

Green Technologies And Its Impact On Environment Influencing Business Firms For Sustainable Development And Marketing Of Green Products.

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ABSTRACT:

All nations and all people share the same planet our mother earth. Since industrial revolution took place, gradually modernization resulted in the fast growth of the economies leading to exploitation of natural resources and polluting the environment from production and consumption of hazardous products by both producers and consumers. There is a growing interest among the consumers all over the world regarding protection of environment. The Covid-19 pandemic is far more than a health crisis, it has unpredictably changed consumers whole way of life. Consumers priorities have become centered on the most necessary needs include food hygiene, sanitary products, pharmacy products etc. Green marketing imparts a proactive strategy for the companies to cater the market by imparting nature friendly products and services, simultaneously the focus is on continuous innovations in creating green technologies, green products and development of new marketing strategies to meet consumer needs and wants. Hence this is a conceptual paper examines the green technologies and its impact on environment that influence business firms to adopt green marketing for sustainable development of green products.

Keywords: Green marketing, Green technology, Green products, Covid-19, Environment, Sustainable development

Introduction

Nowadays a lot of changes is happening in the global field, business management, philosophies, scope of activities, marketing strategies, consumer needs and their demands. In the 1980's environmental issues had dominated the world, since then till now there has been tremendous increase in the consumer environmental consciousness. The Covid-19 Pandemic has shaken the world economies and labour markets and even all classes and sections of people from rich to poor people. The daily work of personal and professional life have taken a different course of change in the decade and may or may not continue in the future yet it is uncertain. According to a study conducted by the Nielson company, the spread of the Covid-19 pandemic has heightened people's awareness of environmental issues, during the lockdown people spend more time with their families and enjoying simple things in life, not exposing to air pollution, road noise, the experience is similar what all the people felt around the world expressing an appetite for change that has led to a globally manifested change in spending levels related to consumer behaviour. Consumer's choices have been narrowed down to the selection and preferences of healthy intake of food and immunity boosters, sanitary items, pharmacy products etc., because of the pandemic. The focus is on continuous innovations in creating green technologies and green products and formulating marketing strategies that can tap consumer psychology and able to understand to the extent of meeting consumer expectations. There are certain sectors and industries immensely taken advantage of the circumstances and utilised their optimum level in terms of production and sales during the Covid situation. Many organizations have taken the first mover advantage in knowing the market through proper research and appropriately planned with backup to battle the future uncertainties. Therefore the Green technology is an alternative that creates phosphate free recyclable, ozone friendly that assures reduction of environmental deterioration leading to increase in green products and protecting natural resources. Likewise Green marketing approach can be defined as if business do its production, promotion and distribution activities firstly in order to be the benefit of environment, it is called Green marketing (Oxford 2002). Hence the paper focuses on the Green technologies and its impact on environment that led businesses to adopt Green marketing for sustainable development of green products.

Review of Literature

Owais Yusuf, Sushree titikshya and Anupama Singh (June 2018) in the study titled "Organic food production through green technology": An Ideal way of Sustainable development. The

research study revealed about varieties of green technologies and its usage in production of organic food and sustainable development. Green technology is more expensive than the technology it aims to replace. Efforts are required to make these technologies affordable to all. There is a necessity to design effective communication systems to create awareness among the farmers and consumers supported by government through certification, simplification of the process and marketing of the products.

Impact of Green Marketing on customer satisfaction and Environment safety, by Rashad Yazdanifard and Igbazua Erdoo Mercy. There have been a lot of literature review on green marketing over the years, this paper analyses the impact of green marketing on customer satisfaction and environmental safety. According to the world commission on Environmental Development (1978), sustainable development is meeting the needs of the present without compromising the ability of the future generations to meet their own needs. Many authors believe that customers have a high level of involvement regarding environmental issues, where customers want to associate themselves with companies and products that are eco-friendly.

Indal Kumar (2014), in his paper titled 'Rural Green Marketing: Challenges and Opportunities in India', India is fastest growing rural market in the world. The green marketing provides opportunities and challenges for rural marketers. Industrial toxic waste, soil erosion, deforestation is serious problems people and other life forms are facing on our planet. It is the right time to put in to operation the green marketing in India.

