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Corporate Accountability for Green Growth- An Exploratory study from Academic Perspective

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Abstract

Climate change attributed to emission of greenhouse gases from human activities is a severe threat to our survival. The global climate is invariably changing and presently it is a dominant threat for businesses of the whole world. The importance of green growth has been increasing in recent years in the face of burning environmental challenges. The corporate social responsibility (CSR) is gaining momentum and the natural environment is increasingly being observed as a pivot of CSR. Following CSR voluntarily could be beneficial for the environment and accordingly, the study explores the corporate accountability for green growth as an element of CSR. A survey was conducted in the higher academic institutions to identify key factors for promoting green growth .The findings in this study after applying Factor Analysis identified important factors which can encourage green growth by corporate action in the present climate change scenario.

Key Words: Climate change, Green Growth, CSR, Academic, Collaboration

1. Introduction

Climate change is a phenomenon being experienced by the human being since its origin on the earth. The impact of a major change in the earth's

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climate due to greenhouse gas emissions and other human actions presents formidable challenge facing human kind in the decades to come. The manifold impact of climate change on life in our planet is being studied in detail by the Intergovernmental Panel on Climate Change (IPCC) and is also being discussed at annual meetings of the Conference of Parties to the UN Framework Convention on Climate Change (UNFCCC) adopted at Rio de Janeiro in 1992 (CSO, 2013).

According to UNFCCC (2007) report it is highlighted that the effect of climate change necessitate that the local climate variability that people have earlier experienced and have adapted to is changing and changing at relatively great speed. This report also highlighted that the impact of climate change is the rise in average global temperature (global warming). Due to global warming, the type, frequency and intensity of extreme events, such as tropical cyclones (including hurricanes and typhoons), floods, droughts and heavy precipitation events, are supposedly to rise even with relatively small average temperature increases.

Combating climate change will need adjustments and changes at every level – from community to national and international level. It is widely recognized worldwide that climate change is a serious problem that must be effectively addressed within the general framework of sustainability transition so as to reduce the pressure on natural resources and improve environmental risk management.

The corporate response to climate change is spreading rapidly and growing in intensity due to growing consensus among scientists and governments on the urgency to act on climate change (Jones & Levy, 2007). However, academic research on corporate responses to climate change has only recently begun to emerge (Kolk & Pinkse, 2004; Okereke, 2007; Phillips, 2010). According to Sussman and Freed (2008), all businesses need to be alert to the potential threats of climate change. Businesses may be exposed to systemic risks across the entire economy and specific risks at the sector, industry and company levels as a result of climate change (Hoffman & Woody, 2008).

Increasing scientific evidence, regulatory pressure, pressure from the consumers, nongovernmental organizations (NGO) are pressurising

companies to consider climate change in their strategic management (Sprengel & Busch, 2011;Weinhofer & Hoffman, 2010). Although the future of the climate change agreement has been put on hold because of a variety of international, domestic, political and economic reasons but the corporate sector, however, has become very proactive to reap the opportunities of green growth economy by combating climate change.

The attention on green issues can be seen as a signal that pro-environmental concerns have emerged as a potential strategic concern for businesses (Polonsky & Kilbourne, 2005; Menon & Menon, 1997). The natural environment is increasingly being observed as a pivot of corporate social responsibility (CSR). Research on corporate accountability and environmental sustainability in the management literature is increasing because of common environmental, economic, and social concerns (Montiel, 2008). Fombrun, Gardberg and Barnett (2000) believed that companies are increasingly recognizing that a strategically integrated CSR portfolio helps a company build pro-environmental brand.

1.1 Green Growth

Green stands for ecological sustainability and includes many different concerns including but not limited to, air, water and land pollution, energy usage and efficiency, waste generation and recycling. A green life is a superior and healthier life for present and future generation. Green growth has been proposed as means for growing emerging economies, such as Brazil, China, India and Indonesia, to address greenhouse gas emissions and environmental degradation that their growth has brought (Jupesta et al., 2011). According to the report of "Urban Green Growth strategies for Indian Cities", a green growth approach integrates economic aims such as poverty reduction, job creation and social development with environmental goals such as sustainability, resource productivity, climate response, and energy security.

The budding importance of green growth for developing countries is reflected in the title of the OECD's most recent publication on the subject, "Putting Green Growth at the Heart of Development" (OECD, 2013). Accordingly, the World Bank report (2012) has suggested that green growth is necessary and economically efficient, vital to the future of developing countries as remarkable economic and social gains are expected from this growth. (OECD, 2013).

"Green Growth" or "Green Economy" is being followed by different organizations worldwide as this new model can bring forth various solutions to cope with the existing environmental challenges such as energy conservation and renewable generation, pollution and waste reduction and more efficient use of resources. Companies worldwide are also increasingly recognizing that the greening of their own business or value chain may increase competitiveness and create new markets both from short term and long term perspective. While, this innovative model of resource-efficient growth ought to be normal, it is not scaling up fast enough relative to the erosion of natural resources (Oppenheim, 2013).

