Handbook of Research on

Economic and Political Implications of Green Trading and Energy Use

Ramesh Chandra Das

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List of Contributors

Table of Contents

Section 1
Economic Implications of Green Trading and Energy Use for Countries and Groups

Section 2
Green Innovations, Green Urbanization, and Political Aspects for Environmental Protection

Chapter 22

Detailed Table of Contents

Section 1
Economic Implications of Green Trading and Energy Use for Countries and Groups

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    Mainak Bhattacharjee, Loreto College, India
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One major concern that has emerged in the post-globalization period is climate change. Given that pollution and environmental degradation is a public bad, the adverse change in the climate of one region will have ubiquitous effect and therefore will hamper the process of sustainable development across the globe. There are substantial links between international trade and environmental issues – one being that of the perverted comparative advantage which evolves mainly out of the neglect of environmental damage caused by productive activities. In this chapter, an attempt has been made to build a theoretical framework related to intra-industry trade with production differentiation based on the environmental quality of the goods and price to address how liberalization of trade happens to affect the environment of the trading nations. The study shows a steep decline in the environmental quality of the good that was relatively cleaner under autarky while a meagre improvement in the environmental quality of the relatively dirtier good. Hence, it is revealed hereby how trade alters the nature of international inequality in the environmental quality of the productive activities.

    Hasan Dinçer, Istanbul Medipol University, Turkey
    Serhat Yüksel, Istanbul Medipol University, Turkey
    Zehra Nur Canbolat, Istanbul Medipol University, Turkey

Higher technological developments, product diversity, international trade, and population growth have greatly increased the energy demand of countries. It is very significant that this growing demand should

be satisfied with a safe and accessible energy source. Because of this issue, it is thought that countries should be directed towards renewable energy sources so that these countries can meet their rising energy demand without increasing their energy imports. This chapter aims to identify the causal relationship between the use of renewable energy and energy imports. Within this framework, the data between 1990 and 2015 of E7 countries (Brazil, China, Indonesia, India, Mexico, Russia, and Turkey) is taken into the consideration by using the Pedroni panel cointegration method and the Dumitrescu Hurlin panel causality analysis. Results show that there is a long-term relationship between energy imports and renewable energy usage, but there is no causal relationship between energy imports and renewable energy usage. This situation gives information that the use of renewable energy is important and effective in order to reduce imports, but using only this method is not sufficient to remove the import problem for these countries.

Chapter 3

Deniz Güvercin, Istanbul Arel Üniversitesi, Turkey

The chapter contributes to the growing body of empirical researches by exploring the nexus among FDI, trade, carbon dioxide emission level, and the renewable energy use. Panel VAR econometric methodology upon the data for 18 emerging economies over the period of 1990-2014 is applied to uncover the interactive and simultenous relations among variables. Granger causality test results indicate that FDI, carbon emission, and renewable energy use Granger cause trade. Carbon emission and renewable energy use Granger cause FDI, FDI Granger causes carbon emission, and FDI granger causes renewable energy use. Impulse response analysis results indicate that FDI decreases trade, carbon emission, and renewable energy use. Moreover, carbonemission decreases trade, and increases FDI whereas it is decreased by renewable energy use. Results indicate that the Pollution Haven and the Pollution Halo hypothesis are valid for the FDI, however, the Pollution Haven hypothesis is not valid for trade. Additionally, results indicate that FDI decreases trade implying the presence of substitution relation between FDI and trade.

Chapter 4

Sovik Mukherjee, St. Xavier's University, India

The chapter starts by comparing India with China, U.S. and world as a whole in respect of composition, pattern of primary energy use, fuel access to clean cooking energy, and access to electricity for the households. Moving on, this relationship between energy and poverty has preoccupied development economists for decades and begs for a policy dialogue on whether the lack of energy in terms of the 3E's—energy security, energy accessibility, and energy use—makes a nation energy poor or not. This moves the focus on the state of equity in the distribution of energy in India. The chapter, then, looks at the issue of energy poverty, in particular, rural-urban magnitude of energy poverty by estimating the specific concentration curve using National Sample Survey (NSSO) household unit level data from the 68th round (July 2011 – June 2012). To conclude, the study comments on how the optimum fuel mix design should look and talks about sustainable strategies involving the use of new renewables for breaking India's energy poverty jinx.

This chapter deals with some contemporary issues related to trade and environment, which are mainly faced by the developing nations of the world. In this context, the present study has considered some facts and figures of Indian tannery industry for realization of the above-mentioned objective. In this chapter, an attempt has been made to analyze theoretically the effect of both environmental regulation and trade liberalization on the output of different sectors and also on the national welfare in a small open economy. To categorize this, the authors have presented a theoretical model based on the general equilibrium framework that mainly highlights a paradoxical result. Apart from this, the present research shows that the capital used specifically in advanced export sector is likely to affect the welfare positively, and the capital used by the rest of the economy is likely to affect the welfare adversely when usual export sector of the economy vanishes, and the opposite will occur when the pollution-intensive informal sector of the economy vanishes.

The chapter investigates the role of FDI on growth, the role of FDI on environmental quality, and the role of environmental quality on FDI in 23 emerging market economies over the period of 1993-2014 by panel VAR analysis. It observes that FDI contributes to economic growth and environmental degradation in emerging market economies. In addition, environmental degradation attracts FDI inflows into host emerging market economies. The results support pollution haven hypothesis and contradict pollution halo hypothesis.

In order to understand the role of sustainability in the era of development, the broader purpose of the chapter is to examine the quantitative linkages between HDI and environmental performance for the selected developed and developing nations from 2002 to 2017. To test if the degree of economic expansion and standard of living has a systematic relationship with the level of environmental deterioration (existence of Kuznets curve hypotheses) in a country, the study employs fixed effects panel modeling on the selected country set. Several other macroeconomic and capital flow variables are considered in the extended empirical model development in order to supplement the holistic review of the situation. In addition, the study finds its novelty by considering relevant governance indicators in order to map the umbrella view. The findings of the panel analysis discover HDI to be positively associated with EPI, depicting higher human capital accumulation leading to lower environmental damage and better environmental performance. Additionally, the results confirm the deviation from EKC hypotheses in the context of developing nations while the same is established in case of developed nations.

This chapter is on the use of the Sustainable Development Goals (SDGs) for the achievement of green economy in Nigeria with the specific aim of assessing the performance of key issues in the SDGs. Five goals SDGs 6, 7, 11, 12, and 15 for water and sanitation, safe human settlements, renewable energy, sustainable consumption and production, and ecosystem, respectively, are selected for assessment for the green initiatives and the economy. Budgets on economic and social services follows the pattern theory: that government allocates and reallocates at will without cognizance of the population's interests. The assessment holds the fact that only two of these goals are being met somehow—renewable energy and clean water—and not necessarily because of the need to achieve the goals but as part of private sector and dynamic market initiatives, clearly indicating failures for the others. For the most part, Nigeria failed in the areas of ecosystem, good human settlement, and responsible consumption. The chapter suggests the encouragement of entrepreneurial initiatives, the initiation of new policies on green economy, and the enforcement of regulations already in place to power the economy.