Adolfo Di Crosta, Irene Ceccato, Daniela Marchetti, Pasquale La Malva, Roberta Maiella, Loreta Cannito, Mario Cipi, Nicola Mammarella, Riccardo Palumbo, Maria Cristina Verrocchio, Rocco Palumbo, Alberto Di Domenico (2021), in the study titled "Psychological factors and consumer behavior during the COVID-19 pandemic" The study examines variation in the daily personnel and professional work life pattern tapping the consumer psychological attributes experienced during the lockdown period as a result of Covid. The findings of the study confirmed that the consumers started to narrow down the choices of products based on their preferences and purchase during the pandemic. Hence the impact on the consumer behaviour will continue further regarding the different phases of pandemic as the future is uncertain.

Brijesh Sivathanu (2015) in the study titled “Factors affecting Consumer Preference towards the organic food purchases” examines that the consumer purchase organic food due to health factor, its safety, nutrients value and environmental concerns. Organic food consumers give less importance to price as compared to the consumers who never purchase organic food earlier. The main constraint towards the purchase of organic food is higher prices, levels of information, level of trust in organic certification quality and schemes and lesser availability of organic food.

Statement of the Problem

Nowadays the awareness and realization for healthy environment world-wide has increased in recent years specifically during covid-19 pandemic a lot due to consumer insights of quality and safety consumption. This paper intends to analyse information about green technologies and its impact on environment that influence business firms which can be utilised and its possibilities for marketer’s to develop green products by the techniques which are ecologically comprehensive and how they would be helpful in the sustainable development environmentally.

Objectives of the Study

1. To study the significance of green technologies, products and its impact on environment.
2. To identify the areas for sustainable development of markets in going green.
3. To identify the opportunities and challenges of green marketing in order to meet the consumer needs and wants.

Methodology

- a. Sources of data – This study is based on Secondary data
- b. Collection of Data – The data has been collected through various articles, magazines and websites.

Significance of Green products

The products those are manufactured through green technology and that caused no Environmental hazards are called green products. Promotion of green technology and Green

products is necessary for conservation of natural resources and sustainable development. We can define green products by following measures:

- Products those are originally grown,
- Products those are recyclable, reusable and biodegradable,
- Products with natural ingredients,
- Products containing recycled contents, non-toxic chemical,
- Products contents under approved chemical,
- Products that do not harm or pollute the environment,
- Products that will not be tested on animals,
- Products that have eco-friendly packaging i.e. reusable, refillable containers etc.

Environmental and Health Benefits of Organic Food Products

Organic products reduce public health risks to farm workers, their families, and consumers by minimizing their exposure to toxic and persistent chemicals on the farm and in food, the soil in which they work and play, the air they breathe, and the water they drink. Children are especially vulnerable to pesticides. Thus, offering organic food and fiber products into the marketplace gives parents the option of choosing products produced without the use of these toxins.

When choosing organic products, most consumers start with organic food items such as fresh produce and milk. Some of the examples of **organic vegetables** like Spinach, tomatoes, cauliflower, potato, bitter gourd, carrot, capsicum, and green chili constitute a significant part of the organic vegetable option. These vegetables mostly have the exposure of humans rather than toxic chemicals and fertilizers. They are hand weeded and densely planted.

However, there is a wide diversity of other organic products available, including organic apparel and beds/bedding, cleaning and household products, nutritional supplements, organic flowers, and even organic pet food. Our choices when doing the laundry, selecting apparel, and buying personal care products all have an impact on the health of our planet. Choosing products made with organic ingredients is an easy way to ensure that this impact is a positive one.

All organic non-food products are produced without the use of toxic and persistent pesticides, as well as synthetic fertilizers. As a result, choosing an organic t-shirt, organic dog food, an

organic personal care or an organic nutritional supplement help prevent damage to valuable water resources, protect species diversity, and combat climate change.

