

Barriers and Challenges for Green Garment Factory: India

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Abstract- Green Garment factories are becoming widely accepted worldwide due to their numerous benefits. Countries like Bangladesh and Sri Lanka have turned into a global player in the apparel production and exports, becoming a major supplier for many leading fashion brands, by adopting Green concepts in their production. Although Indian Government provides several incentives and schemes to uplift Green factories in the country, India is lagging behind its neighboring countries due to a number of barriers and challenges which has been discussed in this paper.

Keywords— Sustainability, Green building, Clean Production, LEED, GRIHA, Green Garment Factory Barrier

I. INTRODUCTION

Sustainable Manufacturing is the creation of manufactured products through economically-sound processes that minimize negative environmental impacts while conserving energy and natural resources. Companies are pursuing sustainability practices to reduce waste and cost, improve sales and brand recognition, to increase growth and global competitiveness, respond to regulatory constraints and opportunities, greater access to financing and capital, easier employee hiring and retention.¹

Green Garment Factory is defined by sustainable manufacturing of garments. It is a system that integrates green buildings and green production practices (clean production), CSR activities, as well as social and economic benefits². It reduces the consumption of natural resources and the environmental impact of factory buildings during construction, operations, as well as all stages within their product lifecycle, creating eco-friendly industries and products to achieve the goal of creating low-carbon emission and low-energy usage industries.



Fig: 1 Components of Green Factory

I. Green building

Green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation, and deconstruction. Green building primarily focuses on reducing the overall impact of the built environment on human health and the natural environment.³

II. Clean production

According to UNEP, the last definition for Cleaner production is defined as “The continuous application of an integrated environmental strategy to processes, products, and services to increase efficiency and reduce risks to human and the environment”.⁴

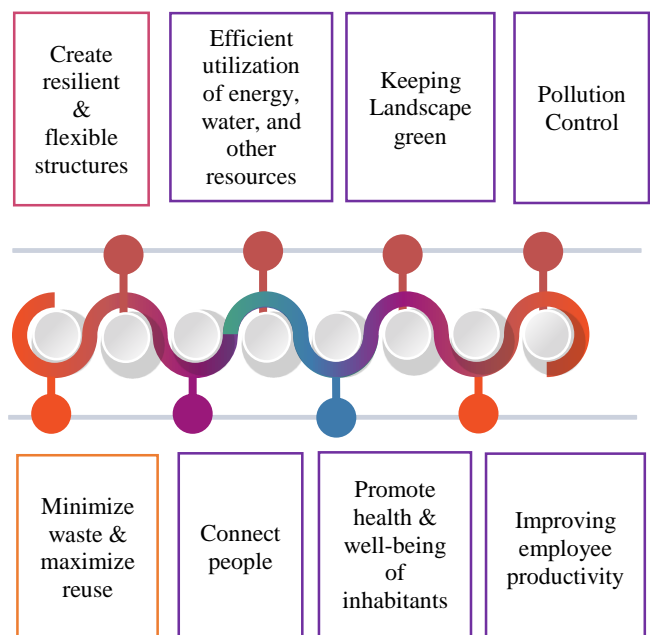


Fig: 2 Components of Green Factory

¹(Sustainable Manufacturing: EPA, n.d.)

²(What is Green Factory?, n.d.)

³ (Green Building Basic Information, 2016)

⁴(United Nations Environment Programme (UNEP) - Cleaner Production, n.d.)

Benefits of a Green garment factory

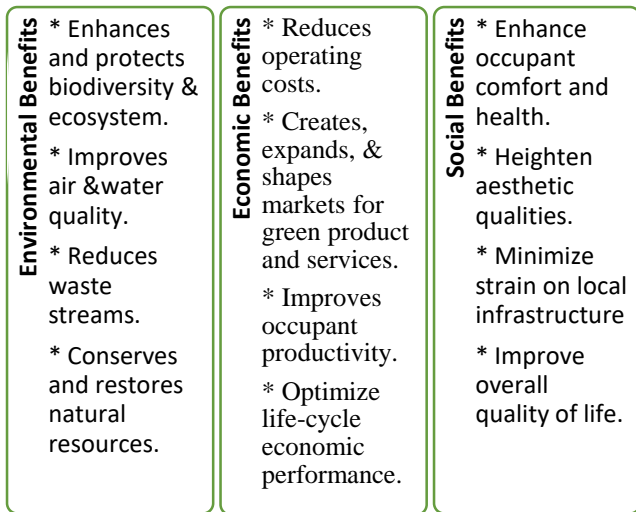


Fig: 3 Benefits of Green Garment Factory (Emily Darko, *Green building: case study*, Oct 2013)

II. LITERATURE REVIEW

Green Garment Factory: Indian Scenario

Although there are significant benefits of Green Garment factory, there are only 13 LEED certified buildings related to garment industry in India among which Evolve Clothing Company Pvt. Ltd. Factory building (Kanchipuram) is the only factory to achieve the Gold rating under LEED BD+C category.

