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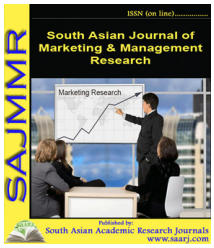

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USING THE BEST WORST METHOD TO ASSESS THE SOCIAL SUSTAINABILITY OF SUPPLY NETWORKS

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ABSTRACT

The economic, environmental, and social aspects of sustainability must all be considered by a genuinely sustainable company. Although many academics and practitioners have studied the economic and environmental aspects of sustainability, the social dimension has received less attention in literature and practice, particularly in developing countries. Other sustainability efforts are enabled by social sustainability, and ignoring this component may have a significant negative effect throughout supply chains. This research offers a methodology for evaluating the social sustainability of supply chains in manufacturing firms to solve this problem. To demonstrate the applicability and effectiveness of the proposed framework, a group of 38 experts evaluated and prioritized social sustainability criteria using the 'best worst approach,' a multi-criteria decision-making technique (BWM). The criteria are ordered by their average weight as determined by BWM. The most significant social sustainability criteria, according to the respondents, are "contractual stakeholders influence." The findings of this research may assist industry managers, decision-makers, and practitioners in determining where to concentrate their attention during the implementation stage in order to improve social sustainability in their organization's supply chain and progress toward sustainable development.

KEYWORDS: *Best Worst Method (BWM), Social Sustainability, Sustainable, Supply Chain Management.*

1. INTRODUCTION

Several studies have suggested sustainability frameworks that include all three aspects, albeit with a focus on economic and environmental sustainability. However, just a handful has attempted to use empirical analysis to investigate social standards. This article offers a comprehensive assessment methodology to examine social sustainability in the context of Iran's manufacturing industry in order to rectify this mismatch. The 'best worst method' (BWM) is a new multi-criteria decision-making technique (MCDM) that is used in this research to assess and prioritize social sustainability criteria [1]. The Iranian industrial supply chain was chosen for two

reasons. To begin with, the Iranian economy is heavily reliant on its industrial sector (after oil and gas).

At the same time, it is a sector that confronts significant difficulties, ranging from strikes over workplace safety and health to employee rights in the face of unfair labor practices. Second, the industry is expanding, necessitating some kind of best practices in terms of supply chain social sustainability to assist new entrants and current businesses in making sustainability-related choices in order to improve the sector's bad social image. Although the triple-dimension (economic, environmental, and social) should be addressed simultaneously in order to have a sustainable supply chain management (SSCM), we concentrate on the social component to further our knowledge of this factor. As a consequence, the findings of this research may be helpful as input for long-term supply chain management choices. The following goals are explicitly addressed in this paper.

To accomplish these goals, a literature review is conducted within the sustainable supply chain management discipline to identify potential social sustainability criteria, which are then subjected to several rounds of review by industry experts in order to propose a comprehensive supply chain social sustainability framework, which is then evaluated using BWM. In other words, we evaluate the relative significance (weights) of the criteria and rank them in order of importance to the organization's long-term viability. There are two major contributions in this article. To begin, we create a framework for studying social sustainability in the manufacturing industry. Second, to study and evaluate social sustainability, we offer a novel MCDM technique (BWM).

1.1. Managing a long-term supply chain

Supply chain management (SCM) is a collection of methods and practices for managing and establishing efficient coordination within and across businesses in a supply chain, with the goal of enhancing customer service, asset utilization, profit creation, and cost reduction. Multiple decision-makers are engaged in a supply chain's management of processes, resources, and information that aren't always under their direct control. To put it another way, to make supply chain operations sustainable, companies throughout the supply chain must integrate their operations and collaborate. Sustainable supply chain management (SSCM) is defined as the management of supply chain activities, operations, resources, information, and funds with the goal of maximizing supply chain profitability as well as social well-being (e.g., the impact of supply chains on employees, customers, and society) while minimizing negative environmental effects. SSCM has many elements, and it necessitates multi-operational tasks in order to get a competitive edge.

SSCM focuses on preserving the environment and improving the socio-economic dimension for long-term sustainable development SSCM encourages businesses to enhance their supply chain's social, economic, and environmental performance. The environmental and social implications of a company's supply chain activities are enormous and complex to control. As a result, SSCM reduces negative operational impacts and increases firm value/efficiency in terms of environmental, economic, and social dimensions, resulting in sustainable development. SSCM is seen as a way to improve supply chain management, with a significant impact on the company's competitiveness and supply chain operations, with the goal of building the necessary capabilities to compete and succeed.

