

# **A Literature Review on Impact of Green Procurement on Sustainability Performance of Small and Medium Enterprises in Pune**

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## **Abstract**

This paper presents an in-depth review of the studies around the Green Procurement and the Sustainability Performance of the Small and Medium Enterprises in India and at the global level. It aims at understanding and establishing the gaps within existing knowledge. Micro, Small and Medium-sized enterprises accounts for more than 90% of all businesses and around 70% of jobs worldwide. 27<sup>th</sup> June, which is celebrated as the Micro, Small and Medium-sized Enterprises Day, highlights the importance of these organisations in achieving the Sustainable Development Goals (SDG) by 2030. Sustainability being a buzz word across the globe, majority of the countries have outlined a plan for the future towards achievement of Sustainability in businesses. The study involved outlining the global practices and achievements in Green Procurement and Sustainability Performance of SMEs. The studies found that most of them focused on Green Supply Chain and little attention was paid to Green Procurement. Many studies on Green Procurement and its impact are conducted in the global West. Some studies in Indian context have addressed Sustainable Procurement, however they have paid little attention to establish the correlation with the Triple Bottom Line (TBL) of Sustainability. Very few Indian studies and fewer studies in Pune region, highlights the importance of study in this area. The present paper will provide more insights for understanding the Sustainability issues of the SMEs in India and at a global level, and how Green Procurement can be one of the solutions.

## **Keywords**

SDGs, SMEs, Green Procurement, Sustainability Performance and TBL.

## **1. Introduction**

India has traversed a long journey post-independence by starting as a newly independent poor underdeveloped nation in the year 1947. There existed a policy of self-reliance that was driven by ideology during 1950s-1960s strategy (Ray, 2006). A diversified industrial production strategy was planned ranging from simple consumer items to capital goods and heavy machinery. Trade was neglected, especially the exports (Wolf, 1982). Post 1991, after the introduction of the Liberalization, Privatization and the Globalization (LPG) Policy, the Indian economy witnessed a paradigm shift and larger growth. Several sectors like IT, ITES, Biotechnology and Pharmaceuticals spurted out with several industries (Unctad, n.d.). Later in the year 2006, the Micro, Small and Medium Enterprises Development (MSMED) Act was notified to deal with the policy issues affecting the MSMEs. Since they are regarded as the engines of growth, several advisory and consultative mechanisms were established. Since the MSME sector plays a crucial role in contributing to India's economy. It is considered as one of the emerging and a dynamic sector that can contribute towards the Self-Reliance ("Aatmanirbhar") of the country (*Ministry of Micro, Small & Medium Enterprises*, 2020). The MSMEs has a new definition from July'2020 as -

1. A Micro enterprise, where the investment in plant and machinery or equipment does not exceed one crore rupees and turnover does not exceed five crore rupees.
2. A Small enterprise, where the investment in plant and machinery or equipment does not exceed ten crore rupees and turnover does not exceed fifty crore rupees
3. A Medium enterprise, where the investment in plant and machinery or equipment does not exceed fifty crore rupees and turnover does not exceed two hundred and fifty crore rupees (*Ministry of Micro, Small & Medium Enterprises*, 2020).

The Brundtland Report that was introduced by the World Commission on Environment and Development in 1978 is credited with familiarizing the term "sustainability" internationally (WECD). According to the study, sustainable development is meeting present needs without sacrificing the ability to satisfy those of coming generations. If just economic interests are taken into consideration, the environment and overall welfare would suffer. The Triple Bottom Line's three pillars—economic, environmental, and social concerns—must thus be

balanced (TBL). The TBL concept was first put out by sustainability expert John Elkington. It is common knowledge that, as a result of global economic expansion, the danger of "natural" and "man-made" disasters must be tackled as a development issue rather than only requiring humanitarian aid. There are several ways in which climate change is affecting the world, and many nations are developing various initiatives to lessen this problem. However, rather than being a reactive action, this should be seen as a proactive one because the economic impact of such catastrophes is enormous, and the costs of recovery, rehabilitation, and other damages are severe. Governments everywhere should adopt long-term strategies to combat climate change and catastrophes through a variety of public initiatives. (Drolet & Sampson, 2017). Sustainable development should be an action-oriented approach (Purvis et al. 2017).

Micro, Small and Medium-sized enterprises accounts for more than 90% of all businesses and around 70% of jobs worldwide. They play an important role in boosting the economic growth and providing employment for women, young entrepreneurs, and poor communities. 27<sup>th</sup> June, which is celebrated as the Micro, Small and Medium-sized Enterprises Day, highlights the importance of these organisations in achieving the Sustainable Development Goals (SDG) by 2030. This paper presents an in-depth review of the studies around the Green Procurement and the Sustainability Performance of the Small and Medium Enterprises in India and at a global level. It aims at understanding and establishing the gaps within the existing knowledge.

## **2. Research Methodology**

This section covers articles on Green Procurement (GP) and Sustainability Performance of the SMEs from the local to the global context as well as some of the most delicate and general concerns that are now pertinent to this subject. The required data is gathered through retrieving books, theses, researches, and studies from other scholars. Articles are searched from databases like Scopus, Springer, Shodhganga repository, Researchgate, Google scholar, ScienceDirect websites for keywords – “Green procurement and SMEs”, “Sustainable Procurement and SMEs”, “Green Supply Chain Management and Sustainability”, “Green Procurement and Sustainability”, “Green Procurement and Economic Performance”, “Green Procurement and Social Performance”, “Green Procurement and environmental performance”, “Green Procurement and Sustainability Performance”, “Green Procurement and Sustainable performance of SMEs”, “Green practices of SMEs in India”, “Sustainability performance of SMEs in India”. The articles are fetched from Shodhganga reservoir of theses, Journal of Public Procurement, Environment, Development and Sustainability, Environmental and Resource Economics Ecological Economics, Journal of Cleaner Production, Journal of Supply Chain Management, Journal of Industrial Ecology, International Journal of Logistics Management, International Journal of Physical Distribution and Logistics, Sustainability, and other reputed journals. The websites of OECD, Ministry of MSME, District Industrial Corporation and United Nations are also referred for the reports on sustainability. Annual reports of CII, KPMG, PWC, Ernst and Young as well as the articles in the newspaper dailies like the Indian Express and Financial Times are referred. Articles were filtered based on the relevance and a total of 57 articles were finally referred for the study.