Over the last decade there has been a gradual change in the global energy landscape, with fast-growing emerging markets overtaking the traditional centers in terms of energy demand. International Energy Outlook 2017 forecasts that energy consumption in non-OECD countries would increase by 41% between 2015 and 2040 in contrast to a 9% increase in OECD countries. The chapter focuses on two major areas: (1) examining the changing pattern of the composition of energy use in the two selected countries of Asia (India and China) and (2) examining the short-run and long-run relationship among energy use, GDP per capita, energy intensity, use of electricity power, extent of urbanization. Using ARDL bound test for the period 1990 to 2014 for the World Development Indicator data 2017-18, it reveals that the powerhouses of global energy demand growth are led by the developing economies of Asia (i.e., China, India, Indonesia, Morocco, Brazil, Singapore, and Thailand). In the case of India, a long-run association has been found between energy use and GDP per capita, energy intensity, use of electricity power, and extent of urbanization, but no instances are for China.

Recently, the climate regulations and stop-loss regulations have become a central policy parameter globally. In market-oriented economies, insurers as the biggest stakeholder-industry of natural disaster risk are facing the issue related to industry sustainability. Thus, the policy implications of natural disasters

regulation on the insurance industry are enormous. Therefore, this chapter has made an effort to analyze the disaster management in the integrated framework. This integrated framework is based upon the analysis of the role of regulatory actions taken by three actors, namely, disaster regulation, insurance regulations, and firms' actions across the three stages of disaster management, namely, pre-disaster, underwriting, and post-disaster stages in G-7 economies. Based on the outcomes of the current analysis, the chapter found that there are two polar opposite integrated models (i.e., isolated best policy model in the case of Japan and spiral policy model in the case of Italy). Five models fall in between the two.

The objective of the chapter is to analyze the role of the institutions in the biodiesel industry in order to know if there is a relationship with the quality and maturity of the same with the ventures. Starting from a literary review, the framework of the current situation is identified, covering aspects related to formal institutions, laws, rules, regulatory bodies, and the theory that supports the relationship between institutions and entrepreneurship. It is thus concluded that the institutions in Mexico have increased their maturity and incentive to increase the number of producers and distributors of biodiesel, thus taking advantage of the growing market.

After the Kyoto Protocol, the new concept of carbon trading emerged. The carbon emission can be controlled by cap and tax system. Cap and trade is the permit that determines the maximum amounts of carbon emission. Carbon tax is imposed on amount of carbon emission. Other instruments of carbon emission are border adjustment and cash payment. Carbon permit is determined by market mechanism through demand and supply. Generally, there are two types of markets: regulated and voluntary. The chapter analyzes mechanisms and discusses the mitigating policies like Kyoto Protocol and tries to examine all aspects related to carbon leakage. The developed countries import carbon-intensive goods. Underdeveloped countries produce and export carbon-intensive goods. In this study, the authors show the prospect of carbon trading and various effects of carbon emission reduction policies on a theoretical framework.

Renewable energy is energy that is collected from renewable resources that are essentially inexhaustible like sunlight, wind, hydropower, and various forms of biomass. India has a huge renewable energy potential, and the availability of renewable energy sources is widely dispersed. The key objectives of the chapter are to assess the state development of renewable energy in India. It is seen that the average

percentage users of solar power in India has increased from 0.27% in 2001 to 0.44% in 2011. ANOVA results indicate there is significant difference among the states of India in renewable energy development in comparison to their potential capacities, and there is enough scope for the development of renewable energy like solar energy in India.

Chapter 14

Sudhakar Patra, Berhampur University, India
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The objective of the chapter is to analyze the trend and pattern of energy use, energy challenges of India, and the sustainability through green growth strategy. The study is based on secondary data collected from energy outlook, integrated energy policy, world development indicators, and RBI database. Energy security and sustainable development are critical issues to ensure India's economic growth and its human development. Transport sector energy demand witnesses a noticeable increase, growing by almost three times, from 125 Mtoe in 2012 to about 360 Mtoe in 2018. India has a vast supply of renewable energy resources, and it has one of the largest programs in the world for deploying renewable energy products and systems. The share of oil has in particular fallen from 36% to 33%, while that of natural gas has increased from 23% to 24%, and that of renewable energy (including nuclear and large hydro) has gone up from 12.5% to 14% in the period 2005-15. There is urgent need to have proper integrated energy policy in India with emphasis more on renewable sources of energy.

Section 2
Green Innovations, Green Urbanization, and Political Aspects for Environmental Protection

Chapter 15

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Both consumers and corporate houses are paying attention to environmental issues, and green products are gaining momentum as a result. This chapter studies the concept of green marketing along with its important aspects influencing the buying decision of consumers in South Kolkata only. Convenience sampling method was adopted to select the total sample of 266 respondents consisting of 103 males and 163 females with the help of structured open- and closed-ended questionnaires. Both primary and secondary data collection methods were adopted here in this research. Independent variables are environment friendly, packaging, innovative, quality, brand value, and dependent variable is purchase intention. A mixed result is observed regarding perceptions towards green products. Thus, based on such findings, no such generalization can be made and have to consider heterogeneity among culture, demographic, geographical variables, which varies from place to place.

Considering the necessity to build up corporate social responsibility (CSR) activities in general and sustainability in particular under statutory obligations, Ministry of Corporate Affairs, Government of India had notified in Companies Act 2013 (section 135) that every public limited company and private limited company having net worth of more than 500 crore or turnover more than 1000 crore or net profit more than 5 crore needs to comply with CSR rules (i.e., contributing 2% or more for the welfare of society following the prescribed guidelines under Schedule VII). The chapter focuses on CSR activities of companies registered under BSE SENSEX and evaluating their current status in CSR activities from the perspective of the broad heading of planet and people. A detailed analysis is done to highlight the current situation of the companies towards sustainable development through corporate sustainability index and statistical tools like Kruskal-Wallis test and Mann-Whitney U test to represent the contributions of these companies towards the environmental responsibilities. The study of CSR reveals the endeavors of surveyed companies towards the holistic development covering the noteworthy issue of environmental protection and sustainability; however, a continuous vigil from the regulatory bodies is the need of the hour to ensure that adherence to CSR practices should not only be in mere form but in true spirits.

The objective of the chapter is to discuss different aspects of marketing of greener products with some secondary source information. The theoretical analysis and the data reveal that there have been increasing implications of different generations towards greener or ecological products. More specifically, the younger generations prefer the greener products more as compared to older population.

Aspirations for being urban in character are considered as a significant phenomenon of socio-economic development in developing countries. Urbanization, in economic sense only, means intensive economic activities by a large number of people in a relatively small plot of land, where secondary and tertiary sectors play a dominant role and where certain amenities are bound to be available for general citizens, though it doesn't seem complete without addressing the issue of nature. Though urbanization of an area is tried to be measured by some academicians through applying the method of indexing with available indicators and their data-driven weights, environmental issues are not incorporated there for any kind of factor analysis to identify their individual relative importance. This chapter intervenes at this juncture

and focuses on construction of an urbanization index for some selected "town area units" belonging to some selected districts of West Bengal and run a factor analysis of it on some identified environmental factors. It observes negative relationship between QVSE and IGU, positive association between IGU and PR, and positive relation between IWDS and IGU.

