“Existing situation and prospects of green economy: evidence from Bangladesh”

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Existing situation and prospects of green economy: evidence from Bangladesh

Abstract

Economy for green is currently becoming a "buzz word" among producers, suppliers and consumers, which is also receiving impetus in Bangladesh. Based on the literature review, a number of theoretical relationships were empirically tested. An investigative query is: to what extent the green economy is flourishing with a viw to extend sustainability of the state with competitive advantage? Structured questionnaire was deliberated in order to find the relationships between the demographic variables and the green ecosystem. Time period of the research was October 1, 2017 to March 31, 2018. It was empirically observed that the relationship between the respondents of both genders and usability of green production in the country exists; the connection between business type and sensitivity of any green product is easily obtainable; the linkage between business type and awareness of any green product is accessible in the market; the linkage between type of institution and encouraging goods and services of any "Green Product" in Bangladesh occurs; the relationship between different types of institutes and use of green product consumption is applicable in the country. Green economy can possibly reduce the magnitude of the worst shock of natural disasters which increasingly occur as regular variation in addition to severe problems on human being and non-human assets. Consumers and producers should be conscious of green concept. Green Investment Bank in Bangladesh may be established to accomplish a broad range of economic support for innovative green projects and technologies leading to increasing capacity and sustainable connections.

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Introduction

Green economy is linked with the atmosphere of greener through coordination of creative potential in manufacture, production, services, buildup, share and deployment with keeping natural balances. Green market is connected with green manufacture, ingesting, trading and sponsoring for performing starting from grass roots level to upper level. Green economy is related to a green consumer's desire, alertness of an inventor and a financier.

Ahmad (2017) observed that in Bangladesh, poverty alleviation, environmental protection, population control and human development are by far the stated national goals. The author highlighted that preferred consequences will not be attained unless those policies and programs are effectively implemented with vision, mission, genuineness and assurance.

Bangladesh is facing the ecological risk in the agricultural sector and speedy urbanization process of the country. Green product may be well thought-out as a push factor to cope with environmental hazards. Government has recentlydecided to use jute bags by different organizations. It is a timely decision. Green growth is about mixing and reinforcing several characteristics of economic, ecological and social procedures which is achieved considering the occupied worth of accepted assets and identifying its crucial part of the economy progress (OECD, 2012). Rahman (2013) commented that green finance can be done by banks and financial institutions for which Bangladesh Bank (central bank of the country) provided procedures. The Green products are gradually becoming popular in the country. For instance, led bulbs are being used by the customers. Similarly, LG competitors brought variable refrigerator flow technology in air condition, namely Walton and others. AC ENrg saver can be used in the country to reduce 30% energy save. Organic fertilizers, organic foods are also becoming popular in the country. Environment friendly bricks are produced in the country, but at a limited scale. Elite Paint received lead safe paint certificate. Besides government, superior NGOs are also gradually transferring technology towards environment friendly green technologies in the rural areas. Private sector of the country is also working in above noted aspects but with a limited space.

Kennetet et al. (2012) noted that green economies are far beyond ecological economics and in fact ecological issues. Hossan (2014) depicted that the National Environment Policy, which was formulated in 1992 in Bangladesh, is still valid despite there is a lot of changes in the environmental scenario. Environmental taxes and support are sought to exercise through implementing appropriate fiscal strategies in the country.

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It is critical for the country has been demanding to familiarize with greener ideas in creation, utilization, but at a sluggish step. Sustainable Finance Department of Bangladesh Bank issued a Circular No. 02, as of February 8, 2017, and set all-inclusive rules on ESRM - to protect and manage environment through the banking sector.

During September 2014, Bangladesh Government took initiative for Green Climate Fund (Dhaka Tribune, March 9, 2017). Infrastructure Development Company Ltd. (IDCOl) has a key purpose to fill up the gap of financing to growing infrastructures as well, green energy for which is acknowledged with endorsement to grow and yield to backing offers for deliberation on Green Climate Fund (Daily Star, July 13, 2017a). Meanwhile, Palli Karma-Sahayak Foundation (PKSF) has an endowment of $60 million as financial support from Green Climate Fund (GCF) to combat climate change (The Independent, October 13, 2017).

Bangladesh ranks 6th most helpless nation in the list of the most affected nations in the 20-year time period (1995–2014) with the CRI score of 22.67, Bangladesh ranks 38th in terms of climate in danger nation in the list of most exaggerated countries in 2014 with the CRI score of 46.33 as per Global Climate Risk Index 2016. World risk report (2014) stated that the country ranks 5th out of 171 nations of the planet with a position of 19.37%. US President Donald Trump announced on June 1, 2017 that he will withdraw the United States from the historic Paris accords aimed at curtailing the progress of climate change.