## **3. Results and discussion**

### **3.1 Descriptive analysis of the articles**

The distribution of article sources are presented in Figure 1.

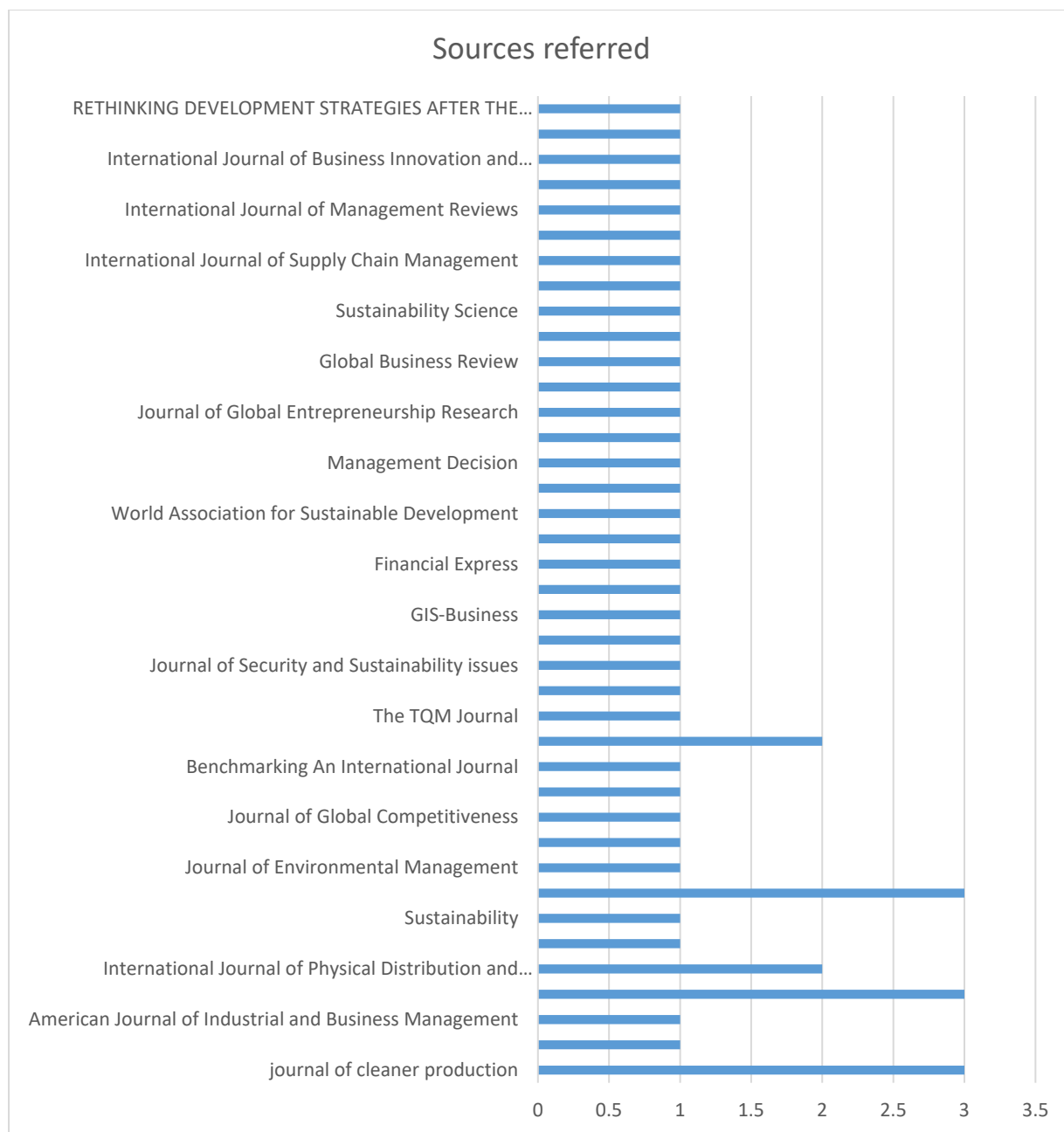


Figure 1. Distribution of the article sources for Literature Review

### 3.2 SMEs in India

Adaptation to globalization is the biggest challenge for MSMEs (Pawar & Sangvikar, 2020) and the researchers have mentioned that MSMEs should adhere and adopt to the quality parameters as per the global standards. Technology adaptation would counter low productivity and make them more competitive like those in countries like China, Indonesia, Thailand and Philippines (Mukherjee, 2018). Although the researcher has highlighted that technological challenge is the biggest one, sustainability challenges are not considered in this article. The economic development and growth of MSMEs have a periodic relationship (Role et al., 2011). According to a report by the Indian Express daily (March 8, 2020), the maximum activity in terms of investments and employment generation have taken place in Pune MSMEs within the state of Maharashtra. Pune houses the automotive sector, heavy engineering companies, construction companies, tools and equipment manufacturing, power and energy, chemicals, pharmaceuticals, plastics and packaging industries as the major sectors that require raw materials, parts, components or sub-assemblies for manufacturing. There are 3047 SMEs in Pune covering the industrial areas of Pimpri - Chinchwad, Bhosari, Chakan, Talegaon, Ranjangaon, Shirwal, Kurkumbh, Parvati and Hadapsar (DIC, Pune 2020 data). Post 2014, following are the schemes that are highlighted in the Annual report of MSME, Government of India, 2020-21.