Chapter 19

Asish Kumar Pal, Rabindra Mahavidyalaya, India
Atanu Sengupta, The University of Burdwan, India

Most Indian cities are experiencing rapid urbanization, and a majority of the country's population is expected to live in cities within a span of the next two decades. The rapid development in urban India has also resulted in a tremendous increase in the number of motor vehicles, and in some cities, this has doubled in the last decade. This is the main source of air pollution and poor ambient air quality impacting millions of dwellers. This chapter presents a review of the vehicular population in urban Indian cities with its pattern and determinants. The transport system is shared by two parts such as public transport as well as private transport system. To reduce the vehicular pollution, we have to emphasize on public transport system rather than private transport. In an underdeveloped country, it is very tough to use public transport. Due to lack of government fund, new technology, proper checking, etc., private cars, buses, and tracks are increased rapidly. We use these randomly for transport purposes. This causes pollution.

Chapter 20

Begum Sertyesilisik, Istanbul Technical University, Turkey

Green innovations are important in enhancing sustainability performance of the industries and of their outputs. They can influence the carbon emissions, energy efficiency of the industries affecting global green trade, and energy policies. Construction industry is one of the main industries contributing to the global economy and sustainable development. It has, however, bigger environmental footprint than majority of the other industries. Green innovations can contribute to the reduction in the environmental footprint of the construction industry. For this reason, green innovation in the construction industry needs to be supported by the effective policies. This chapter aims to introduce and investigate the political economy of the green innovations in the construction industry. This chapter emphasizes that the effectiveness of the green innovations in the construction industry can be fostered by effective political economy and strategies.

Chapter 21

Anandita Biswas, Diamond Harbour Women's University, India

Environmental degradation and concern for environmental protection and maintaining ecological balance in the last few decades has become the subject of serious political contention and public outcry. Human activity in the name of development has adversely affected the global biodiversity in an unprecedented manner. Eco-development demands structural and moral transformation of the current social, political, and value system. It presupposes a participatory political structure that allows maximum devolution of power to the local communities. And such a coordination and cooperation between development discourse and survival of nature can be found in the works and ideas of Mahatma Gandhi.

Energy security and economic growth are interrelated. South Asia is at a critical juncture today. Development is the overriding priority for the region because of the high incidence of poverty, but energy is proving to be a critical constraint. The entire region is suffering from an acute energy crisis. Firstly, South Asian countries are confronted with the huge challenge of securing energy to sustain rapid economic growth and meeting the rising aspirations of the people. Secondly, the region is home to a huge population that lacks access to clean forms of energy. A large section of the population, particularly in rural areas lacks access to electricity and relies on the traditional use of biomass for cooking. With limited domestic energy sources, most South Asian countries are also highly dependent on energy imports, particularly crude oil, from other regions. Thirdly, on the issue of energy security SAARC, countries need to establish a platform of common interest. There are three objectives of this chapter: exploring new alternatives of energy sources of South Asian States, searching for relationship between energy security and economic growth, and re-thinking about an alternative policy options regarding energy security in South Asia.

Foreword

Natural resource endowments on this planet earth are finite, sources of energy inputs in to the system in the shape of solar radiation are restricted, and waste absorption capacities of our ecosystems are limited. It is true that technology can address some of these limitations. But that too to an extent, since physical laws like conservation of mass and energy act as constraint on what can be done.

Gradual realization of these facts culminated into our current global concerns with the environment. These concerns rest on the common notion that natural resource exploitation and concomitant environmental modification has gone too far and has gone to the point where wellbeing of current and future generations are threatened. As a consequence, a global consensus has been gaining shape in the form of concrete policy making around the areas of environmental protection. One manifestation of such efforts is the serious query involving economic and political implications of green trading and green energy use. The present book, titled *Handbook of Research on Economic and Political Implications of Green Trading and Energy Use*, I hope, will serve the purpose of extending the extant knowledge base of such queries and help academic researchers of various disciplines and motivate environment related policy makers and executers.

Rabindra N. Bhattacharya
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Rabindra N. Bhattacharya *is presently Honorary Adjunct Professor of Economics in the School of Oceanographic Studies, Jadavpur University, India. He has almost fifty years of teaching and research experience in various institutes in India & abroad (including SANDEE). His areas of interest are Natural Resource & Environmental Economics and Development Economics. Professor Bhattacharya has published around 50 papers in almost all the leading national and international journals on Environmental Economics including Journal of Environmental Economics and Management as well as in reputed edited volumes. He personally edited a book on Environmental Economics with Oxford University Press, India.*

Preface

Starting from the Kyoto Protocol, the world policy makers have been framing different guidelines and control mechanisms in the areas of environmental protection. Besides scientific inventions and innovations in controlling environmental pollution, the economists prescribe for indirect or market-based policies and direct control policies. Emission permit trading is one of the effective policies so far and widely applied in many economies. Industrial houses are now tending towards green products and the financial institutional are forwarding investible funds to the environmentally friendly industries on the priority basis. Hence, the term, 'green financing' or 'green trading', has come into global perspectives for about two decades. Implementation of green policy requires economics as well as political supports from different income earning countries in the world. Success of the greening policy will inevitably make the entire biodiversity better off.

Again, starting from the same protocol, an international agreement framed in 1997 linked to the United Nations Framework Convention on Climate Change which commits its Parties by setting internationally binding emission reduction targets, the world policy makers have been framing different guidelines and control mechanisms in the areas of environmental protection. The environmental summits in different years and in different locations of the globe have been also following the concerned guidelines and trying hard to achieve the environmental standards in terms of emissions of different pollutants. The initiatives in overall phenomenon are known as greening the global environment so that the countries can have sustainable developments. There is always a debate between economic growth and environmental pollution, in particular the appearance of Environmental Kuznets Curve (EKC) to speak of, to present the scenario of the debate. As economy grows, energy uses increases, environment gets polluted in one hand and natural resources get eroded, and pressure on the ambient environment increases which in turn puts costs on the human society in particular and biodiversity in general. To control environmental pollution, particularly off Green House Gases (GHGs), economists usually moves for market based solutions and institutional based solutions. Under the market based solutions, indirect pollution tax and tradable pollution permits are considered as the front runners in the field. Emission permit trading, or the Green Trading, has been widely applied in the EU Zones and US state levels that have their history of good performance as well as difficulties. Besides, there is huge debate at the diplomatic level with regard to implementation and structurizations of the emission standards in different countries. There is a list of studies and observations that the authorities and stake holders often involved in corruption while dealing with carbon financing, permit issues, etc. It thus calls for good governance to tackle the issue and foster towards sustainable development. Therefore, it is now required to have a fresh look on the studying of the economic and political implications of green trading and energy use for different types of countries in the world.