Apart from these certifications India's leading garment manufacturers such as Laguna clothing,⁵ KG denims,⁶ Gokaldas Exports,⁷ Orient craft,⁸ Aquarelle India Pvt. Ltd⁹ etc. are continuously working in direction of sustainability.

The objective of this paper is to study the barriers and challenges faced by Garment Industry in India which hinders the development of Green Garment Factory in the country. The research is an exploratory type research and the source of information is through an extensive review of secondary data.

Barriers and Challenges for Green Garment Factory in Indian:

The barriers and challenges faced by Garment Industry in India that hinders the development of Green Garment Factory in India can be broadly classified into Internal Barriers and External Barriers.(Tao, 2016)

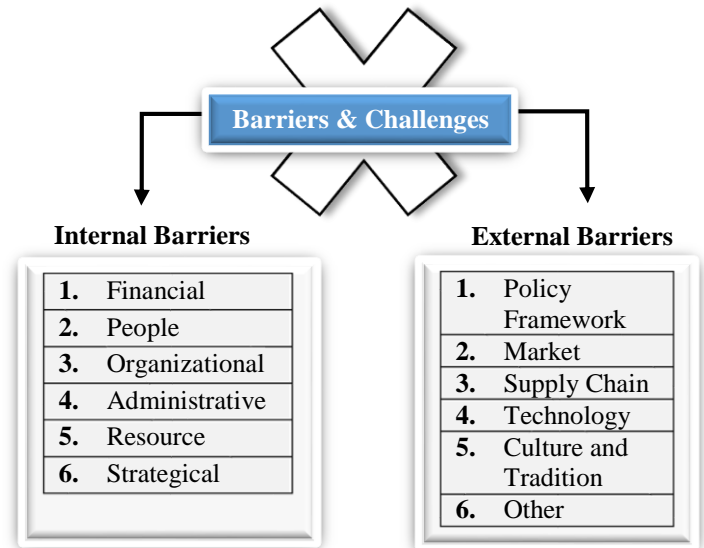


Fig: 4 Internal and External Barriers for Green garment factory in India

A. Internal Barriers

I. Financial

▪ Misconception about being expensive

A major part of the public is more concerned about the costs of garments than the sustainable path through which it is produced, and they seem less aware of longer-term savings from Green practices. There is a misconception that green construction is prohibitively expensive. (Emily Darko, *Green Building: Case Study*, October 2013)

▪ Unable to foresee any implied benefits at an early stage

Historically, the cost has been used as the prime performance measure. Usually, high cost is a big pressure in Green Factory as compared to the traditional garment factory. The initial investment requirement by green methodologies such as green design, green manufacturing, green labeling of packing etc. are too high. (Barshilia, May 2014)

▪ Lack of financial Resources/budget and Cost of Implementation of Green Features

Engaging in environmental management involves two types of costs, direct cost and transaction cost. Both types of costs are likely to constitute a significant barrier to build a Green Factory. IT enablement, Technology advancement adoption, hiring good quality of employees, motivating and training of employees towards Sustainable garment production will require high initial investment.(Tao, 2016) (Gaur, 2015)

⁵ (Home>sustainability: Laguna-clothing)

⁶ (csr-activities: KG Denims)

⁷ (CSR: Gokaldas exports)

⁸ (SOCIAL AND ENVIRONMENTAL CERTIFICATIONS: Orientcraft)

⁹ (Sustainability: AQUARELLE GROUP)

- *Viewing initiatives as cost centers & failure to assess them as business opportunities.*

This calls for a major transformation which to succeed, requires a systematic approach and a framework addressing the principal impediments to decisive action. (Arindam Bhattacharya, March 2011)

II. People

- *Awareness and understanding of benefits*

There is limited knowledge amongst the general population in India of issues around Green garment factory and the availability of green products. When there is awareness, there is limited understanding of the potential cost savings over the longer term. The lack of empirical evidence on the costs and savings associated with green buildings makes it more difficult for people to assess the economic case for their uptake. (Emily Darko, *Green Building: Case Study*, October 2013)