### **3.3 Sustainability of SMEs**

Sustainability is a way of addressing various business problems (*The Triple Bottom Line: How Today's Best-Run Companies Are Achieving ... - Andrew Savitz - Google Books*, n.d.). The author has also mentioned that only thinking about profits and ignoring the social and environmental issues is a myopic approach because later the social and environmental issues put the businesses at larger risks. The business model canvas is Triple layered, which is more perceived as a revenue model. (Joyce and Paqin, 2016). There is a lot of focus on the environmental and social issues as a result of the rising demand for goods and services (Govindan et al, 2017). Rapid production and consumption has led to natural and man-made disasters like the Chernobyl disaster, Exxon oil spill and Bhopal Gas disaster to name a few. In developed countries, there are stringent environmental regulations but in underdeveloped and developing countries, sufficient action has not been taken so far. Therefore, 'green initiatives' are not given enough priority in businesses.

Sustainable development should be regarded as a multi-dimensional phenomena (Pietrzak & Balcerzak, 2016) as the three concepts of TBL. Corporate Social Responsibility is a very important priority for manufacturing firms which reveals market value, environment management and strategy, pollution prevention, research and development, corporate governance and investor responsibility, all these have been found to be the most pertinent practices in improving the corporate sustainability performance (Goyal et al., 2015) The United Nations Sustainable Development Goals report for 2021 notes that despite the epidemic, the climate crisis, biodiversity crisis, and pollution crisis all still exist. Despite a brief drop in emissions in 2020 as a result of lockdowns and other COVID-19 reaction actions, the primary greenhouse gases continue to rise. The world is still horribly behind schedule in fulfilling the goals of the Paris Agreement. Terrestrial ecosystems are being destroyed at alarming rates, and biodiversity is under decline. Governments and the international community should undertake structural changes and create cooperative solutions based on the SDGs to address the vulnerabilities shown by the epidemic (Gutteres, 2020). The MSMEs can pursue energy-efficient certifications, prioritise energy efficiency across all operations, including maintaining light, heating, and cooling, invest in skill development so that qualified personnel can enable the adoption of clean technology, conduct a basic energy audit and make changes like switching to energy-efficient LED lighting, understand climate risk and incorporate resilience into the company's assets and supply chain, and increase sustainable forest management through responsible sourcing practices. The MSMEs have the opportunity to change their business practices in a way that advances the objectives. Due to factors like a lack of knowledge, a lack of capital, a failure to adapt environmental regulations to the social, economic, and technical realities of local businesses, a lack of effective control mechanisms, a challenge in finding qualified staff, a lack of awareness of environmental issues, and a lack of stakeholder pressure, MSMEs find it difficult to comply with environmental standards. Building MSMEs' capability in these areas is therefore essential to achieving the aim. MSMEs may contribute to reporting on sustainability. Only a small portion of MSMEs now report on sustainability. Only 10% of the total number of sustainability reports included in the Global Reporting Initiative (GRI) Sustainability Disclosure Database in 2015 came from MSMEs, while 90% came from big, international companies. However, all sizes of businesses—micro, small, medium, and large—need to report on sustainability (UNDESA, 2019).

The research about a group of SMEs that were collectively and primarily employed in Pune, India's auto-component manufacturing industry led to the findings that due to a changing business climate, the auto-component SMEs struggle to survive and expand as a result of several obstacles. In order to maintain competitive prices and strict standards for products and delivery times, globalisation is necessary. As a result, the industry that makes vehicle components must contend with economic, social, and environmental issues. (Deshpande & Baporikar, 2013).

A comparison of the sustainability performance of Indian SMEs with that of the other countries was conducted. According to the researchers, there is some research done to understand the financial performance but the economic and social performances are greatly neglected in other studies. Due to this short-sighted approach, SMEs across the world cannot perform within a few years of their incorporation. The SMEs practicing Sustainability practices showed a positive impact on their business growth (Das and Rangarajan, 2020). Profitability of organizations can be sustained for a longer time if economic performance is integrated to the social and environmental performance (Sisaye, 2015). ZED can be a game changer for 'Make in India' campaign and transform India into a global manufacturing hub like China. Companies certified in ZED can avail concessions and subsidies. In the long run, it can reduce energy consumption and the cost of manufacturing. Eco-efficiency refers to an efficient use of natural resources, emission reduction, employment creation, human rights enforcement and charitable donations, which are separately accounted with rising economic sustainability (Hosseini & Farooq, 2019).

The Quality Council of India (QCI) and the Confederation of Indian Industry (CII) jointly launched the national ZED Campaign and ZED Maturity Assessment Module on November 19, 2014, and the Ministry for Micro, Small and Medium Enterprises of the Government of India. The four ZED pillars of green manufacturing, total productive maintenance, total quality management, and environmental sustainability might be applied to processes and products to accomplish ZED (CII, 2014). Future energy use patterns will result in an environmental impact and sustainable development which will be examined on or after both present and future perspectives. Energy use reductions could be achieved by minimising the energy requirements, based on recycling and the use of further green technologies because of the highly polluting nature of chemical products in the region (Y. C. Joshi & Prasad, n.d.) SMEs, which constitute more than 90% of total number of industrial enterprises, are now facing a severe competition from their global counterparts due to liberalization, change in manufacturing strategies, technological changes, and frequent disruptions and uncertain market scenario. (Raju, 2011).

The Economic Times (25<sup>th</sup> February, 2020) reported that it is a myth that sustainability cannot co-exist with economic profitability. MSMEs should adopt to more environment-friendly production methods and government-industry collaborative model just like Germany should be followed. (*MSMEs: A Myth That Sustainability for MSMEs Cannot Coexist with Economic Profitability: Pradeep Mehta, CUTS - The Economic Times*, 2015).

The Financial Express (7<sup>th</sup> November, 2021) also reported that MSMEs should invest in greening of businesses to meet the sustainability goals. Due to obsolete technology, their systems are not energy efficient and face unfavourable economies of scale. Moreover, India is experiencing climate changes like cyclones, floods, heat waves and delayed monsoons. Therefore, there is an urgency to adapt to the SDGs outlined by the UN to tackle the global warming and the climate crisis. Such crisis could lead to the supply chain disruptions, property damages, loss of inventories and increase in operational costs (*Investing in "Greening" of MSMEs Should Be of High Priority for India to Meet Sustainability Goals' | The Financial Express*, n.d.). Similarly, the Indian Express (4<sup>th</sup> October, 2020) reported that the Indian MSMEs will have to adapt to green initiatives because of the global demand for green products like electric vehicles and other energy- efficient products. In next five to six years, MSMEs are projected to contribute 50 per cent to India's GDP and create 15 crore jobs (*Greening MSMEs | The Indian Express*, n.d.).