Based upon the above background the proposed book had tried to investigate the economic and political aspects of green trading and energy use in global perspectives. It tried to highlight the issues related to carbon trading, carbon credit, energy use and energy efficiency, impact of these factors on economic outputs, diplomatic conflicts in implementing the environmental policies, etc.

Upon the above milieu I wrote an edited book proposal to IGI Global, the USA based premier publisher at Pennsylvania. Thereafter the proposal faced different phases of reviews and scrutiny and finally it was accepted and the title of the book was short listed to *Handbook of Research on Economic and Political Implications of Green Trading and Energy Use*. Starting the journey from the writing of book proposal to assemblage of chapters of different authors round the globe, it is now an impassable gratification that the ongoing edited book project has finally been unearthed.

After invitation to the potential authors through the official website of the IGI Global and my personal networks for contributions to the said mission by chapter submission on the recommended topics, a number of chapters have been singled out after a double-blind peer review process. All the chapters have attempted to justify their positions in terms of standard quantitative analysis at per their capabilities. After the double-blind review and additional review by me, as editor, the number of chapters in revised form ultimately turned out to be twenty-two forming a standard volume. The entire book has been arranged by two different sections in the content to cover the basic themes as addressed in the title.

Entire coverage of the book comprises two broad sections. Section 1 captures the series of studies discussing on the economic implications of green trading and energy use for countries and groups. It contains 14 chapters covering the above broad topic. The chapters in this section confine the theoretical and empirical studies belonging to the emerging economies and developed economies in general and countries like India, China, Mexico and Nigeria in particular. There are the chapters that model international trade and environmental effects in general equilibrium system and chapters covering poverty-environment jinx, FDI-environment trade off and use of renewable energies to establish the economic effects of green trading and energy use. In another part, Section 2 covers eight chapters on green innovations, green urbanization and political aspects for environmental protection (Chapters 15-22). The issues of discussion in this section cover perceptions towards green products, green financing, green urbanizations and political aspects of growth and environmental degradations. Most of the chapters have dependent heavily on empirical foundations with modern tools of quantitative economics to generate concrete research outputs. Brief outcomes of the chapter contributions under Section 1 are addressed below consecutively.

Chapter 1 has attempted to build a theoretical framework related to intra-industry trade with production differentiation based on the environmental quality of the goods and price to address how liberalization of trade happens to affect the environment of the trading nations. The study shows a steep decline in the environmental quality of the good that was relatively cleaner under autarky while a scanty improvement in the environmental quality of the relatively dirtier good.

Chapter 2 aims to identify the causal relationship between the use of renewable energy and energy imports for E7 countries (Brazil, China, Indonesia, India, Mexico, Russia and Turkey) for the period 1990-2015 by using the Pedroni panel cointegration method and the Dumitrescu Hurlin panel causality analysis. Results reveal a long-term relationship between energy imports and renewable energy usage but there is no causal relationship between energy imports and renewable energy usage.

Chapter 3 explores the nexus among FDI, trade, carbon dioxide emission level and the renewable energy use for 18 emerging economies over the period of 1990-2014 using panel VAR econometric methodology. Granger causality test results indicate that FDI, carbon emission and renewable energy

use make a cause to trade. Carbon emission and renewable energy use Granger cause FDI, FDI Granger causes carbon emission, and FDI granger causes renewable energy use. Moreover, carbon emission decreases trade, and increases FDI whereas it is decreased by renewable energy use. Results indicate that the Pollution Haven and the Pollution Halo hypothesis are valid for the FDI; however, the Pollution Haven hypothesis is not valid for trade.

Chapter 4 makes comparison of India with China and U.S. and world as a whole in respect of composition, pattern of primary energy use, fuel access to clean cooking energy and access to electricity for the households. It further looks at the issue of energy poverty, in particular, rural-urban magnitude of energy poverty by estimating the specific concentration curve using National Sample Survey (NSSO) household unit level data from the 68th round (July 2011 – June 2012). The study comments on how the optimum fuel mix design should look like and talks about sustainable strategies involving the use of new renewable for breaking India's energy poverty jinx.

Chapter 5 analyzes theoretically the effect of both environmental regulation and trade liberalization on the output of different sectors and also on the national welfare in a small open economy. To categorize this it has presented a theoretical model based on the general equilibrium framework which mainly highlights on a paradoxical result. Apart from this the study shows that the capital used specifically in advanced export sector is likely to affect the welfare positively and that the capital used by rest of the economy is likely to affect the welfare adversely when usual export sector of the economy vanishes and the opposite will occur when the pollution intensive informal sector of the economy vanishes.

Chapter 6 investigates the role of FDI on growth, the role of FDI on environmental quality, and the role of environmental quality on FDI in 23 emerging market economies over the period of 1993-2014 by using panel VAR analysis. It observes that FDI contributes to economic growth and environmental degradation in emerging market economies. In addition, environmental degradation attracts FDI inflows into host emerging market economies. The results support pollution haven hypothesis and contradict pollution halo hypothesis.

Chapter 7 aims to examine the quantitative linkages between HDI and Environmental Performance for the selected developed and developing nations from 2002 to 2017 employing fixed effects panel modeling on the selected country set. Several other macroeconomic and capital flow variables are considered in the extended empirical model development in order to supplement the holistic review of the situation. The findings of the study discover HDI to be positively associated with EPI, depicting higher human capital accumulation leading to lower environmental damage and better environmental performance. Additionally, the results confirm the deviation from EKC hypotheses in the context of developing nations while the same is established in case of developed nations.

Chapter 8 focuses on the use of the Sustainable Development Goals (SDGs) for the achievement of green economy in Nigeria with the specific aim of assessing the performance of key issues in the SDGs. Five goals SDGs 6, 7, 11, 12, and 15 for water and sanitation, safe human settlements renewable energy, sustainable consumption and production and ecosystem respectively are selected for assessment for the green initiatives and the economy. The assessment holds that only two of these goals are being met somehow: renewable energy and clean water, and not necessarily because of the need to achieve the goals but as part of private sector and dynamic market initiatives, clearly indicating failures for the others. For the most part Nigeria failed in the areas of ecosystem, good human settlement and responsible consumption.

Chapter 9 emphasizes on two major areas- (a) examining the changing pattern of the composition of energy use in the two selected countries of Asia (India and China) and (b) examining the short run and long run relationship among energy use, GDP per capita, energy intensity, use of electricity power,

extent of urbanization. Using ARDL bound test for the period 1990 to 2014 for the World Development indicator data 2017-18 it reveals that the powerhouses of global energy demand growth are led by the developing economies of Asia viz. China, India, Indonesia, Morocco, Brazil, Singapore and Thailand. In case of India a long run association has been found between energy use and GDP per capita, energy intensity, use of electricity power and extent of urbanization but no instances are for China.

Chapter 10 has made an effort to analyze the disaster management in the integrated framework where the integrated framework is based upon the analysis of the role of regulatory actions taken by three actors namely, disaster regulation, insurance regulations, and firms actions across the three stages of disaster management namely, pre-disaster, underwriting, and post-disaster stages in G-7 economies. Based on the outcomes of the current analysis, the study found two polar opposite integrated models, i.e., Isolated Best Policy Model in the case of Japan and Spiral Policy Model in the case of Italy. Rest five models fall in between the two.