According to Chardine-Baumann and Botta-Genoulaz, supply chain sustainability is one of the ways to improve organizational performance. This has an effect on a company's competitiveness

as well as the operation of its supply chain. Managing these projects and programs entails a wide range of problems, including supplier selection and the use of green technologies to boost long-term joint competitive advantage [2]. In the SSCM literature, it is evident that adopting sustainable initiatives and programs strengthens partners' and stakeholders' competence and collaboration by increasing environmental performance, reducing waste, and saving money [3]. This emphasizes the need of combining economic, environmental, and social elements of business theory and practices in order to achieve long-term supply chain management. As a result, in order for companies to improve their sustainability, business operations must manage their operations with the long-term goal of preserving society, the economy, and the environment. Many businesses are starting to utilize sustainability indicators to assess their degree of sustainability, with an emphasis on environmental sustainability.

Srivastava developed an SSCM decision-making framework that focuses on five major strategic areas: product design, material selection, manufacturing, completed product delivery to the customer, and end-of-life product management at the conclusion of their life cycle. Despite the fact that Srivastava established a sustainability framework, the operational criteria did not contain explicit criteria for the social dimension, and any sustainability effort without that social component is likely to be inadequate and incapable of dealing with the social effect. Carter and Rogers developed an SSCM framework based on resource dependency theory, population ecology, and the corporate resource-based perspective, taking into consideration fundamental supporting facts that are needed in the application of SSCM practices. In order to achieve long-term economic viability in an SCM setting, the authors looked at the connections between social, environmental, and economic performance. The global demand for water, energy, and mineral resources has recently increased, pushing the global price of these resources up. Figure 1 discloses the Distribution of papers based on sustainability dimensions

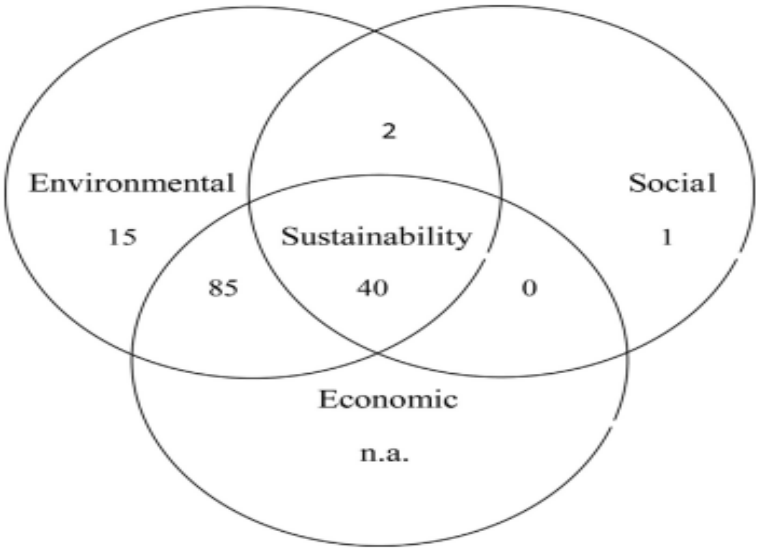

Figure 1: Distribution of papers based on sustainability dimensions

2. DISCUSSION

The economy should be focused on long-term development. Most of the time, the primary emphasis has been on long-term economic viability. Social issues, on the other hand, Environmental sustainability has a significant effect on economic growth. Choices and policies that have a long-term economic impact. Iran, the study's example nation, is a developing country

in the Middle East. Asia is in the west. Iran is still in the early phases of sustainable development [4]. The non-economic elements of sustainable development have received a lot of attention in recent years. Despite the many laws and policies aimed at moving the nation forward, Iran, like many other developing countries, is working for long-term growth. This project has not yet proven effective in any of the nations involved. The explanations may include the government's failure to implement regulatory policies.