- *Lack of management commitment*

Management support is a critical element of adoption and implementation of innovations in an organization, especially environmental systems. Top management support can affect new system initiatives success by promoting employee empowerment, by facilitating employee involvement by promoting a cultural shift and increased commitment by the organization's employees, by instituting rewards and incentives systems to affect employee behavior, by providing training and increasing communication across units and encouraging teams and teamwork in the organization. (Tao, 2016)

- *Lack of capacity and skills*

The lack of technical capacities. There are not enough technical experts and masons qualified to construct Green factories. In India, about 12 million people join the workforce each year, of whom only 4 million are skilled workers. Only 6% of employees have the benefit of proper training and skills. Moreover, it is hard to find workers who are knowledgeable about Green building practices and sustainable production. (Emily Darko, *Green Building: Case Study*, October 2013)

- *Lack of awareness programs conducted locally*

Although few in number, various seminars, and workshops for sustainability and Green productions are conducted time to time at different parts of the country. But, people fail to attend them due to lack of awareness, effectiveness or reach. (A.K. Kulatunga, 2013)

- *Lack of Management Initiatives for Transport and Logistics*

The impact of green logistics involvement on supply chain strategies should be one of the main focuses on this time. The

pressure on timely delivery of a product is very important and because of this logistics related issues focus on timely delivery due to this attention on the environmental issue related to transportation were left. (Gaur, 2015)

- *Negative attitudes towards sustainability concepts and less support from the employees*

Garment industry employees are paid lesser salaries and wages. They generally lack awareness and willingness to indulge in Green initiatives. No additional bonus or appraisal is provided to employees if they perform towards sustainability. (A.K. Kulatunga, 2013)

- *Discouragement to designers*

Sites often discourage designers who try to incorporate green features, precisely due to the lack of green planning. (Emily Darko, *Green Building: Case Study*, October 2013)

- *Green manufacturing is viewed as a luxury market.*

Companies generally avoid investment in Green practices as they consider them a luxury market which companies undertake to attract more customers. Since they are hardly able to meet their targets, they hesitate to invest in Green manufacturing. (Emily Darko, *Green Building: Case Study*, October 2013)

- *Lack of awareness sustainability concepts*

There is no strict definition of a Green garment factory. This means that factories could be marketed as green in spite of the fact that they do not actually abide by the standards expected, and will thus not deliver the expected benefits. (A.K. Kulatunga, 2013)

III. Organizational

- *Lack of Internal Sustainability Audits within the Organization*

Previous research has made predictions for supply, but not specifically for the sustainable production. For example, five-year forecasts for supply shows academics have been making some effort to try to look ahead. Studies have brought practitioners and academics together to try to predict the future of purchasing and supply 20 years into the future. Predictions for the future of consumer demand for environmentally products exist. It reflects the integration of all internal departmental issues related to the coordination of the Green Supply Chain Management barriers implementation in north Indian small-scale industry. (Gaur, 2015)

- *Organizational Reluctance and Lack of managerial knowledge*

There is a reluctance from the organizational side due to various reasons which may be lack of support, commitment, budget, managerial knowledge or unwillingness to take extra efforts. (Tao, 2016) (Suman Mazumder, June-2013)

- *Lack of training in sustainable supply chain methods*

Training and education are the prime requirements for achieving successful implementation of Green garment factory. Lack of training in Sustainable production is one of the essential barriers to developing Green garment factory in India. Apart from the issue of shortage of workers, the training capacity of the country is also inadequate. Only about 500,000 people each year obtain training, which is very low compared to the requirement of 3.5 million trained and certified workers. (Tao, 2016)

- *Difficulty for operation and maintenance*

Incorporation of green features in manufacturing requires a huge commitment to operation, maintenance, updating and, innovation. (Tao, 2016)

- *Poor Organizational Culture in Green Factories*

Informal linkages and improved communication help the organizations to adopt Green's practices. Training and education are the prime requirements for achieving successful development of Green factory. Management may encourage employees to learn green information. Organizations may provide rewards for green employees. Employees may be helped when they face green problems and may be provided support to learn green information. (Gaur, 2015)

- *Lack of Energy Management and Waste Management of the Organization*

Innovative green practices involve hazardous solid waste disposal, energy conservation, reusing and recycling of materials. Innovative green practices promote innovative design, new market opportunities and make their quality better than others. However, due to market competition and cost implications, organizations try to save cost. (Gaur, 2015)

