

# Opportunities and Challenges in Application of Sustainability: A Study of CEOs from Pune, India

Dr. Somnath Patil<sup>1</sup>, Vishal Wadajkar<sup>2</sup>

<sup>1</sup>Associate Professor, Dr. D. Y. Patil Institute of Management and Research, Pune, Maharashtra, India

<sup>2</sup>Assistant Professor, Dr. D. Y. Patil B-School, Pune, Maharashtra, India

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## ABSTRACT

Based on secondary data 10 opportunities and 10 challenges were identified and were pitched for a survey among 100 CEOs of mid-sized (Turnover between Rs.100-500 crores) manufacturing companies. The aim was to assess the agreement or disagreement for the opportunities and challenges in the application of sustainability in business. Respondents overwhelmingly agreed to both the listed opportunities and challenges for sustainability. It is an encouraging sign to note the optimism amongst the CEOs for opportunities in sustainability along with due caution and awareness for the likely challenges.

**Keywords:** Sustainability, Manufacturing companies, Opportunities, Challenges

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## INTRODUCTION

Of late there has been increased interest in sustainability in the business setting. This has been the result of a positive impression of the social advantages liable to build from sustainable business venture. The literature on the sustainability dimension is available in abundance. An intriguing territory of exploration about sustainable business venture has been in getting experiences with respect to how it has changed the very idea of business. This is relied upon to give a significant approach direction to advance more research in the space of sustainable business. Business customarily was considered absolutely as an economic activity.

Notwithstanding, this has changed with the development of interest and worry about social issues. Over the recent many years, however, to a great extent, imbalanced monetary development has surrendered to the allurements of a boost of benefits and momentary financial increase. To confront this test, business networks, the United Nations and the legislatures, have progressively voiced together for sustainable development activities (Keskin, et al., 2013). This example is additionally been found in the business. Business visionaries are viewed as drivers of monetary development, yet in addition as impetuses equipped for reducing social, financial, and ecological issues in the general public. The action of finding, making, and utilizing occasions to accomplish 'triple bottom line' (Elkington, 1997) or adding value for the general public, the planet, and also adding profits, is coined as a "sustainable business venture" (Cohen and Winn, 2007).

## LITERATURE REVIEW

Early literature - Linton (2007), Carter and Roger, (2008); Seuring and Mueller, (2008) - focus only on economic profit. However, in recent times, the literature, Crum et.al, (2011); Seuring, (2013); Genevose et al., (2017), shows a clear shift in focus on sustainability along with economic goals.

Carter and Roger, (2008) addressed questions like: How are social, environmental, and economic performance related in a supply chain context? What kind of framework can be developed based on factors like transaction cost economics, resource dependence theory, the resource-based view of the firm, and the population ecology?

On the other hand, Genevose et al., (2017) have addressed questions like: Can circular economy principles integrated with sustainable supply chain management for higher benefits? How did the circular and linear chains compare?

One distinct feature of the literature reviewed is a clear contextual concentration of studies in the west. Studies in the Indian context are very few.

## **METHODOLOGY**

**The research methodology adopted is outlined below:**

1. A survey questionnaire was administered to 100 CEOs of mid-sized (Turnover between Rs.100-500 crores) manufacturing companies.
2. The selection of the 100 CEOs was based on the judgment of the writer of getting an adequate response in a reasonable time. Convenience sampling was used. For this purpose networking of the writer friends.
3. Based on literature 10 opportunities and challenges for sustainability were framed and responses were sought on a Likert-scale of 0-4: 0-Can't say, 1-Somewhat agree, 2-Strongly agree, 3-Somewhat disagree, 4-Completely disagree.
4. The survey questionnaire was divided into two parts: a. Opportunities for sustainability and b. Challenges for sustainability. These were as under:

### ***Areas of opportunities***

- i. Benefits to small enterprises through sharing of common and shared platforms of knowledge and technology
- ii. Better waste management
- iii. Creation of sophisticated knowledge networks to facilitate coordination
- iv. Increasing local sourcing
- v. Reduced shipping costs through location of nearest sources of supply and demand through use of technology
- vi. Reducing carbon footprints
- vii. Reduction in packing and packaging activities
- viii. Use of data and machine learning to automate processes
- ix. Use of electric-power vehicles
- x. Using sustainably harvested or manufactured materials

