

Green Innovation Practice For Organizational Performance And Sustainable Development

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Abstract

Many companies all over the globe are adopting environmental management techniques that incorporate all types of green solutions as part of their present efforts to ensure survival and sustainability. While some common tools and knowledge may be used to monitor, track, and assess these green components in a linked element, they are usually managed on a piecemeal basis and under multiple management standards; and they are most typically managed as ad-hoc initiatives rather than programmes. To date, two primary stakeholders—management and customers—have exerted pressure on the company to implement sustainability measures. As a case study, this concept paper examines one organization's use of green management and sustainable green practises. It asserts that management has a responsibility to play in reducing negative sustainability consequences. Two theoretical lenses were offered to provide significance to the study, however further research is needed to back up the conclusions of this work.

Keywords: Green Innovation, Sustainable Development, Industry 5.0, Energy-Efficient

Introduction

Our civilization is advancing at a breakneck speed as a result of globalisation, privatisation, and liberalisation, and it is experiencing challenges as technology replaces nature. Furthermore, unsustainable growth is contributing to the mismanagement of social and natural resources in society. These changes are presenting a serious danger to the environment, with the outcome of rising global temperatures. Even more disturbing is the fact that human acts such as the usage of fossil fuel, deforestation, and the destruction of natural habitats are eroding our hopes for a better future. All human activities have an adverse

effect on the environment due to the replacement of natural processes and procedures by science, technology, and machinery, necessitating an immediate response from mankind. Our way of life is changing, as is the way we go about our everyday tasks and the surroundings we live in. It is now vital to become green not just on a personal level, but also on a corporate one. To realise the ideal of a better society, it is vital to alter current business methods in order to promote long-term growth. The most efficient use of resources is the foundation of sustainable development. Organizations must operate in an ecologically responsible manner in the current

day, and individuals must realise the need of transitioning from machines to green methods, as the future belongs to a green economy. Organizations should be aware of their social responsibilities and take all reasonable steps to decrease the effect of their operations on the environment, as well as endeavour to reduce carbon footprints in any way feasible. Traditional management approaches did not take into consideration the environmental aspects of nature, and as a result, they are being phased out in favour of green management.

Although greener ways assist the environment and society as a whole, companies are discovering that adopting these practises not only increases customer loyalty and public image, but it also provides them with a competitive advantage. In both rich and developing nations, environmental issues and environmental sustainability have lately gained momentum on a personal and organisational level. To put it simply, the existence of future generations might be at jeopardy if we don't take action to reduce our carbon footprint and resource waste. By implementing environmentally-friendly practises, organisations are able to retain their best workers while saving money. This is according to research.

Literature survey

Since the 1970s, the expenses of environmental protection for businesses have risen dramatically and are likely to continue to rise (Christmann, 2000). It suggests that a firm's competitive position is influenced by cost-effective green management practises. As a result, environmental research has broadened from a restricted emphasis on pollution reduction to green management approaches (Klassen and Whybark, 1999). Green management methods, according to the environmental management literature (Shrivastava, 1995), may help businesses improve their competitiveness while also reducing the negative consequences of their operations on the environment (GMP). Firms cannot ignore the concerns of environmental and economic performance. For businesses to obtain a competitive edge, including environmental issues into management procedures has become more vital. Due to "a perceived lack of evidence that the benefits of pursuing these initiatives exceed the expenses

of pursuing these projects," many organisations are still reluctant to pursue a more extreme stance to GMP adoption (Montabon et al., 2007). Examining performance enhancement prospects via GMP adoption is necessary. The goal of this research is to create a GMP model that includes both GMP features and performance results. The scenario of a container terminal operator is chosen to demonstrate the use of the suggested GMP model.

In the context of container shipping, a container terminal is an essential piece of transportation infrastructure (Lun et al., 2010). A container terminal is a transportation centre that connects highways, railroads, and inland canals (Lun et al., 2008). Distribution centres for container supply networks have evolved from cargo handling facilities to distribution centres with physical infrastructure (Almotairi and Lumsden, 2009). Consequently, the container terminal functions as a crossroads between production and consumption, attracting the attention of shipping and transportation industry players (Song et al., 2010; Ugboma et al., 2009). As part of the global container transportation network, container terminals link shippers, shipping lines, and intermodal transport providers (Lun and Browne, 2009). Everything from accepting containers to loading them onto ships to dispatching and unloading containers is in the hands of container terminal operators. Ship stowing is only one of several design operations carried out by container terminal operators. Others include yard layout and quayside layout. The goal of this research is to provide a GMP model to illustrate GMP adoption and investigate its correlation with performance, given the academic and practical relevance of building a GMP in the container transportation sector. Understanding GMP adoption is critical for a variety of reasons.