Chapter 11 focuses on analyzing the role of the institutions in the biodiesel industry in Mexico in order to know if there is a relationship with the quality and maturity of the same with the ventures. Starting from a literary review, the framework of the current situation is identified, covering aspects related to formal institutions, laws, rules, regulatory bodies and the theory that supports the relationship between institutions and entrepreneurship. It is thus revealed that the institutions in Mexico have increased their maturity and incentive to increase the number of producers and distributors of biodiesel thus taking advantage of the growing market.

Chapter 12 analyses mechanism and discuss the mitigating policies like Kyoto protocol and tries to examine all aspects related to Carbon Leakage. The developed countries import carbon intensive goods. Under developed countries produce and export carbon intensive goods. In this study we show the prospect of carbon trading and various effects of carbon emission reduction policies on a theoretical framework.

Chapter 13 tries to assess the state-wise development of renewable energy in India. It is seen that the average percentage users of solar power in India has increased from 0.27% in 2001 to 0.44% in 2011. ANOVA results indicate there is significant difference among the states of India in renewable energy development in comparison to their potential capacities and there is enough scope for the development of renewable energy like solar energy in India.

Chapter 14 analyzes the trend and pattern of energy use, energy challenges of India and the sustainability through green growth strategy. It observes that energy security and sustainable development are critical issues to ensure India's economic growth and its human development. Transport sector energy demand witnesses a noticeable increase in emission and it has one of the largest programs in the world for deploying renewable energy products and systems. There is thus urgent need to have proper integrated energy policy in India with emphasis more on renewable sources of energy.

Now a brief outcome of the chapter contributions under Section II are addressed below consecutively.

Chapter 15 addresses the issue that both consumers as well as corporate houses are paying attention on environmental issues today and green products are also gaining momentum as a result. This chapter studies the concept of green marketing along with its important aspects influencing the buying decision of consumers in south Kolkata only for a sample of 266 respondents consisting of 103 males and 163 females with the help of structured open and close ended questionnaires. A mixed result is observed regarding perceptions towards green products. Thus based on such findings no such generalization can be made and have to consider heterogeneity among culture, demographic, geographical variables-which varies from place to place.

Chapter 16 focuses on Corporate Social Responsibility (CSR) activities of companies registered under BSE SENSEX and evaluating their current status in CSR activities from the perspective of the broad heading of planet and people. A detailed analysis is done to highlight the current situation of the companies towards sustainable development through Corporate Sustainability Index and statistical tools like Kruskal-Wallis test and Mann-Whitney U test to represent the contributions of these companies towards the environmental responsibilities. The study reveals the endeavors of surveyed companies towards the holistic development covering the noteworthy issue of environmental protection and sustainability, however a continuous vigil from the regulatory bodies is the need of the hour to ensure that adherence to CSR practices should not only be in mere form but in true spirits.

Chapter 17 discusses different aspects of marketing of greener products with some secondary source information. The theoretical analysis and the data reveal that there have been increasing implications of different generations towards greener or ecological products. More specifically the younger generations prefer the greener products more as compared to the older population.

Chapter 18 focuses on the aspects of green urbanization in some cities and towns in West Bengal, India. Though urbanization of an area is tried to be measured by some academicians through applying the method of indexing with available indicators and their data-driven weights, environmental issues are not incorporated there for any kind of factor analysis to identify their individual relative importance. This article intervenes at this juncture and focuses on construction of an Urbanization Index for some selected 'town area units' belonging to some selected districts of West Bengal and run a factor analysis of it on some identified environmental factors. It observes negative relationship between QVSE and IGU; positive association between IGU and PR, and positive relation between IWDS and IGU.

Chapter 19 presents a review of the vehicular population in urban Indian cities with its pattern and determinants. The transport system is shared by two parts such as public transport as well as private transport system. In an underdeveloped country it is very tough to use public transport. Due to lack of government fund, new technology, proper checking etc. private cars, buses and tracks are increased rapidly. This causes huge pollution.

Chapter 20 aims to introduce and investigate the political economy of the green innovations in the construction industry. This chapter emphasizes that the effectiveness of the green innovations in the construction industry can be fostered by effective political economy and strategies.

Chapter 21 addresses that environmental degradation and concern for environmental protection and maintaining ecological balance, in the last few decades has become the subject of serious political contention and public outcry. Eco-development demands structural and moral transformation of the current social, political and value system. It presupposes a participatory political structure that allows maximum devolution of power to the local communities. And such a coordination and cooperation between development discourse and survival of nature can be found in the works and ideas of Mahatma Gandhi.

Chapter 22, the final chapter of the book, speaks of the energy security and economic growths are interrelated and South Asia is at a critical juncture today. Development is the overriding priority for the region because of the high incidence of poverty but energy is proving to be a critical constraint. The entire region is suffering from an acute energy crisis. The chapter explores new alternatives of energy sources of South Asian States, searching for relationship between energy security and economic growth, and re-thinking about an alternative policy options regarding energy security in South Asia.

The summary results of the chapters in Section I show that opening up of the economies in different trade sectors and foreign direct investments have no doubt improved the economic growths of the trading partners but have been equally damaging in terms of environmental degradation. Pollution Heaven

Hypothesis has been seen as the dominating exposition compared to the Pollution Hallo Hypothesis. The studies included in Section II indicate that there have been growing consumers' perceptions towards green and environmentally friendly products particularly the population of the millennial age groups. It is also observed how green urbanization can be promoted by the help of selected indicators to get a sustainable urban planning and habitat. Hence, it is prescribed through this book project that the over-emphasis upon free flow of goods and capitals across the borders should be made screening and the developing or backward trading zones can be allowed to protect their own environment to produce a good global environment to comply with the millennium sustainable developmental goals as proposed by the United Nations.

It is now the information that the proposed book project has drawn closer to reality. I look forward that the said research outcome will help out to the academicians, environmentalists and policy makers all around the world to have a better understanding of the sustainability issues from the global perspectives.

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Acknowledgment

Chapter 15
Perception of Indian Consumers Towards Green Products

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ABSTRACT

Both consumers and corporate houses are paying attention to environmental issues, and green products are gaining momentum as a result. This chapter studies the concept of green marketing along with its important aspects influencing the buying decision of consumers in South Kolkata only. Convenience sampling method was adopted to select the total sample of 266 respondents consisting of 103 males and 163 females with the help of structured open- and closed-ended questionnaires. Both primary and secondary data collection methods were adopted here in this research. Independent variables are environment friendly, packaging, innovative, quality, brand value, and dependent variable is purchase intention. A mixed result is observed regarding perceptions towards green products. Thus, based on such findings, no such generalization can be made and have to consider heterogeneity among culture, demographic, geographical variables, which varies from place to place.

INTRODUCTION

During the current period, both consumers as well as corporate houses are focusing on environmental issues and as a result, green products are also accelerating in the market domain. The corporate houses are now taking green marketing as their promotional strategies to reach more customers in the marketing mix coordinator in terms of several things like product, price, place and promotion. Concept of "green marketing" is a trend in various countries and according to Ottoman (1998), Polonsky (1994), Peattie (1992), the "green marketing" concept came from the perspectives of "sustainability".