Environmental or green action also produces new business opportunities. New business models are also emerging. Energy-saving companies, for example, provide energy-saving solutions to other firms and public buildings (OECD, 2011). The International Energy Agency (IEA) estimates that the 17% (USD 46 trillion) increase in energy investment is required globally between 2010 and 2050 to deliver low-carbon energy systems. This report also highlighted that green growth strategies need to encourage greener behaviour by firms and consumers,as environmental performance is going to be the major competitive factor in the future and leading companies are increasingly finding innovative ways of mainstreaming sustainability considerations into their core business.

1.2 Corporate Social Responsibility (CSR)

The Corporate Social Responsibility (CSR) has a long history, which evolved with the development of businesses and that has been meeting the emerging needs of the society. The first definition of CSR was suggested by Bowen (1953), as the social obligation "to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (p. 6). During 1990, a few more definition of CSR emerged. Hopkins (1998) defines CSR, where he emphasized on treating internal and external stakeholders ethically or responsibly. Elkington (1997) introduced his famous concept Triple Bottom Line which focuses on three issues, namely, social responsibility (people), environmental responsibility (Planet), and economic responsibility (profit).

The definition of corporate social responsibility still remains contested. Some define corporate social responsibility as "actions that appear to further some

social good, beyond the interests of the firm and that which is required by law" (McWilliams & Siegel, 2001). In general, CSR is characterized by responsible entrepreneurship, voluntary initiatives going beyond legislative requirements and contractual obligations, and activities to benefit the employees, business relevant groups (including the society as such) or the environment (Caroll, 2009).

In all definitions, corporate social responsibility involves companies contributing to society. The concept of corporate social responsibility (CSR) is gaining momentum across the world. The traditional method of rendering services to the society has changed and new forms of co-operation have emerged. Corporate social responsibility is not only legally binding to follow and implement. Voluntary action on the part of the companies is required to contribute for the betterment of the society if CSR is to be successfully strategically implemented.

2. Research Gap

The researches in green growth area primarily focused on opportunities, challenges and initiatives. Most of the studies are found from international perspectives. The studies have produced significant knowledge and the studies have established important research gap in the Indian context. Also, there are no exploratory studies done involving the academic fraternity regarding the CSR policies that contribute to the betterment of the society from economic and social perspectives.

In this background, this study attempts to investigate the awareness of green growth in the academic fraternity as well as the important factors which can promote green growth as an element of CSR. This study has two aims:

1. To study the awareness of the academia about green growth in the light of CSR.

2. To identify the important factors which promote green growth in the present scenario of climate change.

With these stated objectives in view, this study has been conducted on the basis of available conceptual and empirical studies on green growth perceptions in the corporate sector. Regarding the source of data, the study

has used primary and also secondary data, e.g. literature survey as included in, journals, magazines, books, newspapers, and various websites.

3. Literature Review

Awareness of climate change is a fundamental understanding of the natural world, which is essential for sustainable development. Businesses worldwide are socially accountable for promoting sustainable development there by preserving the finite natural resources to meet the necessities of the future generation.

Green stands for ecological sustainability and green life is an improved and healthier life for present and future generation. According to AFED (2011), it is considered as a new approach to solve the interconnected problems in a comprehensive manner. Going 'Green' is fast becoming a trend and necessity in today's business worldwide. The importance of green growth is growing as it can bring forth solutions to the present environmental challenges imposed by the existing development models and the future threats of climate change. Accordingly, the World Bank (2012) suggests green growth should focus on what needs to be done in the next five to ten years to generate immediate benefits and avoid getting locked into unsustainable paths. Dutta (2016) stated that environmental CSR (corporate social responsibility) initiatives can be viewed as green growth initiatives and can be implemented for corporations to remain competitive in industries. Fostering green growth cannot be achieved by any one party alone, and requires the collaborative efforts of a range of stakeholders. To achieve this, companies need to set policies that promote green growth and for that companies need to involve community to work together to address this issue (ACCA, 2012). Bathmanathan and Hironaka (2016) mentioned that green corporate image is considered to be the driving factor in the current scenario and stakeholder's green awareness of the firm encourages growth of businesses. This study focused on several green corporate initiatives and discussed how these could be essential for business. Lai and Wong (2012) stated that there is a positive relationship between environmental management and operational performance in a green economy. The relationship between green growth and sustainability has been highlighted from automobile industry perspective by Saufi, Daud and Hassan (2016). Corporate accountability for green growth is emerging as green growth is very important in the light of the current

environmental crises. Therefore, in the light of CSR from Indian perspective, companies themselves could be the driving force in beginning collaborations outside of the companies which can encourage other stakeholders to execute their own green projects with the support of the companies.

