A., & Alateeq, M. M., 2023). GSCM focuses on implementing environmentally friendly management throughout the entire company process, from product manufacture to consumer purchase and consumption. GSCM is also known as "environmental purchasing," which refers to the adoption of eco-friendly purchases of raw ingredients and products with fewer elements that are harmful to the environment and utilizing less materials made from more naturally occurring and recyclable resources. It is commonly recognized that GSCM is the finest method for enterprises to get rid of or minimize resource and air pollution (energy, materials, and products) (Zimon, 2019). In support of this, earlier research claimed that GSCM adoption is necessary to minimize the damaging effects of industrial and commercial activities on the environment, which eventually helps firms in terms of ethics/social benefits and competitive advantages. In order to exceed consumer expectations and enhance business performance, GSCM procedures have consequently become a crucial business requirement. In order to enhance productivity the organizations also have sensitivity analysis approach implemented. (Surbhi S, Anant D., et.al, 2023) (Pagell and Wu, 2011). Numerous studies have shown that in order to improve corporate performance, all business operations should be carried out in accordance with common objectives and visions held by supply chain participants. (Sudusinghe and Seuring, 2020), In this sense, attaining GSCM necessitates complete integration and cooperation across all supply chain participants. In order to observe environmental presentation and connect significant data with business associates for improved conservational practices, well-built systems, and conglomerates are essential. Hence we propose following hypotheses:

**H1:** Lack of will on behalf of proprietors/partners/entrepreneur is a barrier to implement Green Supply Chain Management Practices

**RESEARCH METHODOLOGY**

A thorough questionnaire was created and distributed to several sectors in the southern region of India based on literature reviews and talks with industry professionals. After careful examination of the returned questionnaires, the most prevalent impediments acknowledged by diverse organisations were noted.
RESULTS AND DISCUSSION

Level of agreement of your organization on the following barriers (Lack of will on behalf of proprietors/partners/entrepreneur) to implement green supply chain practices at organization level.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Reliability Statistics</th>
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<tbody>
<tr>
<td></td>
<td>Cronbach's Alpha</td>
</tr>
<tr>
<td></td>
<td>.875</td>
</tr>
</tbody>
</table>

Source: SPSS output prepared by authors (2023)

<table>
<thead>
<tr>
<th>Table 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid Missing</td>
<td>Mean Std. Deviation Skewness Kurtosis</td>
</tr>
<tr>
<td>Lack of Management Commitment</td>
<td>93 0 2.75 .905 -.026 -.965</td>
</tr>
<tr>
<td>Lack of industrial associations’ support for implementation</td>
<td>93 0 3.17 1.109 -.252 -.917</td>
</tr>
<tr>
<td>Entrepreneurs’ resistance to change is a challenge to GSCM implementation</td>
<td>93 0 2.84 .825 -.403 -.241</td>
</tr>
<tr>
<td>Green practices implementation is not a top priority for top management</td>
<td>93 0 3.01 .950 .056 -.723</td>
</tr>
<tr>
<td>Lack of partners support is the barrier to implement GSCM</td>
<td>93 0 2.84 .888 .420 -.030</td>
</tr>
</tbody>
</table>

Source: Prepared by authors (2023)

A 5-question survey has been developed by a researcher to assess the Lack of will on behalf of proprietors/partners/entrepreneur to implement green supply chain practices at organization level. The Likert scale ranged from “strongly disagree” to “strongly agree”; on a 5-point scale for each question. 93 organisations were used as the sample size for the Cronbach’s alpha, which was used to determine whether the questions all reliably assess the same thing. An appropriate Cronbach’s Alpha value is 0.873. A measurement of symmetry, or more specifically, the absence of symmetrical, is called skewness. If a dispersion or set of data appears the same to the left and right of the centre point, it is said to be symmetrical. Statistics that are slanted left are represented by low numbers for the skewness. By skewed left, the researcher mean that the left tail is long relative to the right tail. In the above table, the values are negatively skewed but near to zero ranging from -0.026 to 0.420. Kurtosis is used to find the presence of outliers in data. It gives us the total degree of outliers present. The range of
values for a negative kurtosis is from -0.030 to -0.965. The lower the value of kurtosis, the lower the peak.

Table 3

<table>
<thead>
<tr>
<th>Value</th>
<th>Test Value</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of will on behalf of proprietors/partners/entrepreneur</td>
<td>29.340</td>
<td>92</td>
<td>.000</td>
<td>2.753</td>
<td></td>
</tr>
<tr>
<td>Lack of Management Commitment</td>
<td>27.572</td>
<td>92</td>
<td>.000</td>
<td>3.172</td>
<td></td>
</tr>
<tr>
<td>Lack of industrial associations' support for implementation</td>
<td>33.192</td>
<td>92</td>
<td>.000</td>
<td>2.839</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurs' resistance to change is a challenge to GSCM implementation.</td>
<td>30.570</td>
<td>92</td>
<td>.000</td>
<td>3.011</td>
<td></td>
</tr>
<tr>
<td>Green practices implementation is not a top priority for top management.</td>
<td>30.821</td>
<td>92</td>
<td>.000</td>
<td>2.839</td>
<td></td>
</tr>
</tbody>
</table>

Source: Prepared by authors (2023)

In the above table, the researcher calculated the t values which affects the green supply chain management. There were 5 questions considered for the Lack of will on behalf of proprietors/partners/entrepreneur. As per the calculations critical value is more than the table value at 95% level of confidence. In all variables level of significance is less than the 0.05. Hence, null hypothesis is rejected and alternate hypothesis is accepted i.e. “Lack of will on behalf of proprietors/partners/entrepreneur is a barrier to implement Green Supply Chain Management Practices”.

CONCLUSION

The current study unequivocally shows that SME's in Nagpur are gradually realising the value of sustainable practices. GSCM techniques in India are still in their infancy and have a long way to go. The researcher has been inspired to share some thoughts based on some intriguing and positive findings, which can undoubtedly help those manufacturing organisations who are eager to adopt GSCM techniques. SME's who embrace collaborative approaches in process and product creation and include their suppliers in their business strategy have a significant competitive edge in terms of both superior financial results and superior environmental results. However, it is exclusively limited to Nagpur's SME sector. However, the bulk of SME's in Nagpur have not yet realised how important green practices are.

Regulations are one of the factors that influence GSCM procedures, however respondents rank regulations as their least favourite variable. It is crucial in the beginning, but it gives legal guardians the chance to take advantage of these SMEs to the fullest or encourages
unethical behaviour. As a result, the majority of manufacturers on small- and medium-sized firms are allowed to flout rigorous environmental regulations. This is one of the main causes of India's high carbon emission levels. It is crucial to hold seminars and forums to discuss the long-term potential benefits of GSCM practises for these SME's in terms of improved company performance.

REFERENCES


Mankar, V. A., Vichoray, C., Somani, N. N., & Deogaonkar, A. (2023)
Identifying the Barriers to Green Supply Chain Practices for Small and Medium Enterprises with Reference to Central India