(https://www.aol.com/article/news/2017/06/01/trump-paris-climate-deal-us-pulls-out/22121636/ viewed on July 1, 2017).

According to the Asian Age (April 3, 2018), Seven industrial units of Bangladesh have placed them in the highest scoring top 10 in the list of 25 environment-friendly industrial entities of the world. According to US Green Building Council Scoring, 97 out of 100, Bangladesh's Remi Holdings, a readymade garment factory in the Adamjee Export Processing Zone (EPZ) of Narayanganj, became the world's number one environment-friendly factory (Narayanganj's Plummy Fashions is number two in the list). Other Bangladeshi factories in the list include ABA Group's Vintage Denim, SQ Celsius 2, Genesis Washing, SQ ColBlanc and SQ Birichina. The US Green Building Council (USGBC) will give LEED (Leadership in Energy and Environmental Design) certificates to the green factories if the projects satisfy certain requirements and earn points to achieve different levels of certification. International Finance Corporation delivered a total of $1 billion of green bonds for the financial year from July 1, 2015 to June 30, 2016 which includes Bangladesh along with other countries in the sector of renewable energy, ecological agriculture, green building, adaption of change of environment by the private sector, etc. (Burger, 2016).

Bangladesh has been trying to access inclusive green growth through Delta plan 2100. According to Islam (2013), Bangladesh is looking forward for green economy. Sustainable Development Goals, which need to be fulfilled by 2030, also put emphasis on ecological balances and environmental mitigation and adoption, for which green economy gets larger horizon to expand both vertical and horizontal integration through holistic approach.

Figure 1 shows how green economy is linked with various factors.

Source: Drawn by the author

Fig. 1. Green economy and linkage with various factors

From Figure 1 it is found that green economy is netting with green product, consumer awareness, sustainability, legal status related to green product, public-private-foreign collaboration, technological innovation and utilization, green consumer, fair pricing, advantage, green financing, ecological balance, and green investment.

The objectives of the study are as follows:

- to assess present scenario of the green economy of Bangladesh;
- to measure three stakeholders opinion, i.e. consumer, producer and institutions, regarding green economy of the country;
- to see extensiveness for sustainability of the state with competitive advantage;
- to provide some implications of the study.

From aforesaid discussion, investigative query is to what extent green economy is flourishing with intension of extensive sustainability of the state with competitive advantage?

1. Literature review

Zinkhan and Carlson (1995) argued that several green clients have adverse approaches to business, and they frequently have adverse effect of the advertising industry. Engel (2000) observed that the consequence of adaptive consumers' risk preferences and an appliance for preventing is "Green wash" needs over compliance. Heinkel, Kraus, and Zechner (2001) stated that the portion of reserves organized by green investors is a significant factor of the motivation for adulterating organizations to restructure.

Dey (2012) identified that forest resource depletion, the extinct and vulnerable flora and fauna species and their manifold problems are associated with scarcity of biological resources of the forest. Goke (2012) observed that renewable energies are carriers of energy which are infinitely accessible to humans and quickly regenerate themselves. Mak (2012) depicted that vital way to drive a smooth and effective transition to a truly low-carbon economy is the growth of well-designed, long-term and stable policies that deliver inducements for businesses to devote in a new green infrastructure.

Cox (2013) opined that a cultural trait, when confronted by obtuse refusal to consider what is important, people will throw ever more evidence –

more examples – to try and win the case. Ross-Tatam (2013) depicted that The British Green Investment Bank was the first publicly owned investment bank that presented the five elements of green impact.

Duckworth (2014) observed that a positive attitude towards ethical consumption will only lead a person to make ethical choices. Gusta (2014) argued that the numerous studies on diverse nations indicated that substantial energy – efficiency enhancement chances can happen in the manufacturing sector.

Ahmed (2015) said that the fruitful execution of an efficient power generation strategy is critically reliant on the implementation of these reforms relating primary energy. Besieged government program needs to include the phasing out of insect killer and inorganic fertilizers as share of revitalizing and adapting national cultivable land for supportable food production (Watts & Williamson, 2015).

Dhus (2016) argued that in the country, institutional deficiencies are capable of feeding back into the overall social-political-economic determinants of future growth. Ghose (2016) commented "Green marketing" being in the fetal stage, it is very difficult to extract enough information. In case of Bangladesh, Khatun (2016) argued that an integrated framework for supporting the greening of industries requires commitment to the greening of industries from top levels of the government; setting up a high level strategy; setting up regulatory frameworks; coordination of various bodies including ministerial committees. The green services segment is a significant component of evolving environmental enactment by environmental management (Wong et al., 2016).