### **3.4 Sustainability and Green Supply Chain Management (GSCM)**

Supply Chain Management is the integrated planning, co-ordination and control of all business processes and activities in the supply chain to deliver superior consumer value at less cost to the supply chain as a whole whilst satisfying requirements of other stakeholders in the supply chain (Cooper & Ellram, 1993).

Green SCM is about the policies, practices that make companies greener by making shoulder the responsibility of carbon emission, in order to benefit the people, society, natural environment and the business. The functions of GSCM are comprised of Green Procurement, Green Manufacturing, Green Distribution and Green Logistics (Liu et al, 2012).

The scope of GSCM ranges from implementing and monitoring of the general environment management programmes to more generating or controlling practices implemented through various 'R's (Reduce, Reuse, Rework, Remanufacture, Refurbish, Reclaim, Recycle, Reverse logistics, etc.) towards attaining a GSCM waste minimization is being considered as an important strategic decision. The review articles were mainly from Green Operations / Green Manufacturing / Green Logistics or GSCM in general. Although Green Procurement is a part of GSCM, enough articles were not reviewed (Dube, 2016).

In order to achieve organizational sustainability, firms need to pay attention to supply-side practices. Also GSCM must involve collaboration with suppliers in designing green product, providing awareness seminars, and helping suppliers to build their own environmental program (Chin et al., 2015).

The operational challenges confronting the manufacturing SMEs are acknowledged by the Global Competitiveness Index that named South Africa as one of the lowest emerging economies in terms of manufacturing competitiveness and there should be ways of mitigating these challenges in order to boost the survival rate of SMEs in South Africa. GSCM was proposed to be the solution to alleviate the sustainability issues. (Epho & Mafini, 2018). A research on South Korean SMEs reveals that economic and financial results need to be accompanied by the reduction of ecological footprints and increased attention to social aspects of business. Very less studies have been done between SMEs' performance and environmental management. This suggests the need to research further in the green or sustainability of business processes of SMEs (Lee, 2009).

Green purchasing, green information system, and eco-design have a great impact on competitiveness (Reny et al., 2018). The Indian automotive sector has a low level of acceptance of GSCM due to a low level of

understanding of the benefits of GSCM. It increases financial efficiency by minimizing the costs of environmental incidents, scrap resale, reuse of materials, profitability, waste reduction, etc. Green procurement and eco-design are important practices for the automotive industry to reduce carbon emissions. (Vijayvargy et al., 2017). Green supply chain management concept emphasises the significance of cooperating on environmental activities across the supply chain with both consumers and suppliers, which has been shown to boost business performance (Mollenkopf et al., 2010).

Enough research has not taken place in the context of GSCM, especially in the Indian context. Although many empirical studies (case studies, survey-based empirical methods, etc.) have been carried out, they have not actually dealt with each and every aspect of GSCM (Srivastava, 2007). The term 'sustainability' has been inconsistently defined and applied in the extant research. The macro-economic, societal definition of sustainability is difficult for organizations to apply and provides little guidance regarding how organizations might identify future versus present needs. They have defined supply chain risk management as the ability of a firm to understand and manage its economic, environmental, and social risks in the supply chain (Carter & Rogers, 2008). ISO 14001 is mentioned as the most significant green practice (Gandhi et al., 2021). Although waste minimisation is a key environmental performance indicator for industry, the evidence remains mixed with respect to the effectiveness of ISO 14001 in helping firms reduce waste, especially in developing countries. Industrial waste is particularly problematic because of the fact that India lacks enough waste treatment and disposal facilities for the hazardous wastes generated by many manufacturing industries in India. Even though ISO 14000 is known to reduce waste, only little is known about the effectiveness of certified environmental management systems in developing countries in general and in India's SME sector. (Singh et al., 2015).

There has been little to no recognition of the connections between issues like the environment, diversity, human rights, safety, and philanthropy and the fact that these are really parts of the larger, more holistic concepts of CSR in much of the supply chain research that many would consider to be part of corporate social responsibility (CSR) and sustainability (Carter & Rogers, 2008).

### **3.5 Green Procurement and Sustainability Performance**

The phrase "green procurement" is used alternatively with phrases like "sustainable procurement", "eco procurement," and "environmentally responsible procurement" (Bakir, 2013)

Green procurement (GP) reflects efforts to reduce, reuse, and recycle materials. The eco-friendly design instructions could be given to the suppliers that can include the concept of environmental necessities like energy saving, cost reduction, using recyclable items and such initiatives. Green procurement represents an ecologically conscious purchasing initiative that aims to meet the company's eco-friendly goals. (Carter et al., 1998), (Albino & Kabongo, 2009). GP also refers to the selection of contractors, the purchasing of environmentally friendly goods and services, and the inclusion of environmental conditions in contracts. (Nyachombamachira & Juma, 2016), (*Sustainability Concepts: Green Procurement*, n.d.). CIPS has defined Sustainable procurement that supports the sustainability goals of the organisation and optimises the environmental, social, and economic impacts over the life cycle of the product or service. (*Sustainable Procurement | CIPS*, n.d.). According to the BCG report (January 2022), as of November 2021, 92 countries that collectively account for 85% of Green House Gas emissions, have pledged to become net-zero. Therefore, greener public procurement practices can significantly reduce CO2 emissions mainly from the activities of six industries- transportation, defence and security, waste management services, construction, industrial products and utilities (*Your Supply Chain Needs a Sustainability | BCG*, n.d.), (Ciumara & Lupu, 2020). Businesses who engage in green purchasing will place an emphasis on striking a balance between quality, pricing, delivery, and environmental considerations. (Tan et al., 2016). Green techniques including eco-labelling, working with suppliers to meet environmental goals, conducting environmental audits, designing for recycling and reuse, and minimising the use of hazardous materials (Zhu et al., 2007). Utilizing energy-efficient techniques can significantly help reduce expenses by reducing the use of HVAC systems, refrigerators, and cool fluorescent lamps (CFL) (*IBM, GSK, Herman Miller See Healthy ROI From Green Purchasing*, n.d.). Sustainable sourcing must be acknowledged as a critical component of strategic sourcing and as a cost-cutting strategy that adds value, improves firm economics, protects the environment, and improves customer impression of the brand. (Bobis & Staniszewski, 2009). Green procurement also can have positive effects on costs and energy efficiency. (Brindley & Oxborrow, 2014), (Walton et al., 1998), (Zhu et al., 2011).