Straughan and Roberts (1999) opined that the concerns for environment have evolved through many phases. From early sixties it began with the "greening concept, concentrating on pollution and energy conservation". After that increased social and political pressure- organizations have to shift the focus on recycling, packaging issues, redesigning the product, and developing alternative products. In nineties, concern for environment has become one of the most burning issues. Organisations from United States and Europe have realised that customers purchase decision will be on the basis of environmental considerations in future – this leads to future opportunity for green marketing. Today, green marketing, is also known as sustainable marketing and environmental marketing involve product or service designing, promoting that, fix up pricing and take care distribution as per the customers' want and the need, with less environmental damage (Jain & Kaur, 2004).

Green marketing is a concept to protect the environment for the future generation and has an impact on the safety of the environmental. Due to growing concern of environmental protection, emergence of a new market is witnessed - which is the green market. Companies interested to cater this market, need to focus on green in all aspect of their business and consumers prefer those companies that have green compliance and are ready to pay higher price for that. Today green marketing is not a simple terminology but also is a marketing strategy with great future potentiality.

As per American Marketing Association green marketing is the marketing of products that are environmentally safe. This may be explained as- "holistic management process responsible for identifying, anticipating and satisfying the requirements of customers and society, in a profitable and sustainable way" (Peattie, 1995). A holistic and responsible strategic management process that identifies, anticipates, satisfies and fulfils stakeholder needs, for a reasonable reward, that does not adversely affect human or natural environmental well-being (Charter, 1992).

Most of the firms have started focusing on sustainable development framework which is regarded as green marketing and are environmentally friendly. Today managers may promote green marketing to earn profits and is able to satisfy customers' needs, which, is now used by many companies to increase their competitive advantage due to concern over environmental issues.

At present the companies have to focus on the consumers' needs and wants and on consumers want to recognize themselves with those companies that are green compliant and are willing to pay more. As result- green marketing is not only an environmental protection tool but also a marketing strategy (Yazdanifard & Mercy, 2011). Marketers need to provide training to their employees, especially their sales representative to give them knowledge regarding promotion of the green product effectively by clearly targeting to the consumers.

Today goal of the organization is to satisfy human needs and wants so that both the buyers are sellers are mutually benefited out of this. Mintu and Lozada (1993) described green marketing as the marketing tool to satisfy both organizational and individual goals through taking care of preservation, protection and conservation of environment. Due to increased media coverage, greater awareness related to environmental issues, incidence of industrial disasters and the rise of activist groups concern for the environment has been rising (Kalafatis et al. 1999). As a result, from early nineties concern for environment are increasing because of the pressure of various stakeholders, governments, environmentalists, non-government organisations (Ghoshal, 2011). This leads to green marketing approach wherein the objective is to preserve environment and satisfy customers for long term profits. Yakup and Sevil (2011) pointed out that global warming, greenhouse effect, pollution, climate changes etc. were areas of concern from the beginning of nineteen eighty. Detrimental impact on environment work as catalyst for green marketing activities and Boztepe (2012) opined that green consumers would refuse any products that may affect their health.

Golkanda (2013) emphasised that organizational focus is to enhance consciousness of consumers related to environmental threats and involve them in social charities to attract for eco-friendly products over conventional products. Corporate using green marketing as promotional tools have to modify, improve design and standardized their products will require innovation and provide competitive advantages also. Green consumers are willing to pay a higher price for environmentally friendly products (Laroche et al., 2001; Peattie, 2001). There are several factors affecting the buying-decision process of consumers. Previous researchers have identified many factors; environmental knowledge (Mostafa, 2006), perceived product price and quality (D'Souza et al., 2007), company's environmental reputation (Schwepker & Cornwell, 1991), environmental concerns (Phau & Ong, 2007), credibility of environmental advertising (Thøgersen, 2000).

The remainder of the paper is structured as follows. The next section documents a brief review of related literature followed by the discussion on the issues of research methodology including hypotheses formation and data collection. The final section concludes the paper after describing the empirical finding in previous section.

LITERATURE REVIEW

Environmentally friendly products based on consumer perspective are the product that are not toxic for the environment, good for health, have a responsibility to the social environment, and good for the earth (Durif et al., 2010). Ottman (2011) stated that firms which are applying green marketing will receive grants and loan from the government, to set up technology for the development. Toyota's Prius offers several benefits to the consumers and natural environment and is one such example (Halbright & Dunn, 2010). Chandra (2009) mentioned that for charging high price, firms need to differentiate its quality, specification and appearance. Eze and Ndubisi, (2013) described that low-price sensitive consumers are willing to pay more and perceive the eco-friendly product more than conventional product in terms of price and quality. According to Chen (2010) consumers prefer green products and will bring positive impact in relation to brand equity. Empirical researches have shown that corporate with higher social responsibility influence the consumers purchasing decision positively (Mohr et al., 2001).

The eco-friendly packaging is an external attribute of the product, as packaging is an external element of product and packaging is an indispensable element for sales (Ampueru and Vila, 2006). Now packaging is a cause of pollution and necessity for eco-friendly packaging is gradually is increasing (Min & Galle, 1997; Rokka & Uusitalo, 2008). Previous studies have shown that today's consumers prefer eco-friendly packaging products over conventional products (Magnier et al., 2016; Rokka & Uusitalo, 2008; Magnier & Schoormans, 2015). Packaging too also play an important role in green marketing as through packaging and its label company has to attract consumers within few seconds and must be eye catching (Danta's et al., 2004). Coca-cola was also another example of innovation with focus to packaging. Almost nearer to two decades they have started about the PET- Bottle. Green product's quality is also a major contributing factor for most of the consumers as green consumers apparently trust on these brands and they do not like to compromise with the product quality which also must be environment friendly (D'Souza et al., 2006). Gan et al. (2008) opined that like conventional product, in case of green product also brand name, quality, price have impact on purchasing decision. Packaging too also play an important here in green marketing as through packaging and label has to attract consumers within few seconds and must be eye catcher (Danta's et al., 2004).

Previous researchers have shown that one of the major elements of green product development is the promotion of eco-labels on the products, which is an effective tool that which can provide quality characteristics of the tangible product and also provide environmental image of the firm (Sammer & Wustenhagen, 2006). In the eyes of consumers, eco-label is an innovation and has an important role in consumers' decision of purchase (Pedersen & Neergaard, 2006). Consumers having environmental knowledge will differentiate the products which are more environmental friendly than the conventional products, in this juncture eco-labels are important (Rashid, 2009). Eco-label also creates a distinctive image to the consumers' cognition and positioning of a product (Purohit, 2012). The market demand for sustainable products is gradually increasing as environmental pollution has also increased and today's consumers' are concerned that it is related to morality (Mazar and Zhong, 2010). Due to these reasons, ethical issues and concerns for health, consumers have changed their behaviour toward purchasing sustainable products. Many previous studies have shown that sustainable products have a competitive advantage over the conventional products (Grankvisit et al., 2004).