- *Drawback of Small Organization*

Developing green garment factory is demanding on financial and human resources which smaller organizations might not have sufficient resources for. (Emily Darko, *Green Building: Case Study*, October 2013)

IV. Administrative

- *Capabilities within purchasing and supply function and Reliance on traditional accounting methods*

Lack of understanding of how to incorporate in purchasing and reliance on traditional accounting methods which results in difficulties for companies to justify their investments in implementing Green supply chain. (Tao, 2016)

- *No performance measurement methods*

Although there are few sets of rules and regulations required to be followed to achieve green factory label, no measurement

tool provides the current performance level of the company. (Tao, 2016)

- *Lack of supportive corporate structures and processes*

Lack of information and technological systems, lack of supportive corporate structures and processes and lack of environmental professional knowledge for managers all require resources to make improvements. (Tao, 2016)

- *Difficulty in documentation*

Certification companies require sets of documents to be submitted while applying for the Green factory certificate. This acts as a hindrance since the documentation process is time taking and complex. (Barshilia, May 2014)

- *Exemplary performance not easily achievable*

It is difficult to achieve points under Innovation in Design. (Barshilia, May 2014)

V. Resource

- *Lack of environmental professional knowledge*

There is lack of qualified & trained professionals in environmental knowledge who can provide assistance. (Tao, 2016)

- *Lack of Acceptance of Advancement in New Technology*

Technology is a kind of knowledge. An organization will have a higher innovative capability when knowledge can be shared more easily within the organization. An organizational barrier means difficulty of implementing fundamental change in the organization. This is especially true when there are changes in the core features of organizations like organizational goals, forms of authority, core technology, operational strategy and market strategy. (Gaur, 2015)

- *Lack of Skilled HR Professionals in Sustainability*

A Company with a higher quality of human resources such as better training or education will help in implementing Green Supply Chain Management. Quality human resources can provide new ideas for companies, learn new technologies easily, share knowledge with each other and use new technologies to solve the problem. However, due to financial constraint; quality of human resources is a barrier. (Gaur, 2015)

- *Lack of information and standardization of alternate materials & technology*

The market for alternate materials & technology still requires standardization and innovation. There is a lack of awareness and decisive factors which will help the customers. (Emily Darko, *Green Building: Case Study*, October 2013)

VI. Strategical

- *Non-alignment with other SCM priorities*

Green manufacturing is not aligned with other Supply chain management priorities, for example, a focus on cost reduction or other financial, technical, information related goals; acts as a barrier. (Tao, 2016)

- *Green initiatives not integrated into corporate strategy*

The companies that adopt Green initiatives perform these activities as peripheral to their core business and not integrated into their corporate strategy. Hence the execution is flawed and they fail in realizing the full benefits. (Arindam Bhattacharya, March 2011)

B. External Barriers

I. Strategical

- *No tax benefit or other rewards from government*

If the government offers incentives to companies for more sustainability, it will encourage Green factory, but if government regulations make sustainable initiatives less profitable or difficult to realize, they can be identified as barrier. (A.K. Kulatunga, 2013)

- *Lack of Professional Treatment & Long-Term Contracts for Adopting Green Manufacturing Government*

Government Rules & legislation is a major driver for company's environmental management. Regulations increase the threats of penalties and fines for non-compliance among companies. This driver is most helpful for implementing and adoption of Green Supply Chain Management in Manufacturing Industries. Lack of professional treatment and long-term contracts for adopting GSCM from the government have demotivated the organization for implementing the Green garment manufacturing in India. (Gaur, 2015)

- *Weak and inconsistent enforcement of government*

Although the national policy intent is clear, its application at the state and city level is not consistent. While some states have opted to incorporate certain features, this is not uniform across the country. (Emily Darko, Green Building: Case Study, October 2013)

- *Lack of Industrial Training Institutes*

Only a few relevant trades are offered by the Industrial Training Institutes. The technical training of engineers is not organized on a regular basis and it is hard to obtain industry-sponsored apprenticeships. The government and the industry need to collaborate to promote the training and skill-upgrading of the workforce and to explore the financial options to do so. (Emily Darko, Green building: case study, Oct 2013)

II. Market

- *Pressure from competitors*

If there is competition for lower prices, it is likely to hamper green garment factory setup in India. (Tao, 2016)