### ***Likely challenges***

- i. Apprehensions about support from collaborators and foreign partners
  - ii. Challenge in convincing all the stakeholders
  - iii. Concerns of high initial costs
  - iv. Difficulty in balancing economic and social outcomes
  - v. Difficulty of making available skilled employees
  - vi. Fear of obsolescence
  - vii. Lack of experience in using techniques like Sustainable SCM
  - viii. Legal issues like state permits
  - ix. Limited knowledge of advanced techniques of SSCM
  - x. Problems of high gestation periods with special projects
5. To distinguish the somewhat responses from the strong responses, a weight of 2 was assigned to each of the strong responses while doing the analysis.
  6. T-test was used at 95% confidence level and the sample mean (higher of agreement or disagreement) was tested for statistical significance by comparing it with a hypothesized population mean taken at 50% agreement or disagreement connoting an event by chance

### **Statement of Hypotheses:**

Ho1: There are no significant opportunities for application of sustainability in the manufacturing companies

Ha1: There are significant opportunities for application of sustainability in the manufacturing companies

Ho2: There are no significant challenges for application of sustainability in the manufacturing companies

Ha2: There are significant challenges for application of sustainability in the manufacturing companies

Data analysis included descriptive analysis specifying features of the sample and the inferential analysis to test the hypotheses. A t-test was used given the fact that the SD of the population is not known, in which case, a Z-test could have been applied. The use of a t-test in practice is widely done as a substitute for the Z-test wherein the SD of the sample is taken as the SD of the population (given unknown population SD).

The survey instrument returned a Cronbach's alpha of 0.844 that is better than 0.70 (the standard) and hence was considered as reliable.

**DATA ANALYSIS**

**Descriptive analysis:**

Out of the 100 CEO's 93 were male while 7 were females. 15 out of the 100 CEOs surveyed belonged to the age-group of <40 years, 34 belonged to the age-group 40-50 years and 51 were above 50 years. 14 CEOs had experience at the CEO level for less than 10 years; 39 had it for a period between 10-15 years and balance 47 had the experience for more than 15 years.

**Inferential analysis:**

The null hypotheses were set as the sample mean ( $\bar{x}$ ) equals the hypothesized population mean ( $\mu$ ). Summary of the ratings for the agreement levels are given in Table 2 below:

Summary of the ratings for the awareness levels are given in Table 1 and 2 below:

**Table 1: Average agreement ratings for opportunities in sustainability**

Opportunity	1	2	3	4	5	6	7	8	9	10	Total
Average agreement %	89%	89%	82%	84%	91%	81%	84%	87%	91%	86%	86%

**Table 2: Average agreement ratings for challenges in sustainability**

Challenge	1	2	3	4	5	6	7	8	9	10	Total
Average agreement %	95%	96%	94%	89%	92%	92%	95%	90%	83%	93%	92%

Table 3 shows the testing of the hypothesis at 95% confidence level.

**Table 3: Testing of the hypotheses**

Parameter	H1 value	H2 value
Sample Mean ( $\bar{x}$ )	86%	3.20
Hypothesized population mean ( $\mu$ )	50%	3.00
SD of sample	0.839	0.6482
N	100	100
t-value	4.339	6.47604
p-value	0.00002	0.00000
Decision	Reject Null	Reject Null

Both the null hypothesis were rejected in favor of the alternate that the sample means are significantly different from the hypothesized population means.