Businesses would be hesitant to implement environmental measures that raise costs and lower performance. Companies using such environmental policies do better. The focus of this study, however, is exclusively on environmental orientation (Dang & Liu, 2012). For most industrial companies, the primary driver of green purchasing is environmental preservation. Waste management is viewed as a cost-cutting method that

companies may employ to maintain their competitiveness in the global market (Davila et al., n.d.), (Seuring & Müller, 2008).

Governments are beginning to appreciate the advantages of green procurement methods, such as cost savings from decreased energy use, resource use, and material management. (Sarkis & Dou, 2018). Unfortunately, only few studies have examined the direct green activities effects on operational effectiveness. (Jawaad, 2019). Despite the fact that there is generally a wealth of literature on the various dimensions and components of green management as a result of increased interest, particularly in the last decade, some areas still require more study (Appolloni et al., 2015).

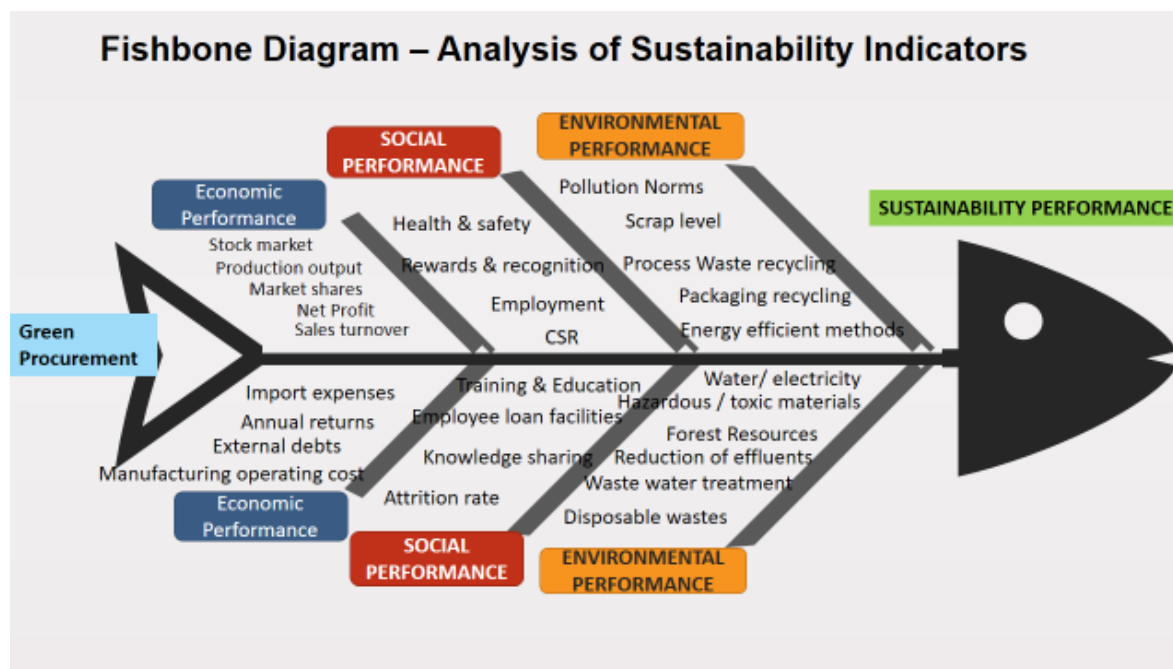


Figure 2. Identification of Sustainability Indicators

As shown in Figure 2, various articles pointed out on the Sustainability Indicators as shown in the fishbone diagram. Table 1, mentioned below also lists out the indicators based on the consolidation of various indicators used in the study of researchers.

Table 1. Sustainability Indicators used by researchers

Sr. No.	Economic Performance Indicators	Social Performance Indicators	Environmental Performance Indicators
1	Stock Market	Health and Safety	Adhering to Pollution norms
2	Production Output	Rewards and Recognition	Scrap level
3	Market Shares	Employment Opportunities	Process Waste Recycling
4	Net Profit	Corporate Social Responsibility	Packaging Waste Recycling
5	Sales Turnover	Training and Education	Energy Efficiency
6	Import Expenses Reduction	Knowledge Sharing	Water / Electricity Usage
7	Annual Returns	Attrition Rate	Use of hazardous / toxic substances
8	External Debts		Use of Forest resources
9	Manufacturing Operating Costs		Reduction of effluents
10			Waste water Treatment
11			Disposable wastes

### 3.6 Green Procurement and Sustainability Performance review outcomes

As shown in Table 2, researchers have tried to determine how the adoption of GP practices has affected Sustainability performance in the literature. There are a total of 48 articles, mentioned below in Table no.1 that examine the influence on sustainability performance. It is categorized into three groups: A. Economic performance, B. Social performance, and C. Environmental performance. The location of the study is also taken as a category.