First, it is suggested that while implementing environmental policies, greater attention should be given to the external issues impacting the operations of businesses. For example, the concept of 'environmental product differentiation' suggests that a firm's ability to obtain differentiation advantage is contingent on external factors such as industry structure (Reinhardt, 1998). This research looks at not just collaborating with supply chain partners,

but also integrating internal environmental operations to obtain a competitive edge. Second, the environmental management literature suggests that applying GMPs may help businesses improve their performance while also reducing the harmful consequences of their operations on the environment (Shrivastava, 1995). However, the present study offers little insight into how businesses manage GMP to reach intended outcomes. This research provides a GMP model to demonstrate the major features of GMP and investigate the relationship between GMP and company performance. Third, many companies' executives must make a strategic choice regarding whether or not to implement GMP (Darnall and Edwards, 2006). Decision makers may be able to examine their company operations and generate internal support for GMP adoption by knowing the essential features of GMP and their effects on firm performance. Fourth, there has been a lot of discussion on how to apply sustainability to company strategy (Sharma and Henriques, 2005). However, research on the firm performance of container terminal operators' 'best practises' on GMP has so far been disregarded. This paper employs case study research to demonstrate the desired performance consequences of GMP adoption from the standpoint of container port operations.

Green Invention refers to all sorts of innovation that limit environmental harm and guarantees that natural resources are utilised in the most efficient manner possible. It's one such approach that increases a company's competitiveness, economic and environmental performance. Reduced energy consumption, waste recycling, pollution management, resource sustainability, and green product design are all considerations to consider.

Green innovation generally separates itself from non-green inventions as it contains the following characteristics:

- It lowers negative environmental effect.
- The aim of innovation is a product, a technique, a service, or a system.
- It satisfies client expectations while being competitive on the market.

- It evaluates and innovates the complete product life cycle to provide a green solution.
- Economic or environmental factors behind it.

Types of Green Innovation

Depending on the style of implementation and the prospective repercussions, Catherine A. Ramus classed green innovation into three groups. These are:

- Green innovation that decreases a company's environmental effect. (Via re-usage and recycling of items)
- Green innovation that handles the company's environmental challenges. The use of dangerous components may be reduced (as a result)
- The development of ecologically friendly goods and processes via green innovation. utilising less energy or resources
- Examples of Eco-Friendly Innovation
- Businesses of all sizes have been compelled to become green due to shifting market conditions and client preferences. Some prominent instances of green innovation may be found in practically every area, but here is a list of the best.

Importance of Green Innovation

Why do corporations seek to migrate towards green innovation? This is not simply a consequence of tough regulations or market pressure but also because establishing environmental management practices gives a myriad of options for the firms.

It promotes economic and social performance via a decrease of waste, expense, and other inefficiencies. It draws new consumers. According to the Nielsen Global Corporate Sustainability Report, 66 percent of respondents are prepared to pay extra for sustainable items. The research done by Harris Interactive poll indicated that 77 percent of American consumers buy green products/services. Green Innovation is employed in the manufacturing process by firms to decrease production time and expenses. It increases market position and provides an advantage over their rivals. Green innovation

produces breakthroughs. For example, Patagonia is one of the most well-known sportswear companies in the world. They've established repair facilities to decrease their carbon impact. They gave \$10 million from Black Friday sales in 2016 to extreme environmental organisations. Thus, Green Innovation is the key to allowing ecologically sustainable development as it may lead to a cleaner and safer planet. Green innovation that decreases a company's environmental effect. (Via re-usage and recycling of items). Green innovation that handles the company's environmental challenges. The use of dangerous components may be reduced (as a result). The development of ecologically friendly goods and processes via green innovation, utilising less energy or resources

Overview on Green market

Green business is defined as "a business that operates in a way that has no negative impact on the local or global environment, the community, or the economy, and green business will also engage in forward-thinking policies for environmental concerns and policies affecting human rights," according to Business Dictionary. "An organisation that employs renewable resources (environmentally sustainable) and holds itself accountable for the human resource side of its actions (socially responsible)," according to Slovik.



Fig. 1: Green Marketing Strategies

Purchase Things That Are Environmentally Friendly

Eco-friendly items should be promoted since they are easily reused and recycled. This may be accomplished through altering workers' shopping patterns and sharing the advantages of

eco-friendly products with them. Environmentally friendly goods may also be promoted in the workplace via workshops on the subject. Environmentally friendly packaging and jute bags should be used in lieu of plastic packaging.