Government and a lack of senior management commitment on the side of industries/companies to execute such efforts, which tend to be more concerned with long-term economic viability. As a consequence, there has been an increase in Various social activists have exerted pressure on Iranian manufacturing firms on both a national and international level, causing some to shut down. According to Mani et al. research, in emerging nations, social problems have been especially difficult. And that additional study on social sustainability is needed in underdeveloped nations. In the industrial sector, supply chain activities are managed by organizations. It's one of the few studies on the subject, particularly in emerging countries. In Iran, researchers are looking at societal sustainability. The goal of this article is to help industrial managers, decision-makers, and practitioners understand how supply chains work. The social sustainability component of the supply chain may be utilized to reduce the industry's social effect and make supply networks more sustainable.

To progress in the direction of long-term development as an example of the planned to assess the framework's applicability and utility, as well as to offer a thorough assessment of social sustainability, a group of 38 Iranian manufacturing sector practitioners from a variety of sectors was chosen Automotive, electric and electrical, chemical, telecommunications, cement, tile, and other related industries Manufacturers of motorcycles with more than ten years of experience. There are 10 general managers and fifteen supply chain managers among them.

Interviews and discussions were performed by the study team. By alerting the practitioners about the project, we were able to collect data. The BWM in Practice Determination of decision criteria [5]. The decision-makers established a set of criteria to be used in the first phase. Explain the topic at hand. The criteria were determined using a variety of methods. Review of the research and feedback from decision-makers and practitioners The requirements for social sustainability have been established [6]. There were 38 specialists in all, each with over 10 years of expertise in their respective areas. A questionnaire containing questions was used in the beginning. The 16 social sustainability criteria listed above were given tithe experts for evaluation at various periods, as well as instructions on how toot finish up the questionnaire the experts were asked to identify which ones, they thought were the best. Because some of the criteria are more relevant to their company's activities Choosing "1" for important and "0" for unimportant.

The specialists were then consulted. Prompted to propose additional relevant criteria based on their previous experience within terms of their company's social sustainability and organizational sustainability in general. The study team was in agreement with the findings. Specialists agreed that criteria accepted by at least thirty experts would be a be considered for the next round of review there are two more requirements. Two of the specialists made suggestions. Three rounds of interviews were conducted in all. Finally, eight societal issues were identified. The criteria for sustainability were chosen. The 38 responders indicated the most and the least in the second stage.

As well as the most essential and least significant social sustainability criterion utilizing a questionnaire as a criterion the greatest and worst result are given bel. Choosing the best criterion preference out of all the options the responders were asked to choose the best option in the third

stage. Criterion's preference above all other criteria, measured on a scale of 1–9 scale. Identifying the other criteria that have a higher priority than the worst criterion the respondents were asked to select their choice in this stage. Through a questionnaire, the ratio of all criteria over the least important criterion, again using a measurement scale o the results [10].

One of the responding managers' replies the optimum weights of the criteria is determined in this stage. Each of the 38 responders was given the task of solving the BWM optimization model. Then, for each criteria, a simple weighted average is calculated to provide a single weight vector, which shows the average consistency ratio comparisons are made because L*) is near to zero. For the time being, the numbers are small. The s.d. indicates that the responses are all the same. The study's final findings are listed in [7]. The outcomes offer information to help managers make strategic choices From The greatest score is in, "contractual stakeholders' impact (SSC3)." The weight of the social sustainability criteria is 0.292. Stakeholders under contract When these organizations try to attain social sustainability in particular, influence is the most essential and important criteria. In general, organizational sustainability development. This was then followed by "workplace safety and health (SSC1)" and "training education and development" community impact (SSC2), with criteria weights of 0.120 and 0.140, respectively.0.118 in each case. The ramifications of this finding for the industrial industry Contractual stakeholder influence necessitate the highest and most urgent management attention in Iran and other developing countries. a focus on assisting in the attainment of improved social sustainability and, in general, sustainable development It will establish part of the agenda after contractual stakeholder influence has been created and executed. lays the groundwork for the addition and growth of the other criteria, eventually leading toot the overall program's improvement This finding also indicates [9].

3. CONCLUSION

Manufacturing activities have a huge negative worldwide environmental and social effect. Best and Worst criteria determined by Experts. Criteria for social sustainability Experts voted it the best. Experts have rated it as the worst. Workplace safety and health (SSC1) 0.120 0.029Occupational health and safety management system (SSC4) 0.035 0.011 Training, education, and community impact (SSC2) 0.118 0.032 Contractual stakeholders influence (SSC3) 0.292 0.031Iran is one of 104 developing economies. Several manufacturing companies have started a number of initiatives to address these issues. In addition, a number of studies have attempted to address the issue of organizational supply chain sustainability. However, these initiatives and early attempts tend to focus on a broader spectrum of sustainability rather than specifically on supply chain social sustainability. Only a few studies and organizational interventions that have incorporated social dimensions into their SSCM frameworks and initiatives have focused on specific aspects of supply chains.