Table 2. Analysis of articles on the Sustainability Indicators by researchers

Sr. No.	Author(s)	Performance			Location
		Economical	Social	Environmental	
1	Green et al. (1996)			×	UK
2	Carter et al. (1998)	×			USA and Germany
3.	Hanfield et al (1997)	×		×	USA, UK, Japan and Korea
3	Zhu and Geng (2001)	×		×	China
4	Zhu and Sarkis (2004)	×	×	×	China
6.	Walton et al (2002)	×		×	USA
7.	Chen (2016)			×	China
8.	Rao and Holt (2005)	×		×	South East Asia
9.	Zhu et al (2011)	×		×	China
10.	Bu et al (2020)	×		×	China
11.	Liu et al (2020)		×	×	China
12.	Chan et al (2012)	×	×	×	Johor, Malaysia
13.	Mcobrein and Ackah (2019)	×		×	Ghana
14.	Victor and John (2009)	×	×	×	IBM( Global locations)
15.	Carter and Ellram (1998)	×		×	USA
16.	Carter et al (2009)	×		×	USA
17.	Lacroix and Richard (2008)	×	×	×	Greece
18.	Hanson et al (2020)	×	×	×	Germany
19.	Davila et al (2005)	×		×	USA
20.	Dang and Liu (2016)	×		×	China
21.	Mollenkopf et al (2009)	×		×	Literature Review article
22.	Tan et al (2016)	×		×	Malaysia
23.	Malatinec (2017)	×	×	×	Slovak republic
24.	Thanki and Thakker (2016)			×	India
25.	Vijayvargy et al (2017)			×	India
26.	Bag (2012)	×	×	×	South Africa
27.	Chan (2001)	×		×	Hong Kong
28.	Blome et al (2013)	×		×	Europe
29.	Chien et al (2015)	×	×	×	Taiwan
30.	Mafini et al (2018)	×		×	South Africa
31.	Lee et al (2012)			×	Taiwan
32.	Thoo et al (2015)	×	×	×	Malaysia
33.	Mafini and Muposhi (2017)	×		×	South Africa
34.	Oxborrow and Brindley (2014)	×	×	×	UK



35.	Qorri et (2021_	×	×	×	Literature Review article
36.	Jawaad (2019)	×		×	Pakistan
37.	Sezen and Cankaya (2018)	×	×	×	Turkey
38.	Yang et al (2019)		×		China
39.	Song et al (2019)	×		×	China
40.	Ciumara and Lupu (2020)			×	Romani
41.	Ivanova (2019)	×	×	×	Ukraine
42.	Brueckner et al (2002)			×	Germany
43.	Dubey et al (2013)	×		×	Literature review article
44.	Joyce and Paqin (2016)	×	×	×	Nepal
45.	Joshi and Rahman (2015)				Delhi, India
46.	Colbert and Kuruez (2008)		×		UK
47.	Singh et al (2020)			×	Malaysia
48.	Mukherjee (2019)	×	×	×	Chennai, India
	Total (Individual factors)	36	18	44	
	<b>All the three factors considered</b>	<b>12 articles</b>			

#### 4. Further research

Previous research points out that most of the studies have been done on Environmental and the Economic performance, but comparatively less on the Social performance. Although there have been research done on Green Procurement, the researchers have studied this aspect by using different approaches. Some have studied Public Procurement and Sustainability Performance (Gelderman et al., 2017), (Ciumara & Lupu, 2020), and very few have studied all the three aspects– Economical, Social and Environmental together.

The review also highlights that very less research has been done in the Indian context, especially in the city of Pune. Most of the research has been performed in China, USA, UK and Europe. This shows that excluding China, most of the research has been carried out in developed countries. Therefore, there is a huge scope of research in developing countries like India. Secondly, the city of Pune is known for the huge industrial presence in India. The articles on Indian SMEs are mainly based on green practices, green supply chain and researchers have focused mainly on the financial performance of the SMEs as highlighted by Das and Rangarajan (2020). Gujarat (Y. c. Joshi, 2015) and other cities.

Table 1 also indicates that some of the research studied are on Green Supply Chain Management as a whole, the current research is aimed at Green Procurement only to carry out an in-depth study of Green Procurement as the contributing factor to the Sustainability Performance of SMEs.

Further research can be done to understand the sector-wise sustainability performance and also the SMEs in different parts of India. Also a quantitative study on the Sustainability Performance of SMEs in Pune can be conducted to have further in-depth study.

#### 5. Conclusions

The review was an attempt to understand the research conducted on Green Procurement and its impact on Sustainability performance from a local to a global level. It was conducted on selected articles from reputed journals. However, it is evident that very little or no research has been conducted in the Pune city and India as a country. Therefore it highlights the need for further research so that a robust framework can be developed that could help the SMEs to achieve sustainability. This study can prove to be a guideline for sustainability measurement for other researchers.

Considering the current business challenges faced by the SMEs, green procurement can prove to be a contributing factor and a great subject for research in understanding their Sustainability Performance. Also since SMEs are the growth engines of the country, and contribute to the economy of a nation, extensive research should be conducted at all levels.