**DISCUSSION ON RESULTS**

The average agreement on the ten opportunities for sustainability as expressed by the 100 CEOs of mid-sized manufacturing firms was 86%. Opportunities like Benefits to small enterprises through sharing of common and shared platforms of knowledge and technology, Better waste management, Creation of sophisticated knowledge networks to facilitate coordination, Increasing local sourcing, Reduced shipping costs through the location of nearest sources of supply and demand through the use of technology, Reducing carbon footprints, Reduction in packing and packaging activities, Use of data and machine learning to automate processes, Use of electric-power vehicles and Using sustainably harvested or manufactured materials were widely agreed to by the respondents. At the same time, the average agreement for the ten challenges was 92%. Challenges like Apprehensions about support from collaborators and foreign partners, Challenge in convincing all the stakeholders, Concerns of high initial costs, Difficulty in balancing economic and social outcomes, Difficulty of making available skilled employees, Fear of obsolescence, Lack of experience in using techniques like

Sustainable SCM, Legal issues like state permits, Limited knowledge of advanced techniques of SSCM and Problems of high gestation periods with special projects were also widely agreed to by the 100 CEO respondents. Both the p-values direct rejection of the two null hypotheses in favor of the alternates.

### CONCLUSION

It is an encouraging sign to note the optimism amongst the CEOs for opportunities in sustainability along with due caution and awareness for the likely challenges. Sustainability has been in focus since 2015 when the UN has set 17 Sustainable Development Goals (SDGs) to be achieved by 2030. The impetus is now on profits that are environment friendly and socially beneficial as well. Our study shows that at the micro level, CEOs of manufacturing companies certainly have given a mandate for specific opportunities to put sustainability into action. They are optimistic that there are ample opportunities in the manufacturing sector for sustainability to actually happen. At the same time, they have thrown a wind of caution and have taken due cognizance of the challenges that lie ahead for implementation of sustainability. A bit of caution coupled with optimism is a good approach for success.

### REFERENCES

- [1]. Carter, C. R. and Rogers, D. S. (2008). Sustainable Supply Chain Management: Toward New Theory in Logistics Management. *International Journal of Physical Distribution and Logistics Management*, pp. 360-387.
- [2]. Cohen, B. & Winn, M., (2007). M.I. Market imperfections, opportunity and sustainable entrepreneurship.. *J. Bus. Ventur.*, Volume 22, p. 29-49.
- [3]. Crum, M., Poist, R., Carter, C.R. and Easton, P.L., (2011) Sustainable supply chain management: evolution and future directions. *International journal of physical distribution & logistics management*. Vol. 41 No. 1, pp. 46-62
- [4]. Elkington, J., (1997). Cannibals with Forks: The Triple Bottom Line of 21st Century Business. *Capstone: Mankato, MN*, pp. 27-1.
- [5]. Genovese, A., Acquaye, A.A., Figueroa, A. and Koh, S.L., (2017) Sustainable supply chain management and the transition towards a circular economy: Evidence and some applications. *Omega*, 66, pp.344-357.
- [6]. Keskin, D., Diehl, J. & Molenaar, N. (2013) Innovation process of new ventures driven by sustainability, *J. Clean. Prod.*, Volume 45, p. 50-60.
- [7]. Linton, J.D.; Klassen, R.; Jayaraman, V. (2007). Sustainable Supply Chains: An Introduction. *J. Oper. Manag.*, 42, 451-469.
- [8]. Seuring, S., (2013). A review of modeling approaches for sustainable supply chain management.. *Decis. Support Syst.*, Volume 54, p. 1513-1520.
- [9]. Seuring, S.; Muller, M. (2008). Core issues in sustainable supply chain management—A Delphi study. *Bus. Strategy Environ.* 17, 455-466.
- [10]. Trivedi, Bhumit (2015), "Successful NGO Management through Effective HR Practices", *MERC Global's International Journal of Management*, Vol. 3, Issue 2, pp. 27-38.
- [11]. Walke, S. G. and Kumar, Atul (2017), "Financial Analysis of Agritourism Operations: A Case Study", *MERC Global's International Journal of Management*, Vol. 5, Issue 4, pp. 136-142.
- [12]. Walke, S. G.; Kumar, Atul and Shetiya, Mahavir M. (2017), "Study of Global, National and Regional Evolution of Agritourism", *International Journal of All Research Education and Scientific Methods*, Vol. 5, Issue 12, December, pp. 30-37.