Product's sustainability is one type of information about the product, and can be communicated to consumers via certification. Certification gives confidence to the consumers regarding the product's value or safety (Botonaki et al., 2006). Certifications of the sustainable attributes can be divided into two parts (Magnier et al., 2016). According to them one such part is the products' internal sustainability and the second involves the products' external sustainability. Eco-friendly products secure most of the sustainable product at any market place (Chen, 2007). "There are two typical and discrete methods of producing eco-friendly products: one is to make the product with eco-friendly ingredients and the other is to pack the product with eco-friendly packaging" (Soyoung et al., 2016). The eco-friendly ingredient is an internal attribute of a product, and the eco-friendly ingredient is directly related to product itself. Most talked about eco-friendly ingredients are in organic products (Ophuis & Van Trijp, 1995). Today's consumers consider organic products beneficial and gentle for the environment and for health (Hughner et al., 2007; Grankvisit and Beil 2001; Nilkins and Hillers, 1994).

No doubt packaging leads to pollution –previous literatures also support that and minimise that care-ful packaging is required. Consumers are avoiding excessive packaged products and consider buying organic products nowadays (Tobler et al., 2011). "Packaging is the first element of a product consumer's encounter before making their purchasing decision" as observed by Silayoi and Speece (2004). "The visual signals (e.g., size, color, and shape) of packages primarily affect consumers' product evaluation" opined by (Areas et al., 2011; Rettie and Brewer, 2000). Therefore, we may say that consumers primar-ily evaluate products' sustainability via the level of packaging. In accordance with 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". Less pollution, recyclable products, biodegradable packaging, ecologically safe products are the main talking points of green marketing which ultimately leads to sustainable development. No doubt, green marketing is a tool which is dealing with the safety of the environment and at present in India green itself is becoming an identity of eco-consciousness. Environmentally preferable products are generally costlier to purchase than other alternative products. Green consumers are willing to pay a higher price for environmentally friendly products (Laroche et al., 2001; Peattie, 2001).

There are several factors affecting the buying-decision process of consumers. Previous researchers have identified many factors; environmental knowledge (Mostafa, 2006), perceived product price and quality (D'Souza et al., 2007), company's environmental reputation (Schwepker & Cornwell, 1991), environmental concerns (Phau & Ong, 2007), credibility of environmental advertising (Thøgersen,

2000). Several researches also conducted research on consumers green purchasing intentions, among these, many researchers have pointed out that the determinants of consumers' green purchase behaviour, but majority of the research have been conducted in industrialized countries (Bleda & Valente, 2008; Chatterjee, 2009; Chan, 2004; Davis, 1993), but the actual findings often contradict each other (Rahbar & Wahid, 2011). As a result, the findings may only be relevant in certain cultural, demographical and geographical context, and time factor needs to take care of. Complexity in green purchasing behaviour of consumers has been evident, and under different cultural, social and demographical contexts generalization is not often meaningful.

According to Makower's (2011) finding, environmentally friendly products are less attractive in the market. Environmentally friendly products only able to capture 1% market share for each product category, because consumers are reluctant to pay more for environmentally friendly products than conventional products (Gan, et al., 2008). Environmentally friendly products from the consumer perspective are a product that is non-toxic for the environment, "good for health, have a responsibility to the social environment, and good for the earth" (Durif et al., 2010). Coca-cola was also another example of innovation with focus to packaging. Almost nearer to two decades they have started PET-Bottle manufacturing. Green Product's quality is also a major contributing factor for most of the consumers as Green consumers apparently trust on these brands and they do not like to compromise with the product quality, also expect that products must be environment friendly (D'Souza et al., 2006). Gan et al. (2008) opined that like conventional product, in case of green product also brand name, quality, price have impact on purchasing decision.

No doubt green products are costlier than the conventional products (Veloutsou et al., 2013). Customers' willingness to pay with such premium may be because of brand equity. According to Aaker (1991) brand equity is the set of both brand assets and liabilities linked to the brand, its name and symbol that add value or subtracts value from a product or service including brand loyalty, brand awareness, perceived quality and brand associations. Previous studies have shown that eco-centric image of the firm have positive impact on consumers' cognition due to customers' satisfaction and trust. Similarly, previous studies also informed that there is a positive relationship between customer satisfaction and loyalty, which ultimately leads to repeat of purchase. Several researches have been conducted on green purchasing intentions. Among these, many researchers have identified the determinants of consumers' green purchase behaviour, majority of them have been conducted in industrialized countries (Bleda & Valente, 2008; Chatterjee, 2009; Chan, 2004; Davis, 1993) only. However, all these results had showed variances (Rahbar & Wahid, 2011). As a result the results are relevant only to homogeneous cultural, demographical and geographical factors. To study the consumers purchasing behaviour related complexities generalisation will not be at all fruitful and different variables, factors needs to be studied for that reasons.

RESEARCH METHODOLOGY

This research tries to study the concept of green marketing and what are important aspects of it that are influencing the buying decision of consumers. The research objectives are:

- To understand the relationship between different variables affecting consumers' buying decision for green products.

- Factors influencing consumers' buying decisions for green products.

To explore the relationship between consumers' buying decisions and green products, the present research work addressed the following hypotheses:

- **Null Hypothesis:** H_0: There is no such factor in influencing Consumers' buying decision for green products (has no relationship with purchase decisions of green products.)
- **Alternative Hypothesis:** H_1: There is factor in influencing Consumers' buying decision for green products (has a relationship with purchase decisions of green products)

At this research we mainly focused on literature review and quantitative research as literature review gives us direction to understand the basic knowledge of the subject, helps us to identify controversial and neglected areas also which have been discussed. This also helps us to position the study within the context and to construct the empirical research related to theoretical framework. Here the quantitative method is applied to measure the amount and quantity. We used survey as the method to collect and gather data and the questionnaire is built related to the context of the study. In this study, the questionnaire was framed on theoretical knowledge. According to analysed result shown, the final analysis of study was well supported to previous literature review. Moreover, the pilot test was executed after building the questionnaire in order to rectify the mistakes. We selected variables as per extensive literature review.

The population for this research was all consumers of the market who make the purchases of green products. The study was conducted in south Kolkata only and convenience sampling method was adopted to select the total sample size of 266 respondents consisting of 103 males and 163 females. However, primary data was collected from the respondents with the help of structured opened and closed ended questionnaires. Reliability regarding to consistency of this study, the reliability is assessed the homogeneity through using Cronbach's alpha (α) is evaluated as one of the most common measurement tools to test the internal consistency of the instrument. The result of measurement is number fall between 0 and 1; the acceptable range is greater than 0.7 (Heale & Twycross, 2015). Primary data was complemented with secondary data as well through publications on the said topic from different journals, magazines, and internet. The responses of the measurement were scored using a 5- point Likert scale and have response answer –Strongly disagree to strongly agree. Here, in this research independent variables are environment friendly, packaging, innovative, quality, brand value and dependent variable is purchase intention. We did multiple linear regressions as statistical tool.