4. Methodology

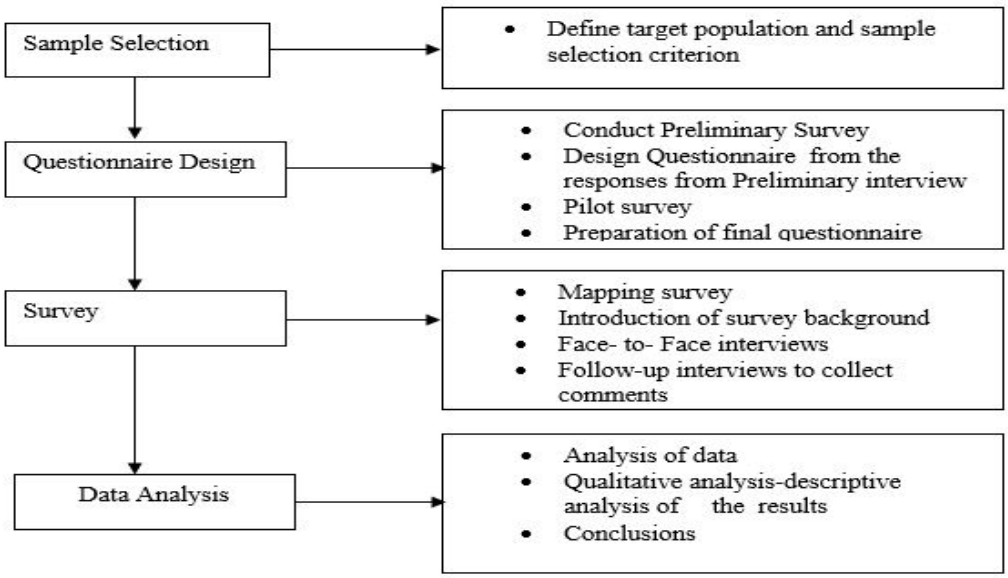
The main objective of this study is to better understand the awareness of student's fraternity towards green growth and to assess how students categorize company's accountability towards green growth. The choice of research approach is dependent on the nature of the research to be conducted. An exploratory and qualitative approach is adopted in this study. The major objective of exploratory research is to identify and define the problem and scope by helping to arrive at the best research design, method of data collection and sample, which is characterized by highly flexible, unstructured and at times, informal research methods (Easwaran, Singh, & Sharmila, 2010). Therefore, an exploratory approach is followed since the outcome of this research can provide significant insight into a given situation.

On the other hand, the primary aim of a qualitative research is to provide a complete, detailed description of the research topic. This research is primarily subjective in approach as it seeks to understand human behavior and reasons that govern such behavior. The interview conducted in this study enabled the researcher to understand the world around the respondents in relation to the particular context. Therefore, this combined approach has become effective in obtaining specific information and their opinions, in this social context of the particular population. Figure 1 provides an overall view of the methodology used for fulfilling the research objectives.

4.1. Data collection tool

In any research, the questions are the primary tools in collecting necessary information from the respondents of a survey. In this study, a preliminary interview was conducted. Harrell and Bradley (2009) described individual interviews can often provide in depth context and discussion related to the subject and also offer an opportunity for the researcher to become familiar with the needs assessment and its objectives. The participants sought for this interview were senior executives with designated responsibility in some companies and

Fig.1: Methodology Framework adopted in Research



also some post graduate students. In this survey, one-to-one interviews with the company manager and the students were conducted. The responses from one-to-one interviews of a small population of 10 numbers enabled the researcher to frame the questionnaire.

The researcher has used a questionnaire and a five point balanced Likert scale 'Strongly Disagree (= 1) and Strongly Agree (= 5) for measuring perception towards green growth from the respondents. The reason for asking questions in a structured form was to improve the consistency of the wording used in doing the study at different places which increases the reliability of the study by ensuring that every respondent is asked the same question (Nargundkar, 2004).

Before the main field work, a pilot survey of the questionnaire was undertaken with twenty (20) students in a reputed university in Kolkata. Besides answering the questionnaire, the respondents were also asked whether anything important or meaningful had been ignored in the questionnaire. The final questionnaire was developed based on the feedback from this pilot survey and based on these answers; a few modifications were made to enhance the wording clarity of the questionnaire. Initial number of statements/ items had been reasonably and considerably culled by this researcher during the review of his data collection and observations as suggested by Gable & Wolf (1993).

4.2. Type of data and sample size

In this study, primary data has been used. *Primary Data* originated for the specific purpose of addressing the problem at hand.Hundred questionnaires were distributed and purposive sampling method was adopted by the researcher and selected the samples from three higher institutes; two universities and one management institute in Kolkata region. 87 total questionnaires were returned with a response rate of 87 per cent. After examination only 75 questionnaires were found usable. The data collected from the respondents were coded, tabulated and analyzed into logical statements using exploratory factor analysis and SPSS 19.0 was the statistical software used. Secondary data was collected from the available literature, journals and web search wherever necessary.

Table 1 depicts the demographic information about the respondents which reveals that 87% of the respondents were in the age group of 20-25 and 13% of the respondents come under 26-30. 36% of the students from management background, 27% from engineering and the 12% from post graduate commerce.

Table 1: Demographic Profile of the Respondents (N=75)

Age	%
20-25	87
26-30	13
Gender	
Male	59
Female	41
Student background	
Management	36
Engineering	27
Commerce	12

4.3. Interview

According to (Talbot, 1995), data collection begins with the researcher deciding from where and from whom data will be collected using methods

such as interviews, participant observation and narratives and case histories. To review the research objective, the researcher relied on interviews. Thirty students were selected for interview from three institutes. Prior to the interview, the participants were given a brief description of the research objectives so that they can understand the subject properly. This interview process helped to interpret and better understand the complex reality of the study. From the interviews, the comments and suggestions were analyzed in the context of the theoretical framework established.