Beverages include Organic tea is in great demand at present. The reason for this is more flavoured leaves and higher nutritional values of organic tea. Especially during Covid-19 pandemic many consumers in india started preferring and consuming herbal and ayurvedic related products for instance Dabur chyamanprash and Himalaya products consumption increased a lot as consumers preferred healthy and safety particularly Organic chyamanprash and organic related products.

Legumes Consumers are displaying a marked preference for organic pulses including moong, Chana, toor, masoor, urad, arhar, kidney beans etc. It has been observed that organically grown pulses are sweeter and enriched with high nutritional elements.

Dairy Products Milk constitutes a popular item in the list of organic food products. In a simple language organic milk means the milk obtained from cows that are not treated with growth hormones and antibiotics and are fed on 100% organic products and allowed to graze naturally.

Innovation of Green technologies on the Environment for Sustainable development of Organic Non-food Products (Green products)

Innovation is the result of change in the past, present and future. There is an instant need for saving natural resources and development of healthy environment simultaneously. All this is possible only when mankind realises and takes initiatives in leading himself and society in the right direction. Hence green technology is the result of having the potential to establish demand for organic food that are ecologically sound, socially equitable and environmentally sustainable. In this context some of the leading techniques are addressed in this section.

Green Technology for Sustainable Development – The instinct of desire in acquiring the benefit from Green technology, it needs to be successfully connected with the country's overall development objectives and applied to solve socio economic problems. In developed countries, organic agricultural systems when combined with Green Technology an synergy is formed to achieve superior yields, in distinction to the conventional practices used in developing countries, and thus make way for the sustainable development in agriculture. Sustainable Agriculture can be defined as an approach of producing crops or livestock in an

environmental friendly manner, without any damage to the farm. It also prevents the unfavourable effect on water supplies, soil, biodiversity, or other surrounding natural resources. Hence, this method of agricultural practice not only helps in conserving and protection soil, water and climate but also ensures enhancement of agro-biodiversity while safeguarding the needs of food and livelihood.

Therefore, Green technology has the potential to provide farmers an adequate financial reward for producing high quality safe organic food. Introduction of sustainable agriculture can be done with these three key goals i.e., economic equity, environmental health, and social and economic profitability. Thus, utilizing best of its resources and recognizing these three key goals, green technology in agriculture helps in fulfilling the purpose of sustainable development.

Green technology of Solar energy – Solar energy is the basic source of energy which is derived from the sun. The sun delivers yearly over 10,000 times the energy that human being currently use. For instance Solar electric systems provide electricity for battery, charging lighting, water pumping, etc., that requires no cost for fuel and maintenance also does not pollute the environment. This type of green technology is the best substitute for refining the standard of life of rural and even urban families in terms of cooking, lighting, producing bio fertilizers and organic foods.

Green technology of Geothermal energy – Geothermal technology uses energy from the earth's crust to generate heat or electricity. Which is converted in to hot geothermal fluid that can be seen in varied areas like for heating buildings, warming water to fish farming, nurturing plants in green houses and dehydrating onions and garlic. Hence geothermal initiatives are dependable resource for organic food production.

Green technology in Integrated Pest Management – Integrated Pest Management is an eco-friendly technique for pest management that maximises the yield of organic food with minimum costs, through usage of bio-pesticides, bio-control agents, and prevent environmental pollution in air, water and soil due to pesticides.

Green Technology of Biofuel - Biofuel, bio-ethanol and bio-diesel, has stood up to the potential for future energy prospects. While creating a substantial association between

agriculture and biofuel, two parameters are taken into account i.e.; concerns for food security and risks to environment and biodiversity. Also, transforming wasteland to farmland with some crop options can be regarded as positive influences. In India, 9% current issue of petroleum requirements can be resolved by 0.8 million kilolitres of ethanol which can be generated if all the available sugarcane molasses is been utilized.

From Grey to Green: Role of Aluminium

The growing global environment crisis, along with excessive consumption of energy and excessive emission of greenhouse gases, has fuelled the need to adopt sustainability and it is becoming increasingly imperative to adopt not only green buildings but green roofs too. Green roofs are intentionally vegetated roof surfaces that also have a very positive impact on the microclimate.