When it comes to the resources and competencies required to manage the manufacturing industry's social impact completely and systematically, as well as to achieve sustainable operations, the isolated and varied frameworks created are ineffective[8]. Currently, there is no way to combine these disparate concepts into a complete framework that can assist the industrial sector in incorporating social sustainability into their supply chains. To address this issue, this study began by reviewing previous sustainability studies in order to identify possible criteria in the manufacturing environment, which were then subjected to multiple rounds of evaluation by industry experts in order to offer a complete framework. Using a sample of 38 experts, we developed and utilized the "best worst method" (BWM) to evaluate and rank the suggested criteria to aid managers in their decision-making process.

The relative weights of the criteria were established, and they were then prioritized based on their worth and significance to the organization's long-term viability. According to the findings, the most significant criteria for attaining social sustainability were "contractual stakeholder impact," while the least important criterion was "occupational health and safety management system." The proposed framework can assist businesses in developing the capabilities they need to achieve long-term development. The framework, in particular, may assist supply chain managers and practitioners in developing nations in more effectively evaluating and determining the significance and impact of social sustainability practices in manufacturing companies, as well as implementation routes. Managers at Iranian manufacturing firms (and, by extension, in other developing countries) now have a tool to assess and execute social sustainability.

There are some limitations to this study, and more research is needed. The restrictions provide plenty of opportunity for development and may serve as a good starting point for further study into this topic. The exploratory character of this research is one of its major drawbacks. The results provided here are exploratory in nature, since they only look at one industrial sector in one area (Iran), making them difficult to generalize. Given the respondents' similarity, we may be reasonably confident about specific actions and concerns linked to attaining social sustainability among Iranian manufacturing firms and the manufacturing sector as a whole.

There is clearly a need for greater and wider empirical study. The findings are also limited to a particular research period. To see whether the rankings of the criterion vary over time, longitudinal research is needed.

Future studies should utilize additional MCDM models to establish the weights, as well as our social sustainability criterion framework, and compare the findings of these models to our BWM results. It is obvious that social sustainability in developing economies is a topic that deserves and needs further research. This study, in our opinion, serves to set the groundwork for a research subject that will only grow in significance in the coming years.

REFERENCES

1. M. Tavana, M. Yazdani, and D. Di Caprio, “An application of an integrated ANP–QFD framework for sustainable supplier selection,” *Int. J. Logist. Res. Appl.*, 2017.

2. E. Eizenberg and Y. Jabareen, “Social sustainability: A new conceptual framework,” *Sustain.*, 2017.

3. D. Kannan, “Role of multiple stakeholders and the critical success factor theory for the sustainable supplier selection process,” *Int. J. Prod. Econ.*, 2018.

4. K. Zimmer, M. Fröhling, and F. Schultmann, “Sustainable supplier management - A review of models supporting sustainable supplier selection, monitoring and development,” *Int. J. Prod. Res.*, 2016.

5. G. G. Chowdhury, “Social sustainability of digital libraries: A research framework,” in *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 2013.

6. X. Zhou and Z. Xu, “An integrated sustainable supplier selection approach based on hybrid information aggregation,” *Sustain.*, 2018.

7. V. Mani, A. Gunasekaran, and C. Delgado, “Supply chain social sustainability: Standard adoption practices in Portuguese manufacturing firms,” *Int. J. Prod. Econ.*, 2018.

8. S. Luthra, K. Govindan, D. Kannan, S. K. Mangla, and C. P. Garg, “An integrated

framework for sustainable supplier selection and evaluation in supply chains," *J. Clean. Prod.*, 2017.

9. M. Sohoraye, C. Bokhoree, and P. Poinen, "The SOCI00 index: A novel and unified conceptual measurement for social sustainability assessment," *Int. J. Sustain. Econ. Soc. Cult. Context*, 2015.

10. M. Khan, M. Ajmal, M. Hussain, and P. Helo, "Barriers to social sustainability in the health-care industry in the UAE," *Int. J. Organ. Anal.*, 2018.