4.4. Data Analysis and Interpretation

Factor analysis was carried out to reduce the density of the total questionnaire, on top of minimizing the occurrence of shared variance of measured variables used. Cronbach's alpha is a coefficient of reliability that is generally used to measure the internal consistency or reliability of a psychometric instrument. Conceptually it is recommended that the Cronbach alpha exceed 0.7 for each scale (Haladyna 1999; DeVon, *et* al., 2007, Nunnally, 1978).

Table 2: Reliability Statistics

Cronbach's Alpha	N of Items
0.795	20

The results of the two tests are assembled and presented in Table 2 and Table 3. The captured data was run in SPSS 19.0 which shows that Kaiser-Meyer-Olkin (KMO) measure of sampling Adequacy was 0.652. This suggests that the data is adequate for factor analysis and indicates the factors extracted will account for fair amount of variance but not a substantial amount. The Bartlett's Test of Sphericity suggests that there are very low chances of obtaining the result of the null hypothesis as true. Hence we reject the null hypothesis and accept the alternative hypothesis i.e. attributes are correlated with the population. The significance value of .000 also tells us that there is a correlation of variables with each other. Also, the p-value was less than 0.001 (= 362.770), indicating that factor analysis could be carried out.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.652
Bartlett's Test of Sphericity	Approx. Chi-Square	362.77
	df	190
	Sig.	0

Table 4 shows total variance explained lists and the eigen values associated with each factor before extraction, after extraction and after rotation. Before extraction, it has identified 20 linear components within the data set. The eigen values associated with each factor represent the variance explained by that particular linear component and the table also displays the eigen value in terms of the percentage of variance explained. Factor 1 explains 21.540 % of total variance and it appears that the subsequent factors explain only small amount of variance. The table extracts all factors with eigen values greater than 1, which leaves us with six factors. In the final part of the table, the eigen values of the factors after rotation are displayed. Rotation has the effect of optimizing the factor structure and one consequence for these data is that the relative importance of the six factors is equalized. Before rotation, factor 1 accounted for considerably more variance than the remaining (21.54%), however after extraction it accounts for only (11.54%).

By extracting the common factors, we got the initial loading matrix for the data set. As we knew that there exists a strong correlation among those variables, the correlations were further analyzed for Eigen structures and eigenvalues to generate the final correlation matrix and the principal factors, yielding the final six factors' loading matrix. The six extracted common factors cumulatively explained 58.96% of the total variance; which means at least 50% of the variance could be explained by common factors and is considered to be reasonable (Field 2005). When Kaiser's criterion was applied to the six factors, the six factors had eigenvalues >1.00 in the first run PCA.

Therefore, among six factor solutions examined, a five factor solution with Varimax rotation was deemed to be the most statistically and conceptually

Table 4: Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.308	21.54	21.54	4.308	21.54	21.54	2.31	11.549	11.549
2	1.911	9.555	31.095	1.911	9.555	31.095	2.012	10.059	21.608
3	1.666	8.331	39.425	1.666	8.331	39.425	1.93	9.649	31.257
4	1.468	7.34	46.766	1.468	7.34	46.766	1.873	9.364	40.621
5	1.265	6.326	53.092	1.265	6.326	53.092	1.834	9.171	49.793
6	1.174	5.869	58.961	1.174	5.869	58.961	1.834	9.168	58.961
7	0.988	4.94	63.901						
8	0.959	4.797	68.698						
9	0.894	4.471	73.169						
10	0.804	4.021	77.19						
11	0.754	3.771	80.961						
12	0.672	3.361	84.322						
13	0.613	3.066	87.389						
14	0.526	2.632	90.021						
15	0.458	2.289	92.31						
16	0.397	1.987	94.297						
17	0.389	1.944	96.241						
18	0.294	1.472	97.713						
19	0.248	1.241	98.953						
20	0.209	1.047	100						

Extraction Method: Principal Component Analysis.

appropriate. To undertake the most appropriate interpretation, the loading values were carefully examined using Hair, Anderson, Tatham& Black's (1998) guideline for practical significance, which indicates a factor loading of ±0.3 means the item is of minimal significance, ±0.4 indicates it is more important, and ±0.5 indicates the factor is significant. Table 5 contains five factors extracted with Cronbach's coefficients which exhibits that the reliability of these dimensions fully meets the needed statistical requirements for factor analysis.

5. Discussion

The integrity of any study depends on the accuracy of the measures used,

Table 5: Extracted factors for Corporate Accountability and Green Growth

Extracted 'Factors' Resulting from the PCA under FA	Cronbach's Alpha
Corporate accountability for green growth	**.795**
Factor 1 -- Environmental Accountability	
Factor 2 -- Industry-Academia collaboration	
Factor 3 -- Brand image	
Factor 4 -- Hands-on Approach	
Factor 5 -- Save and Survive	

especially when exploring an important phenomenon such as green growth. The internal reliability (alpha) reached the recommended level; therefore, corporate sector could promote go green initiative more confidently in usual CSR practice to care for the environment within which they work.