- *Customer desire for lower prices*

Conventional, less environmentally friendly raw materials, production methods and the production in offshore, low labor cost countries usually are less expensive than more sustainable alternatives. (Tao, 2016)

- *Global aspects*

Global aspects such as language barriers and cultural barriers can impede communication as well and lead to misunderstandings and different perceptions of the given instructions. (Tao, 2016)

- *Uncertainty and Competition in Market*

In today's scenario market uncertainty is in today's scenario market uncertainty is very high due to global competitiveness, and customer's requirements. The external environment in which a firm conducts its business will also influence the innovative capability as well as intention to adopt innovations. We consider that market uncertainty and competition is a very important barrier to achieve GSCM in north Indian small-scale industry. (Gaur, 2015)

- *Customer's Unawareness towards GSCM Products and Services*

Customer's unawareness towards GSCM products and services is that driver of Green Supply Chain Management which states that the understanding and knowledge that a buyer should have of his rights as a customer. A major barrier of GSCM seen in north Indian small-scale industry is lack of awareness of customers about the benefits of green products. Customer demands become the most crucial type of external pressure. Customer's awareness means if a customer demands green products; the company has to change technology and organization for innovative green products. (Gaur, 2015)

- *Lack of green Architects, Consultants, Green Developers, Contractors in the Region*

Lack of green architects, consultants, green developers, contractors in the region is that driver of Green Supply Chain Management which is adversely affect at the rural area because most of the architects, consultants, green developers, and contractors are interested to work in urban area because in urban region are good for their professional and family responsibility point of view. (Gaur, 2015)

III. Supply Chain

- *Supplier's Flexibility to Change towards GSCM*

Suppliers Pressure and willingness can help to provide valuable ideas used in the implementation of environmental projects, but they generally do not act as a direct driving force. However, whilst suppliers may not be the drivers, integration, and cooperation in supply chains can support more effective management of environmental issues. Suppliers' reluctance to change towards Green garment factories is due to traditional mindset and suppliers' interests being different from those of the total network. (Gaur, 2015)

- *Poor supplier commitment*

Poor supplier commitment as one of the most important external barriers of developing Green garment factory because it is very difficult for a company to maintain a Green supply chain if their suppliers – for example for financial reasons – cannot or do not want to take part in green initiatives. (Tao, 2016)

- *Lack of awareness of local customers in green products*

Suppliers providing green technological solutions are often not able to find customers due to lack of awareness and insufficient promotion of their products. (A.K. Kulatunga, 2013)

- *Poor Implementation of Green Practices within a Supply Chain*

Innovative green practices involve hazardous solid waste disposal, energy conservation, reusing and recycling of materials. Innovative green practices promote innovative design, new market opportunities and make their quality better than others. However, due to market competition and cost implications, organizations try to save cost. (Gaur, 2015)

IV. Technology

- *Information and Communication Technology and Technological constraints (ICT)*

Information and Communication Technology (ICT) and other Technological Constraints such as outdated machinery at suppliers' facilities can make it difficult to fulfill the requirements of GSCM and communicate flawlessly. (Tao, 2016)

V. Culture and Tradition

- *Language and cultural barriers*

Few companies hesitate to incorporate new technologies due to resistance to change in the traditional model. Language differences and resistance to follow western traditions pose as a barrier for Green garment factory setup in India. (Tao, 2016)

VI. Other

- *Insufficient Pressure from investors and NGOs*

Many companies are not dramatically changing to more sustainable environmental practices despite pressure from the investment community. (Tao, 2016)

III. CONCLUSION

The barriers and challenges faced by the Indian garment industry for the development Green factory can be broadly classified into Internal and external barriers. The internal barriers mostly relate to lack of awareness, skill sets, strategies, financial budget and lack of commitment by Organization. Whereas the external barriers are more to do with Policies, Market condition, Supply Chain and the Traditions.

But the Central government is providing fast environmental clearance for IGBC and GRIHA pre-certified projects and reimbursement of registration cum rating fee based on stars provided. State governments are providing additional FAR in cities like Noida, Kolkata, Jaipur, and Punjab. ICICI Bank, IDBI Bank, IL & FS, IREDA, SBI and YES Bank are the key banks providing one or more of the above financial assistance to green rated buildings in terms of Lower margins, Interest rate and reduced processing fee and higher repayment tenure for the Green rated building. In spite of all these drivers for the green factory, India has not been able to fight the above-mentioned barriers which need to be addressed for a cleaner and greener garment production in the country.

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