FINDINGS AND DISCUSSIONS

The Regression Coefficient R = 0.83 or 83% means that correlation between dependent variable and independent variables is positive. The coefficient of determination $R^2 = 0.70$, which indicates that 70% of variation in dependent variable is explained by independent variables. The F-test value of 121.23 is significant because the significance level is = 0.00, 0.00 is less than 0.05 means correlation between dependable variable and independent variable is statistically significant and the regression model is

Table 1. Details of demographic characteristics of the respondents

Gender	Male	103
	Female	163
Age	21-30	109
	31-40	71
	41-50	47
	51-60	35
	61-70	4
Educational Qualification	Higher Secondary	41
	Graduate	147
	Post Graduate	88
Monthly Income	15,000-25,000	78
	25,001-35,000	50
	35,001-45,000	67
	45,001-55,000	39
	55,001-65,000	32

Source: Authors' own calculation using primary survey data

Table 2. ANOVA results

Model	Sum of Squares	df	Mean Square	F-Statistic	Sig
Regression	217.88	5	43.57		
Residual	93.45	262	0.35	121.23	0.00
Total	311.33	265			

Source: Authors' own calculation using primary survey data

Table 3. Model summary

Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate
1	0.84	0.7	0.69	0.59

Source: Authors' own calculation using primary survey data

Table 4. Regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	Beta	Std. Error	Beta			Tolerance	VIF
(Constant)	-0.74	0.17		-4.29	0.00		
envfriendly	0.29	0.04	0.26	6.06	0.00	0.61	1.63
innovative	-0.20	0.04	-0.21	-4.52	0.00	0.52	1.92
quality	0.90	0.06	0.67	14.26	0.00	0.51	1.93
packaging	-0.12	0.03	-0.14	-3.62	0.00	0.72	1.38
brandvalue	0.33	0.04	0.31	7.18	0.00	0.58	1.70

Source: Authors' own calculation using primary survey data

valid. Again, all the independent variables brand value, environment friendly, packaging, innovative, quality all are significant as per our study results. According to the results of regression analysis, we have discarded Null hypothesis and accepting the alternative hypothesis. As per our study more the products will be environmentally friendly more will be the purchase intention.

Consumers prefer innovative products but not at the cost of health and environment. Innovation should be backed by certification or authenticity otherwise it will have no meaning. Mostly innovation is related to cost curtailment and for the direct benefits of the organization. Quality is definitely related with the purchase intention. Packaging is important but consumers do not prefer excessive packaging –more the packaging less will be the purchase. Consumers generally prefer appropriate packaging and it should be environment friendly also. Again, brand value like conventional products has positive impact on consumers' willingness to buy green products. Similarly, multicollineraity aspects we also checked here and it is well below 2.

CONCLUDING REMARKS

Because of green movement and its popularity consumer's consumer awareness and motivation are one of the driving forces that bring changes in the market place and we are witnessing more eco friendly products as a result. However, in comparison with consumers in the developed countries, the Indian consumers are much less aware of global warming issues. Successful marketing always try to recognize current trends of the market and position their products in such a way that supports buyer intentions. Green colour is slowly becoming the symbol of eco-consciousness of present generation people of India.

Today, many organizations have realized their responsibility to protect the environment and focusing on products and production processes "go green", as it reduce pollution and increase profits (Hart & Ahuja, 1997). Green marketing- today is a creative opportunity for the organizations to innovate in such a manner that invites difference and achieve business success. Because of lifestyle modification and change of consumption habits of the consumers- particularly in industrial world is happening due to focus on marketing –we have witnessed environmental damages also. As a result marketing is not above all the criticisms particularly for the satisfaction of the customer need and want with short term objective with environmental degradation.

Today, marketing can be used as an important instrument to attract consumers who have a concern for environment friendly product and can contribute to more sustainable forms of society.

India's rapid GDP growth rate, highly negative environmental impact - demand for eco-friendly products may ensure a cleaner environment. Consumers usually prefer, trust the performance of well known established brands, this may be an opportunity for green products also.

Green products are gaining importance today and green marketing is an important tool for the protection of environment for future generation no doubt. As a result, we have witnessed a new market totally with high prospect. Coca-cola was an example of innovation with proper focus to packaging. Almost nearer to two decades they have started about PET- Bottle. Green Product's quality is also a major contributing factor for most of the consumers as Green consumers apparently trust these brands and they do not like to compromise with the product quality, also these products must be environment friendly (D'Souza et al.,2006). Gan et al., 2008 opined that like conventional product, in case of green product also brand name, quality, price have impact on purchasing decision. Packaging too also play an important here in

green marketing as through packaging and label it has to attract consumers within few seconds only and it must be eye catching (Danta's et al., 2004). No doubt green products are costlier than the conventional products (Veloutsou et al., 2013) and customers' willingness to pay with such premium may be because of brand equity. The findings of our study are also echoing on these lines and explained as well.

This research was conducted to study the relationship between the variables that actually affect the consumers buying decision related to green products and the factors responsible for that. The research has clearly identified a positive relationship and green it may be beneficial for the green marketers to develop marketing mix strategies. According to Makower's (2011), environmentally friendly products are less attractive in the market even today. Environmentally friendly products only have secured 1% market share for each product category as consumers are really reluctant to pay premium price for environmentally friendly products than conventional products (Gan et al., 2008). Future research could have been done based on this aspect also.

The convenience sampling technique was used because of time and cost constraints. Further research is required with a greater number of sample and geographical coverage. Several researches have been conducted on green purchasing intentions and among these, many researchers have identified the determinants of consumers' green purchase behavior but majority of them have been conducted the research in industrialized countries only (Bleda & Valente, 2008; Chatterjee, 2009; Chan, 2004; Davis, 1993). Most interesting aspect is -the results of those studies differ from each other (Rahbar & Wahid, 2011). Thus based on such findings no such generalization can be made and have to consider heterogeneity among culture, demographic, geographical variables-which varies from place to place. Also we need to study the role of government of different countries regarding their contributions for green products. Another important aspect could be the role of government of the country to develop the platform for green products. Another important area we need focus-the role of media - particularly their role to aware the general people towards green products.

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KEY TERMS AND DEFINITIONS

Convenience Sampling: Convenience Sampling is a type of non-probability sampling method. The sample is taken from a group of people easy to contact or to reach.

Correlation: It is a statistical measure that captures the degree of associations between two variables. Positive correlation means the relation between the variables is direct and negative correlation means inverse relation between the two.

Environmentally Friendly: The term *environmentally friendly* is related to product sustainability and marketing, and referred to goods and services and follow guidelines and policies that claims minimal, or no harm on the environment.

Green Products: Green products are denoted as those products that are less detrimental to environment and human health than conventional products. Green products may be developed from recycled components or be manufactured through more energy-conservation, and will have less packaging. Green, environmental and eco-marketing are parts of the new marketing approaches today.

Kolkata: It is one of the four metropolitan cities in India.

Packaging: Packaging is the blending of science, art and technology to protect products for distribution, storage, sale, and is used for government, business, institutional, industrial, and personal use.