## References

- Albino, V., & Kabongo, J. *Environmental strategies and green product development: an overview on sustainability-driven companies* Cite this paper Related papers Environment al leaders: making a difference. A t ypology of environment al leaders and recom... Hens Runhaar Creat ing Value wit h Wast es: A Model and T ypology of Sust ainabilit y Wit hin Firm, 2009
- Appolloni, A. ; Sun, H. ; & Jia, F. ; *ORE Open Research Exeter TITLE Green procurement in the private sector: a state of the art review between 1996 and 2013 AUTHORS A NOTE ON VERSIONS Green Procurement in the Private Sector: A State of Art.* 2015
- Bakir, S. *Environmental Orientation of Government Procurement in Singapore.* April, 2013.
- Bobis, V., & Staniszewski, J.. *Making the Case for Sustainable “Green” Procurement,* 2009.
- Brindley, C., & Oxborrow, L. Aligning the sustainable supply chain to green marketing needs: A case study. *Industrial Marketing Management, 43*(1), 45–55. 2014
- Carter, C. R., Ellram, L. M., & Ready, K. J. Environmental Purchasing: Benchmarking Our German Counterparts. *International Journal of Purchasing and Materials Management, 34*(3), 28–38,1998.
- Carter, C. R., & Rogers, D. S. A framework of sustainable supply chain management: Moving toward new theory. *International Journal of Physical Distribution and Logistics Management, 38*(5), 360–387, 2008. <https://doi.org/10.1108/09600030810882816>
- Chin, T. A., Tat, H. H., & Sulaiman, Z.. Green supply chain management, environmental collaboration and sustainability performance. *Procedia CIRP, 26*(June), 695–699, 2015. <https://doi.org/10.1016/j.procir.2014.07.035>
- Ciumara, T., & Lupu, I. Green Procurement Practices in Romania: Evidence from a Survey at the Level of Local Authorities. *Sustainability 2020, Vol. 12, Page 10169, 12*(23), 10169. 2020. <https://doi.org/10.3390/SU122310169>
- Cooper, M. C., & Ellram, L. M. Characteristics of Supply Chain Management and the Implications for Purchasing and Logistics Strategy. *The International Journal of Logistics Management, 4*(2), 13–24, 1993. <https://doi.org/10.1108/09574099310804957>
- Dang, X., & Liu, G. Hilly Region. *China Article in Journal of Environmental Management,* 2012. <https://doi.org/10.1016/j.jenvman.2012.02.023>
- Davila, A., Gupta, M., journal, R. P.-E. management, & 2003, undefined. Moving procurement systems to the internet:: The adoption and use of e-procurement technology models. *Elsevier, 2015.* Retrieved July 6, 2022, from <https://www.sciencedirect.com/science/article/pii/S026323730200155X>
- Deshpande, M., & Baporikar, N. Business policy of pune auto-component smes a case approach. *Competitiveness Review, 23*(4–5), 343–358, 2013. <https://doi.org/10.1108/CR-03-2013-0028>
- Drolet, J. L., & Sampson, T. Addressing climate change from a social development approach: Small cities and rural communities’ adaptation and response to climate change in British Columbia, Canada. *International Social Work, 60*(1), 61–73, 2017. <https://doi.org/10.1177/0020872814539984>
- Dube, A. Analysis of green supply chain barriers using integrated ISM-fuzzy MICMAC approach Performance assesment of green supply chain practice View project Design of off grid solar roof top system View project. *Article in Benchmarking An International Journal,* 2016. <https://doi.org/10.1108/BIJ-06-2015-0057>
- Epoh, L. R., & Mafini, C. Green supply chain management in small and medium enterprises: Further empirical thoughts from South Africa. *Journal of Transport and Supply Chain Management, 12,* 2018. <https://doi.org/10.4102/JTSCM.V12I0.393>
- Gandhi, J., Thanki, S., & Thakkar, J. J. An investigation and implementation framework of Lean Green and Six Sigma (LG&SS) strategies for the manufacturing industry in India. *TQM Journal, 33*(8), 1705–1734, 2021. <https://doi.org/10.1108/TQM-12-2020-0289/FULL/WWW2.DELOITTE.COM/CONTENT/DAM/DELOITTE/US/DOCUMENTS/MANUFACTURING/US-GMCI.PDF>
- Gelderman, C. J., Semeijn, J., & Vluggen, R. Development of sustainability in public sector procurement. *Public Money and Management, 37*(6), 435–442, 2017. <https://doi.org/10.1080/09540962.2017.1344027>
- Goyal, S., Sergi, B. S., General, T., Žemaitis, J., & Goyal<sup>1</sup>, S. Social entrepreneurship and sustainability- Understanding the context and key characteristics Competitive analysis of emerging markets View project SOCIAL ENTREPRENEURSHIP AND SUSTAINABILITY-UNDERSTANDING THE CONTEXT AND KEY CHARACTERISTICS. *Article in Journal of Security and Sustainability Issues, 4*(3), 2015. [https://doi.org/10.9770/jssi.2015.4.3\(7\)](https://doi.org/10.9770/jssi.2015.4.3(7))
- Greening MSMEs | The Indian Express.* Retrieved June 27, 2022, from <https://indianexpress.com/article/opinion/columns/economy-micro-small-and-medium-enterprises-unemployment-6702817/>
- Hosseini, S. B., & Farooq, A. Looking into Sustainability Issues in Indian SMEs through Prism of Zero Effect Zero Defect Strategy. *GIS Business, 14*(5), 29–44, 2019. <https://doi.org/10.26643/gis.v14i5.8617>
- IBM, GSK, Herman Miller See Healthy ROI From Green Purchasing.* Retrieved July 15, 2022, from