The roofing industry in India is driven by growth in the construction industry. Aluminium is a 100% green metal as it can be recycled endlessly with minimal energy. According to the International Aluminium Institute, aluminium is infinitely recyclable and of the one billion tonnes of aluminium ever produced, about 75% of that is still in use. Globally aluminium is a preferred choice of metal in the building and construction industry. In addition to roofing to roofing, aluminium applications like facades, windows and doors are popular in building and construction. It is a high life time value product, as the initial cost of the product is high but the maintenance cost during the life of the product is low. Also aluminium has high resale value due to its excellent recyclability.

About Soapberries: The Eco-friendly Cleaning Solution

If you think that detergents are found only on supermarket shelves, then be prepared for clean, green surprise. It grows on trees and been cleaning clothes(and people) since the time of the Buddha.

The name Sapindus is derived from the Latin words Saponis, meaning soap and Indicus, meaning from India. The part of the Sapindus tree used as a surfactant is the fruit and it is commonly known as soapnut. Since it is a fruit, we prefer to call it the soapberry. Saponins are a class of compounds, found in abundance in the plant world, and produce foaming solutions in water which can used for cleaning and are found in abundance in the plant world. The soap berry is making a strong come back especially in countries like USA, Australia, Singapore etc.

POLYTHENE FREE: The ban on production, storage, use, sale and distribution of all types of polythene bags made of non-biodegradable materials was imposed on October 2, 2009. The government initiated not only the citizens but also the tourists and traders to move on to jute, paper and cotton bags.

COTTON TAGGING AND PAPER BAGS: As the concept of green marketing is gearing up, we can see changes in promotional activities like usage of paper bags, recyclable paper bags or ecofriendly bags for packing their products. Initiatives have been taken by brands like Adidas, Reebok, lotto, Nike. Tags on products made of plastic paper or synthetics are being replaced by cotton tags.

Green Mask - In absence of proper medical facilities and with an aim to defend themselves from the viral infection, women in Amabeda village in Chhattisgarh Kanker district have started stitching their own masks made of green leaves. March 2020, speaking to India Today TV over phone, one of the villagers said, "Even the water we drink is not suitable for human consumption. How do you expect us to buy masks and sanitisers? We are trying to do our bit. We are making organic masks out of clothes and leaves and we are avoiding large gatherings."

OPPORTUNITIES AND CHALLENGES:

A. OPPORTUNITIES:

In India, around 30% of the consumers prefer environmental-friendly products, and around 40% may be considered healthy conscious.

SOCIAL-RESPONSIBILITY - Numerous companies have started realizing that they must behave in an environment-friendly fashion. But there are few firms that can be very environmentally responsible, but do not promote this fact. So there is corporate social responsibility for more companies towards consumer aspirations.

GOVERNMENT - Government have to play a major role along with producers for creating awareness and supporting the benefits and usage of green products. Though, the Indian government has developed a framework of legislations to reduce the production of harmful goods and by products to protect consumers and the society at large. But still rules and

regulations have to be more effective on certain areas of industries that produce harmful goods and hazardous waste.

Educate Customers - Educate the customers through use of proper communication channels that creates awareness and understanding about the benefits of the product. Involve customer participation through sharing of their experience and feedback regarding the product. Educate consumers with marketing messages that connect environmental attributes with desired consumer value.

Cost - Green technologies is expensive, thereby efforts are required to a large extent to make these technologies affordable to all. Likewise if many producers start adopting green technologies and marketing of green products in mass simultaneously it leads to cost reduction and the price of the products also becomes affordable.

Green Alliance - Network with other green based business that is green business alliances that adds strength for green innovation. Likeminded organizations can be the source for other organizations to rethink and transform their business attitude towards well-being of the society through going green.

Eco-Certifications & Eco-Labeling – Most of the Consumers are suspicious about the green products. Hence Procure product endorsements or eco-certifications and eco-labelling from reliable producers or suppliers as this will give confidence and trustworthy in the minds of the consumers.