While green growth is being recognized as an important aspect of CSR, a gap still persists between awareness and business action. However, to promote the green growth as an element of CSR, the industry-academia collaboration can play an important role since it can also involve the public in the design and implementation of go green policies.

Table 6: Factor 1-Environmental Accountability

Item no	Statement	Loading
2	'Green Growth' Plays a vital role to environment and economy'	.594
5	The importance of 'Green Growth' lies in the solutions to the current global warming and future threats of climate change	.779
7	Companies irrespective of size must invest on 'Green Growth' CSR (Corporate Social Responsibility) initiatives to facilitate long-term growth	.589
17	Engage Students community to promote green growth for the future generation	.612

The public today are becoming aware of the impact of climate change. Erratic weather and an increasing incidence of natural disasters have helped to raise popular awareness 'Global Warming' which has become a household term. The "going green" movement is continuing to build momentum, and

companies are quickly realizing that they better become eco-friendly now or risk losing business and this is also found in statement 2 (Table 6)'Green Growth Plays a vital role to environment and economy'. The report of KPMG (2008) also pointed out that eighty percent of the business leaders in a survey felt that climate change is very important issue and it must be considered in business plans but OECD report (2010) mentioned even though awareness about climate change is growing and expectation from the companies to promote green growth is increasing, a gap still persists between awareness and business action. The problems of sustainability are becoming a global concern. Greening the economy , as a pillar of sustainable development, may improve the human well-being while significantly reducing environmental scarcity and it is typified by the statement 5 (Table 6)'The importance of green growth lies in the solutions to the current global warming and future threats of climate change' with a loading of .779. Another perspective of a corporation's role in environmental management suggests that top management's green commitment is a factor, among others, influencing the formulation of different types of corporate environmental practices (Lee & Ball, 2003). Many companies may be inclined to become socially responsible but they lack the necessary tools and assistance to practice CSR and in that case students' community engagement on CSR initiatives can have another positive affect; it can be a powerful tool in an environment where community development is of utmost importance and this also identified by the statement 17 (Table 6) 'Engage Students community to promote green growth for the future generation' with a loading of .612.

Table 7: Factor 2-Industry-Academia collaboration

Item no	Statement	Loading
8	Company must encourage Educational Institutions to focus on research in green technologies, green projects for the sustainable growth of the society	.693
10	Corporate support is required for the student community to mobilize green and encourage green projects	.766
18	Company must encourage academia to organize seminar, conference on 'Green Growth' to promote India's Go Green initiatives	.514

The concept of corporate social responsibility(CSR) is gaining momentum across the world and the role of companies in society has dramatically changed over the years (Osburg, 2009).Since CSR is becoming a trend in the

business world, many businesses are trying to catch up and be socially responsible. There is also the moral and ethical reason for behaving socially responsible – companies are simply practicing CSR strategies and incorporating it into their business strategies because they want to contribute to society.

The natural environment is increasingly being viewed as a pillar of CSR. In recent years, the environment has been one of the factors of greatest interest in terms of the market's attitude toward CSR (Bird *et al.*, 2007; Wahba, 2008). With the growing importance of green growth as well as the continued practice of CSR related activities in the present scenario , it is imperative that industry will have to establish more extensive collaborations with academia for encouraging CSR and vice versa. Additionally, the increasing responsibilities of CSR as envisaged by the Companies Act, 2013, the project as done by the academic institutions can act as powerful motivators for industry in discharging their corporate responsibilities. Over the couple of years this issue has garnered significant attention and has been a recurring theme at various CSR related conferences. Academia-industry collaboration has always been a topic of discussion in both the sides. The statement 10 (Table 7) 'Corporate support is required for the student community to mobilize green and encourage green projects' with loading of .766 clearly indicates that there remains a need to improve understanding of the interactions between academia and industries to promote green growth measures that promote decent work. It is obvious that not all academic and industrial organizations are aware of the possibilities and pitfalls of industry-academic collaboration but the most important factor is the 'willingness' to understand and respect each other's core objective. Since green growth is being flaunted as the next solution to keep the global economy growing, therefore, there is an unique window of opportunity to work together on a common cause which is also typified by the statement 8 (Table 7) 'Company must encourage Educational Institutions to focus on research in green technologies, green projects for the sustainable growth of the society' with a loading of .693.

Addressing sustainability issues can help businesses to improve their brand image among their customers, investors and suppliers since stakeholders are becoming more aware of CSR and environmental performance. This may be due to increased media coverage of sustainability and as a result stakeholders are forcing businesses to assess all aspects of their suppliers'

Table 8: Factor 3- Brand image

Item no	Statement	Loading
1	Clean and Green image is important for brand image of the business	.619
14	Proper information and assistance by the Government to the business is helpful for understanding the value of the natural environment and their impact on it	.652
19	Industries and business should be doing more to contribute to ' Green Growth'	.747

operations in order to make them 'greener' (ElAmin, 2007). Fombrun et al. (2000) believed that companies are increasingly coming to the realization that a strategically integrated CSR portfolio 'helps a company build reputational capital'. Since climate change concerns pose a threat to the brand and reputation of the companies. Reputational risks are also involved in the failure of companies to respond to climate change concerns (Ernst and Young, 2009).The statement 19 (Table 8) 'Industries and business should be doing more to contribute to Green Growth' with a loading of .747 states that companies are required to implement green strategies and environmental development must be a core clement of CSR of companies. The business case for sustainability report of IFC stated that the global survey of senior executives from around the world conducted by the Economist in 2011 found that 76 percent of respondents think that embedding sustainability into the company's business leads to enhanced reputation and increased brand value. Many companies recognize that by addressing environmental and social issues they can achieve better growth and cost savings, improve their brand and reputation, strengthen stakeholder relations, and boost their bottom line and it is also typified by the statement 1 (Table 8).