- <https://www.environmentalleader.com/2008/05/ibm-gsk-herman-miller-see-healthy-roi-from-green-purchasing/>  
'Investing in "greening" of MSMEs should be of high priority for India to meet sustainability goals' | *The Financial Express*, 2016. ( Retrieved June 27, 2022, from <https://www.financialexpress.com/industry/sme/cafesme/msme-sust-investing-in-greening-of-msmes-should-be-of-high-priority-for-india-to-meet-sustainability-goals/2364371/>
- Jawaad, M. *Improving sustainable development and firm performance in emerging economies by implementing green supply chain activities*. July 2018, 1–14, 2019. <https://doi.org/10.1002/sd.1962>
- Joshi, Y. c. *Sustainable development of micro, small and medium enterprises (msmes) in gujarat, india*. 275–285, 2015. <https://doi.org/10.47556/B.OUTLOOK2015.13.25>
- Joshi, Y. C., & Prasad, K. S., A STUDY OF ENGINEERING SMEs IN GUJARAT: PROSPECTS OF SUSTAINABILITY AND CHALLENGES TO GLOBALISE IN THE WAKE OF MAKE IN INDIA INITIATIVE. *Amity Journal of Management Amity Business School*, IV(2), 2020.
- Lee, K. H. Why and how to adopt green management into business organizations?: The case study of Korean SMEs in manufacturing industry. *Management Decision*, 47(7), 1101–1121, 2009. <https://doi.org/10.1108/00251740910978322>
- Ministry of Micro, Small & Medium Enterprises., Retrieved January 19, 2022, from <https://msme.gov.in/>
- Mollenkopf, D., Stolze, H., Tate, W. L., & Ueltschy, M., Green, lean, and global supply chains. *International Journal of Physical Distribution and Logistics Management*, 40(1–2), 14–41, 2010. <https://doi.org/10.1108/09600031011018028>
- MSMEs: A myth that sustainability for MSMEs cannot coexist with economic profitability: Pradeep Mehta, CUTS - *The Economic Times*., 2016 Retrieved June 27, 2022, from <https://economictimes.indiatimes.com/small-biz/sme-sector/a-myth-that-sustainability-for-msmes-cannot-coexist-with-economic-profitability-pradeep-mehta-cuts/articleshow/74297037.cms>
- Mukherjee, S. Challenges to Indian micro small scale and medium enterprises in the era of globalization. *Journal of Global Entrepreneurship Research* 2018 8:1, 8(1), 1–19, 2018. <https://doi.org/10.1186/S40497-018-0115-5>
- Nyachombamachira, T., & Juma, D. Factors affecting implementation of green procurement in Kenya: A case study of Coca-Cola Bottling Limited Nairobi. *International Journal of Scientific and Research Publications*, 6(10), 106, 2016. [www.ijsrp.org](http://www.ijsrp.org)
- Pawar, A., & Sangvikar, B. *Understanding the SME : Role and Distribution in India*. Marc, 2020.
- Pietrzak, M. B., & Balcerzak, A. P. Assessment of socio-economic sustainability in new European Union members states in the years 2004-2012. *The 10th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena*, 120–129, 2016.
- Purvis, B., Mao, Y., & Robinson, D. Three pillars of sustainability: in search of conceptual origins. *Sustainability Science*, 14. <https://doi.org/10.1017/s0376892900011449>
- Raju, D. K. D. Small and Medium Enterprises (SMEs) in India: Past, Present and Future. *SSRN Electronic Journal*, 1–21, 2011. <https://doi.org/10.2139/ssrn.1080505>
- Reny, A., Ananda, W., Astuty, P., & Nugroho, Y. C. Role of Green Supply Chain Management in embolden Competitiveness and Performance: Evidence from Indonesian Organizations. *Int. J Sup. Chain. Mgt*, 7(5) , 2018. <http://excelingtech.co.uk/>
- Role, T., Ensuring, I. N., Development, E., & By, C. *MSME ' S AND THEIR ROLE IN ENSURING SUSTAINABLE*. 2001, 41–52, 2011.
- Sarkis, J., & Dou, Y. Green Procurement and Purchasing. *Green Supply Chain Management*, August, 46–69, 2018. <https://doi.org/10.4324/9781315233000-3>
- Seuring, S., & Müller, M. From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, 16(15), 1699–1710, 2008. <https://doi.org/10.1016/j.jclepro.2008.04.020>
- Singh, M., Brueckner, M., & Padhy, P. K. Environmental management system ISO 14001: effective waste minimisation in small and medium enterprises in India. *Journal of Cleaner Production*, 102, 285–301, 2015. <https://doi.org/10.1016/J.JCLEPRO.2015.04.028>
- Sisaye, S. Ecology, sustainable development and accounting. *Ecology, Sustainable Development and Accounting*, 1–226, 2015. <https://doi.org/10.4324/9780203440865>
- Srivastava, S. K. Green supply-chain management: A state-of-the-art literature review. *International Journal of Management Reviews*, 9(1), 53–80, 2007. <https://doi.org/10.1111/j.1468-2370.2007.00202.x>
- Sustainability Concepts: Green Procurement*. Retrieved July 1, 2022, from <https://www.gdrc.org/sustdev/concepts/14-gproc.html>
- Sustainable Procurement | CIPS* Retrieved March 17, 2022, from <https://www.cips.org/knowledge/procurement-topics-and-skills/sustainability/>
- Tan, C. L., Zailani, S. H. M., Tan, S. C., & Shaharudin, M. R. *The impact of green supply chain management*

- practices on firm competitiveness*. International Journal of Business Innovation and Research, 2016. <https://doi.org/10.1504/IJBIR.2016.079507>
- The Triple Bottom Line: How Today's Best-Run Companies Are Achieving ... - Andrew Savitz - Google Books*. Retrieved January 24, 2022, from <https://books.google.co.in/books?hl=en&lr=&id=qXIBAQAQAQBAJ&oi=fnd&pg=PA1&dq=savitz++sustainable+measurement+chart&ots=x5ocfePWoc&sig=Llh1eLgUCs0YoF1g0WzClrgEZCs#v=onepage&q&f=false>
- Unctad. *RETHINKING DEVELOPMENT STRATEGIES AFTER THE FINANCIAL CRISIS – Volume II: Country Studies and International Comparisons*, 2021.
- UNDESA. Micro-, small and medium-sized enterprises (MSMEs) and their role in achieving the Sustainable Development Goals. *United Nations Department of Economic and Social Affairs Division for Sustainable Development Goals*, 1–42, 2019. [https://sustainabledevelopment.un.org/content/documents/26073MSMEs\\_and\\_SDGs.pdf](https://sustainabledevelopment.un.org/content/documents/26073MSMEs_and_SDGs.pdf)
- Vijayvargy, L., Thakkar, J., & Agarwal, G. Green supply chain management practices and performance: the role of firm-size for emerging economies. *Journal of Manufacturing Technology Management*, 28(3), 299–323, 2017. <https://doi.org/10.1108/JMTM-09-2016-0123>
- Walton, S. V., Handfield, R. B., & Melnyk, S. A. Green supply chain: Integrating suppliers into environmental management processes. *Proceedings - Annual Meeting of the Decision Sciences Institute*, 3, 1114–1116, 1998. <https://doi.org/10.1111/J.1745-493X.1998.TB00042.X>
- Your Supply Chain Needs a Sustainability | BCG*. Retrieved March 19, 2022, from <https://www.bcg.com/publications/2020/supply-chain-needs-sustainability-strategy>
- Zhu, Q., Geng, Y., & Lai, K. Environmental supply chain cooperation and its effect on the circular economy practice-performance relationship among Chinese manufacturers. *Journal of Industrial Ecology*, 15(3), 405–419, 2011. <https://doi.org/10.1111/J.1530-9290.2011.00329.X>
- Zhu, Q., Sarkis, J., & Lai, K. Green supply chain management: pressures, practices and performance within the Chinese automobile industry. *Journal of Cleaner Production*, 15(11–12), 1041–1052, 2007. <https://doi.org/10.1016/J.JCLEPRO.2006.05.021>

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