B.CHALLENGES:

Ever since green marketing has become popular, the companies are facing many problems while implementing Green Marketing. The foremost challenges to Green marketing which have to be faced are:

NEED FOR STANDARDIZATION: Most of the organizations in the name of green products or go green concept have not seriously adopted or implemented the process. Where in it is found that 5% of them are only true. Lack of standardization regarding certification and labelling is a issue. Hence there is a need for the control board for such labelling and certification.

NEW CONCEPT- Today in Indian scenario, the urban customer is more aware of the advantages of the green product and some of them may be even ready to purchase such a product even though it may be highly priced. But it is still a new concept for the masses. So there is a need to educate the customer and make him aware of the environmental threats.

COST FACTOR- Use of green technologies requires a huge investment. Many organizations are showing keen interest towards go green concept, but due to cost factor involved those interested are not coming forward. Therefore government has to provide support financially for the organizations to use green technologies.

CONVINCING CUSTOMERS- Most of the consumers still have an apprehension or suspicious regarding the quality and authenticity about the green products. There is a huge responsibility for the organization to convince the consumers through proper communication via various social media etc regarding the benefits of green products.

NON COOPERATION- The organizations using green technologies and marketing have to take a giant leap to influence the stakeholders who resist in going green. Though many messages and communication regarding the usage of green products have been made, but still there is no much cooperation from the public. Hence the firms have to creatively rethink and strategize their goals and plans to target the consumers in going green.

SUSTAINABILITY- The companies involved in green business are incurring low profits initially as the renewable and green technologies are expensive. Therefore the business goals has to strive for long term that is sustainability for the benefits which is still to come consistently rather than short term which is temporary.

Findings

- There has been a significant increase in the consumers safety and health consciousness particularly spending levels centered on basic necessities products such as food hygiene, sanitary products, pharmacy products etc, because of the Covid-19 pandemic.

- Adoption of green technologies have been gradually followed by few firms those who are ready to invest and deliver eco-friendly products.
- Consumer awareness over environmental concern and their consumption and usage of green products is increasing over a period of time. But still availability and cost factor is looked upon by most of the consumers.
- Though Consumers attitude and preference towards green products is favourable, still to some extent consumers develop suspicious particularly for organic food products regarding its authenticity.
- Exploitation of natural resources and production of hazardous products and waste materials, pollution creating numerous environmental problems all over the world that led companies to rethink their business process following green technology and marketing of green products for sustainable development and protection of natural resources.
- Companies involved in Solar energy, geothermal energy, Integrated pest management, bio-fuel has shown to other conventional industries the potential and use of green technologies.

Implications

Many global players in diverse business are now successfully implementing green technology and green product marketing practices able to reduce environmental degradation. From the production stage itself use more environment friendly raw materials. Explore possibility of recycling of used products that offers other benefits and reductions in wastes. Financial assistance and Incubation support by the government for industries and start-ups will create a meaningful change in the market place for transforming them to go-green concept. While sustainability has been growing concern for many consumers, corporations and governments as covid-19 pandemic has accelerated awareness among the households to consider their shopping choices and expressed increased desire to make eco-friendly and sustainable choices in their purchases. In totality it is the combined effort of government, industries,

consumers, stakeholders all around the world to transform themselves for ecological concern through sustainable development and well-being for our future generations.

Conclusions

People are bound to accept those alternatives as they are facing the hardships and realities with the ongoing health crisis particularly Covid-19 pandemic. The other side is the long threat since industrial revolution started simultaneously global warming gradually increased world-wide resulting in pollutions, exploiting natural resources and de-gradation of environment that has become a huge concern for mankind for the survival and protection of future generations. Bringing in innovative technologies in going green not only helps in sustainable development but also results in drastic change in healthy environment and saving world from pollution and other related problems. Green marketing is a tool for protecting the environment for the future generation, it has a positive impact on the producer, customers, suppliers and stakeholders and earth. Effective sustainable development of green marketing is not only targeting at the right audience or customers that make a difference, but a major transformation or change in the mind-set of the society or people around the world that creates a huge differences for a greener earth. As such green technology and green marketing is not just a marketing strategy but also a tool for environment protection. .

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