Table 9: Factor 4-Hands-on Approach

Item no	Statement	Loading
9	Industry- Academia collaboration is important to have the green business climate	.739
11	Green Growth is important to be globally competitive in corporate world	.719
15	Corporate world is not doing enough to increase the awareness of 'Green Growth'	.543

Public awareness and participation is important in all aspects of enforcement, not only in understanding basic environment and human rights, but also in fostering a sense of responsibility and proactive environmental citizenship. The statement 15 (Table 9) with loading of .543 clearly indicates that business should undertake initiative to promote greater green responsibility.Involving academic institutions and communities in environmental protection can create a sense of responsibility towards the environment, ease hardship through the collaboration and provide a forum for new ideas and greater participation. The link between green growth and corporate responsibility in the context of CSR can best be illustrated through environmental project and public awareness initiatives if it is undertaken by the academic institution. The statement 9 (Table 9) 'Industry-Academia collaboration is important to have the green business climate' with loading of .739 clearly indicates that business should undertake initiative to promote greater green responsibility. Companies across the country must encourage all educational institutions to support preventive approach to environmental challenges and encourage to undertake green research and projects.The statement 11 (Table 9) 'Green Growth is important to be globally competitive in corporate world' with loading of . 719 clearly indicates that encouraging green growth is important to remain globally competitive in the long run and this view is supported by Gimenez Leal et al. (2003) where it is pointed out that there is a direct and positive relationship between the adoption of environmental practices and the company's competitive position while others argue that companies, even those within the same industry, may gain unique competitive advantages by implementing an aligned portfolio of CSR-related initiatives (Husted & Salazar, 2006).

Table 10: Factor 5- Save and Survive

Item no	Statement	Loading
6	There is a need for the companies to initiate "Green Growth' practices in order to minimize environmental impacts and conserve natural resources	.670
12	'Respect to Environment' is important element of 'Green Growth'	.648

Earth, our home planet is indeed gasping for breath right now. Without the earth, we have nowhere to live. Through deforestation, urbanization and pollution, our environment is being destroyed. Industrial revolution was hailed as a boon, but following centuries of predominant concern with industrialization as a symbol of national progress, its darker side has come to be seen only recently. The earth's climate is constantly changing. Climate change is no more an environmental concern. It has emerged as the biggest developmental challenge for the planet (Narain, *et* al., 2009).

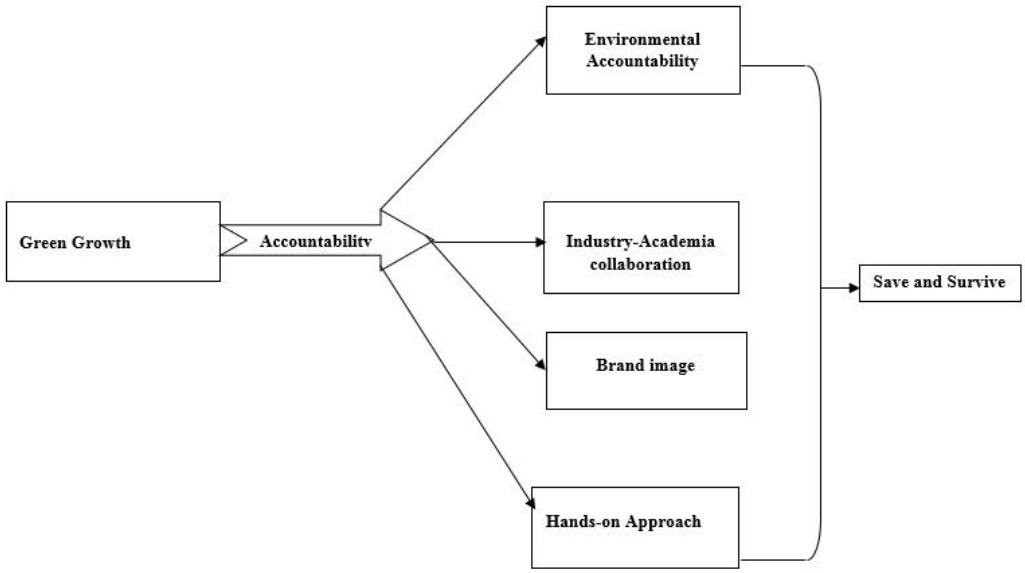
Now global warming is warning us that climate change is coming. Mother Earth is in danger; life on Earth is in danger. Climate change problem is negatively affecting life on Earth. All these environmental changes are warnings of global destruction. Changes in the global environment increasingly challenges business around the world. Now there is a perception that immediate actions on the company level is needed in order to safeguard the state of environment and healthy living conditions (Rohweder, 2008) and this also validated in the statement 12 (Table 10) 'Respect to Environment' is important element of Green Growth' with a loading of .648. The companies will have to implement proactive strategies to make citizens aware of the importance of saving the environment and this responsibility towards the environment can be honed through publicity and education. The natural environment is increasingly being viewed as a pillar of CSR and the company must help their environment by understanding the problems and exhibiting the characters of respect, caring and protecting environment since the statement 6 (Table 10) with loading of .670 states 'There is a need for the companies to initiate 'Green Growth' practices in order to minimize environmental impacts and conserve natural resources'.