Consider Using Public Transportation or Carpooling

Employees should be encouraged to carpool by offering amenities such as free parking spaces. It may be accomplished by sharing the advantages with workers and how they can save money by doing so. Carpools may be readily formed by establishing an internal information sharing board that connects individuals who take comparable routes to work. Employees should also be encouraged to use the stairs rather than the elevators to conserve energy and to take advantage of public transportation. To encourage them, start publishing transit timetables, bus routes, and information about other modes of transportation in clearly accessible areas.

Afforestation Use of Renewable Resources

Use renewable energy sources such as solar, wind, hydropower, and other alternative energy sources. "Continue to plant trees." This basic essential not only improves the beauty of your surrounds, but it also improves the quality of the environment in which you live. Planting additional trees will enhance the office's aesthetics while also bringing us closer to green management.

Lower Your Carbon Impact

Simple acts, such as turning off equipment while not in use, may make a big difference. Use of energy-efficient equipment, recycling old papers, and utilising disposable plates and containers may all help you decrease your workplace's carbon impact.

Electricity Generator from Waste Water

Oregon State University engineers have created a water-based hybrid energy generator. Microbial fuel cells and reverse electrodialysis were combined to produce a system that can generate electricity from waste water. The generator is capable of producing enough electricity to operate the water treatment

system, as well as a significant portion of the electrical grid. With the rising scarcity of natural resources, this technology may serve as a basis for long-term energy and water sustainability.

New Form of Nuclear Materials

Nuclear energy has enormous potential, but because of the hazards involved with radioactive waste, it has not been fully used. Only 1% of the potential energy in Uranium is now used in nuclear power reactors, with the remainder ending up as radioactive waste. Other elements, such as Thorium, may, however, be used to replace Uranium and enable nuclear power to achieve its full potential. Thorium-based fission produces less waste since all of the thorium mined is in the isotopic form required by the reactor. In addition, thorium is more prevalent in the earth's crust. Its failure to replace uranium is due to its high cost. However, research and development in this field is picking up steam, and experts are optimistic that the technology will become cost-effective in the near future.

Pyrolysis / waste-sourced biofuel

We're constantly on the lookout for new and innovative methods to recycle our waste, and I believe we've found it. Biomass waste, such as paper, grass, or wood chips, may now be converted into gas and, ultimately, ethanol, thanks to advances in technology. In comparison to typical ethanol production, the conversion procedures utilise much less water and have a lower carbon impact. Several pilots will be started shortly in the United Kingdom, Canada, and Australia, with businesses developing standardised, easy-to-install machines that will enable communities all over the globe to start converting rubbish into cleaner biofuel. Plants are important carbon sinks, and deforestation contributes significantly to greenhouse gas emissions and, as a result, climate change. Agriculture and food crops, on the other hand, cannot be maintained standing. As a result, a method known as PYROLYSIS was developed to offset part of the carbon emissions connected with agriculture. Not only may agricultural residue be burned in a controlled, low-oxygen atmosphere to minimise greenhouse gas emissions, but it also produces charcoal as a

byproduct. This technique has enormous promise, owing to its dual advantages.

Biomimicry

Self-healing materials are the result of biomimicry. When sliced, ripped, or cracked, the self-healing materials will be able to "repair" themselves. As a result, most consumer items will have longer lifespan, lowering the need for raw resources and waste.

Automobiles with electric power

In any discussion about future green technologies, electric cars are a must-have issue. An advancement in wireless technology will allow for the transmission of electric power from stationary cars to moving ones. This means that all electric vehicles will be outfitted with devices that can receive power from cables buried beneath the road through an electromagnetic field broadcast. In South Korea, these cars are now being tested on the road, and their commercialization is certain to modify some people's views on electric vehicles.

Green Networking

Green networking is a wide word that refers to a variety of methods for lowering the power consumption of networking gear and appliances. This is potentially beneficial to a company's bottom line. Reducing electricity use also decreases carbon pollution, minimising greenhouse gas accumulation in the environment. That's a plus for businesses wanting to improve their corporate citizenship - or at least seem to be doing so in their public relations efforts.

Conclusion

Green management techniques are becoming more important to commercial organisations as a means of improving their public image and reputation. As a result, energy-efficient goods and methods that decrease waste are becoming more popular among businesses. To begin with, adopting green management techniques lowers the organization's overhead expenditures, resulting in cheaper costs and increased profits. It also aids in the independence from government intrusion since such management approaches result in the government's regulatory demands being met. Second, implementing green management techniques

enhances the interaction between the firm and other stakeholders, resulting in a better public image and market position. Finally, embracing green practises improves an organization's profitability by improving its public image. Finally, green management methods aid in the efficient use of personnel resources. To sum up, firms have begun to operate in an ecologically responsible manner, and workers are becoming more aware of the need of implementing green management techniques in the workplace.

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