6. Findings and Conclusion

It cannot be overemphasized that the environmental challenges being faced by the society are so complex and multidimensional that it seeks involvement from every section of the society. This study highlights environmental accountability which is becoming imperative for the business to survive from a long term perspective.The main contribution of this study lies in exploring

factors for promoting green growth by the companies which is a core element of CSR. Different motivations have been tested to explain which factors are able to influence company's environmental conduct. Data required for this study were collected from seventy five post graduate students of different institutions using a survey questionnaire. The results of applying factor analysis showed that five factors (Fig 2) were extracted to promote green growth in the present scenario of climate change. The study suggests that 'environmental accountability' is a likely factor to encourage green behavior of the companies. This creates an opportunity for companies for developing their brand image. The factor 'Hands-on-Approach' emphasizes on participation of academia to encourage green awareness in the society. The interconnection through research collaboration, consultancy service and extension programme could be effective for CSR projects of the companies. The factor 'Hands-on-Approach' can play an important role in extending support for improving the current state of the environment. Findings from this study also suggest that 'Industry-Academia Collaboration' is of utmost importance to save the environment and also to survive in the long run.

Fig. 2: Factors leading to green growth as a core element of CSR



References

Arab Forum for Environment and Development (AFED), 2011. Green Economy: Sustainable Transition in a Changing Arab World, Beirut: AFED

Bathmanathan, V. &Hironaka, C. (2016). Sustainability and Business: What is green corporate image?*Earth and Environmental Science*,*32*, 1-4.

Bird, R.G., Hall, A.D., Momente, F. &Reggiani, F. (2007). What corporate social responsibility activities are valued by the market? *Journal of Business Ethics 76*(2), 189–206.

Bowen, H.R. (1953). *Social responsibilities of the businessman*, New York: Harper & Row.

Bryman, A. & Cramer, D.(1999). *Quantitative data analysis with SPSS: A Guide for Social Scientists*, London, Rouledge.

Carroll, A. B. (2009). A look at the future of business ethics. *Athens Banner-Herald.*

Central Statistics Office Report (2013). *Environment, Climate and Energy*. Retrieved from http://www.cso.ie/en/statistics/climate /. (February 2014).

DeVon, H. , Block, M., Moyle-Wright, P., Ernst, D., Hayden, S. &Lazzara, D. (2007). A psychometric Toolbox for testing Validity and Reliability.*Journal of Nursing scholarship, 39* (2), 155-164.

Dutta. S. (2016). Green Growth Initiatives: A pathway to Corporate Social Responsibility. *ICTAT Journal of Management Studies*, *2*(3), 342-348

ElAmin, A. (2007). *Wal-Mart sustainability programme faces criticism.* Retrieved May 11, 2013, from Food Production Daily: http://www.foodproductiondaily.Com/Processing/Wal-Mart-sustainability-programme-faces-criticism(November 16).

Elkington, J (1997).*Cannibals with Forks: Triple Bottom Line of 21st Century Business*, Capstone Publishing Limited, Oxford.

Ernst & Young. (2009). *The 2009 Ernst &Young business risk report – the top 10 risks for global business*. Retrieved from http://climate-expert.in/attachments/article/81/ (January 2013).

Fombrun, C.F, Gardberg, N.A. & Barnett, M.L. (2000). Opportunity platforms and safety

nets: Corporate citizenship and reputational risk. *Business and Society Review 105*(1, 85–106.

Gimenez Leal G, Casadesus F.M &VallsPasola, J. (2003). Using environmental management systems to increase firms' competitiveness. *Corporate Social Responsibility and Environmental Management* 10, 101–110.

Hair, J.F., Anderson, R.E., Tatham, R. L., & Black, W.C. (1998). *Multivariate Data Analysis*, Fifth Edition, Prentice-Hall: Upper Saddle River.

Haladyna, T. (1999). *Developing and Validating multiple-choice test items*. Hillsdale, NJ, Lawrence Erlbaum Associates.

Harrell, M.C., & Bradley, M.A. (2009). RAND National De fence Research Institute

Hoffman, A.J. & J.G. Woody (2008), *Climate Change: What's your Business Strategy*, Harvard Business School Press, Boston.

Hopkins, M (1998). The *Planetary Bargain: Corporate Social Responsibility Comes of Age*, Macmillan, London.

Husted B. & Salazar J. (2006). Taking Friedman seriously: Maximizing profits and social performance. *Journal of Management Studies* 43(1), 75–91.

International Finance Corporation (IFC) (unknown). *The Business Case for Sustainability*. Retrived fromhttps://www.cbd.int/financial/mainstream/ifc-businesscase.pdf(July2015)

Jupesta, J., Boer, R., Parayil, G., Harayama, Y., Yarime, M., Puppim de Oliveira, J.A. and Subramanian, S.M. (2011). Managing the transition to sustainability in an emerging economy: Evaluating green growth policies in Indonesia. Environmental *Innovation and Societal Transitions1* (2), 187–191

Kleinbaum, D.G &Kupper, L.L. (1988*). Applied Regression Analysis and Other Multivariable Methods*, Duxbury Press, Massachusetts, Mass, USA, 1998.

Kolk, A., &Pinkse, J. (2004). Market strategies for climate change. *European Management Journal, 22*(3), 304-314.

KPMG. (2008). Climate change: Is India Inc. prepared? Retrieved from http://www.outlookbusiness.com/pdf/ClimateChangereportfinal.pdf (January 2013).

Lai,K., & Wong, C.W.Y.(2012). Green Logistics Management and Performance: Some Empirical Evidence from Chinese Manufacturing Exporters. *Omega* 40, pp 267-282.

Lee, K. & Ball, R. (2003). Achieving sustainable corporate competitiveness: Strategic link between top management's (green) commitment and corporate environmental strategy. *GMI*,44, 89–104.

McWilliams, A., & Siegel, D. (2001). Corporate Social Responsibility: A Theory of the Firm Perspective. *The Academy of Management Review*, *26*(1), 117–127.

Menon, A., & Menon, A. (1997). Enviropreneurial Marketing Strategy: The Emergence of Corporate Environmentalism as Market Strategy. *Journal of Marketing, 61*, 51-67.

Montiel I. (2008). Corporate social responsibility and corporate sustainability: Separate pasts, common futures. *Organization and Environment* 21(3), 245–269.

Narain, S., Ghosh, P, Saxena, N., Parikh, J. &Soni, P. (2009). *Climate Change Perspectives from India* (UNDP India).

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd Ed.). New York, McGraw-Hill.

OECD (2010). Transition to a Low-Carbon Economy: Public Goals and Corporate Practices.

OECD (2011). Interactions between Emissions Trading Systems and other Overlapping Policy Instruments, OECD, Paris

OECD (2013). Putting green growth at the heart of development. OECD green growth studies. OECD publishing.

Okereke,C.(2007). An Explorations of Motivations, Drivers and Barriers to Carbon Management: The UK FTSE 100. *European Management Journal*, *25* (6), 475-486.

Olejnik, S.F. (1984). Planning educational research: determining the necessary sample size," The Journal of Experimental Education, *53* (1), 40–48.

Oppenheim, J (2013). How to make Green Growth the New Normal. Retrieved from www.mckinsey.com/~/media/mckinsey/dotcom/client.../Green%20growth.ashx(November 17)

Osburg, T. (2009). NachhaltigkeitdurchFokussierung. In American Chamber of Commerce FAZ-Institute (Eds.), corporate responsibility 2009: Human Resources -ZukunftschancenfürUnternehmen und Gesellschaft, Frankfurt: Krimsky, Sheldon.

Phillips, L. (2010). *The Drivers for Divergence: Exploring Variation in New Zealand Organizational Responses to Climate Change*. (Thesis). The University of Canterbury.

Polonsky, M., &Kilbourne, W.E. (2005). Environmental attitudes and their relation to the dominant social paradigm among university students in New Zealand and Australia. *Australasian Marketing Journal, 13* (2), 37-48.

Rohweder, L (2008). *Climate Change: A Business Challenge*. (Discussion Paper). Hagga-Helia. University of Applied Sciences. Retrieved from http://www.haaga-elia.fi/sites/default/files/Kuvat-ja-liitteet/Palvelut/Julkaisut(June 2013).

Saufi, N.A.A., Daud, S. & Hassan, H. (2016). Green Growth and Corporate Sustainability Performance. *Procedia Economics and Finance*, *35*, 374-378.

Sprengel, D. C. & Busch, T. (2011). Stakeholder engagement and environmental strategy: The case of climate change. *Business Strategy and the Environment,* 20(6), 351-364.

Sussman,G. & Freed, J. (2008). *Adapting to Climate Change: A Business Approach*. Retrieved from http://www.c2es.org/docUploads/Business-Adaptation.pdf(March 2013).

The World Bank (2012) Inclusive Green Growth: the Pathway to Sustainable Development. Washington, DC: World Bank.

UNFCCC (2007). Retrieved from http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf(March 2015)

Wahba, H. (2008). Does the market value corporate environmental responsibility? An empirical examination. *Corporate Social Responsibility and Environmental Management* 15, 89–99.

Weinhofer, G., & Hoffmann, V. H. (2010). Mitigating climate change - how do corporate strategies differ? *Business Strategy and the Environment*, *19*(2), 77-90.

Williams, B., Onsman, A. & Brown, T. (2010). Exploratory factor analysis: A five-step guide for novices, *Journal of Emergency*.

World Bank (2012). Inclusive Green Growth: The Pathway to Sustainable Development. Washington, DC: World Bank.