Ahmed and Chattopadhya (2017) commented that in Bangladesh, "Environmental degradation lowers growth by reducing the capital stock as well as by lowering the productivity of capital. Any slowdown in growth will have negative consequences for the growth of employment and the progress with absolute poverty reduction in both forms: extreme and moderate". Podder (2017) argued that in rural areas of Bangladesh, the drawbacks in the path of implementation of safe water coverage for rural areas are chocked up tube wells due to lack of proper maintenance and contaminated tube wells due to presence of arsenic, salinity, iron etc. Rao and Giddaiah (2017) described that "green" banking services are interlinked and support natural resources savings, cleanliness, and social responsibility are also the motto of financial inclusion. Ullah and Jahan (2017) described that green human resources management is fruitful with converting ordinary employees into green, which means environment friendly employees so as to accomplish environmental goals of the institute and lastly to make a noteworthy influence on environmental sustainability.

Making sure that monetary policy is pointing in the same direction is a logical and necessary next step (Barkawi, 2018). Environmental ethics would not be able to hope to fulfill its promise of addressing the environmental crisis by promoting forms of decision-making that will protect and conserve the non-human world, as there would be no basis for arguing that people should adopt alternative frameworks for thinking about the natural world (Clements et al., 2018).

Rahman (2018) stated that scale-up of green investment will not only mitigate the impact of climate change, but will also foster sustainable economic growth and job creation. Though the banking sector was trying to focus on eco-friendly business practices, the majority of investment must come from the private sector.

Given the literature review, research gap was identified and the research was carried out to fill up the gap of research activities on green economy in Bangladesh.

2. Research methodology

Primary and secondary sources are used in the research. A four-part questionnaire was constructed considering literature review to gather the responses of three types of the contributors. The research stressed to get feedback from the respondents who are involved in the green economy in the country. The research obtained 141 questionnaires from the respondents. As 16 survey forms were not duly filled up, they were dropped and the study considered the remaining 125 questionnaires which were retained for data analysis and these questionnaires were duly filled by four parts. The study was conducted in Chittagong City and Khulna City from October 1, 2017 to March 31, 2018.

The statistical tests used for this study are: Chi-square test; Factor Analysis and Binary Logistic Regression Equation and Factor Analysis. The grade of agreement and disagreement on green economy on the consumer side was determined by considering the factors: government's encouragement of green product; government's certified green product, government investigation; correctness of green product and buying green product. As for producers, the research observed the following factors: agreement of the producers; government's encouragement to the producers; certification needs of the producers; examination of the producers; producer's desire to pay; producer's desire to buy; capabilities of the producers.

As for financial institutions, NGOs and religious institutions, the research considered the following factors: investigation of the Is, goverment

encouragement to the Is, agreement with the Is (institutions), desire of the Is, desire to purchase by the Is, capabilities of the Is, certification required for the Is. As such, the research applied Kaiser-Meyer-Olkin (KMO) test to amount of how it suited the data for Factor Analysis. Bartlett's test is used to test if samples have equal variances. The research also employed Cronbach's alpha, as an amount of internal consistency.

The research used Binary Logistic Regression Equations between genders of the respondents and green product available based on "Yes" or "No". It was also tested whether product is available in the market and promoting production of green product as independent variable, and as dependent variables respondents, i.e. FIs, NGOs and RIs. From Table 9 to Table 11, the Wald test was used. Further, the odds ratio which is one of three main ways to quantify how strongly the presence or absence of property is associated with the presence or absence of property in a given population is also determined (see Tables 9-11).

Based on aforesaid discussion the research will consider the following hypothese.s

Hypothese testing

Alternative hypotheses are given below:

Ha1: There is a relationship between the respondents of both genders and usability of green production in the country.

Ha2: There is a connection between business type and sensitivity of any green product.

Ha3: A linkage between business type and awareness of any green product is accessible in the market.

Ha4: A connotation between type of institution and encouraging goods and services of any green product in Bangladesh occurs.

Ha5: A relationship between different types of institutes and use of green product consumption is applicable in the country.

3. Estimated results

Table 1 gives estimated results.

Table 1. Relationship between the respondents of both genders and usability of green production.

Gender of the respondent		Usability of green production in Bangladesh		Total
		Yes	No	
Male	Number	53	35	88
	%	60.2%	39.8%	100.0%
Female	Number	22	15	37
	%	59.5%	40.5%	100.0%
Total	Number	75	50	125
	%	60.0%	40.0%	100.0%
Pearson $\chi 2 = 0.936_{(1)}$; $P < .006$				

Source: Compiled by the author.

Data in Table 1 show the relation between gender of the respondents and usability of green production in Bangladesh. The table also illustrates that among the male respondents, 60.2 percent provided positive answers and 39.8 percent provided negative answers. Further, the table demonstrated that among the female respondents, 59.5 percent provided positive answers and 40.5 percent provided negative answers. However, the table exemplified that a relationship between gender category of the respondents and usability of green production in the country was agreed ($\chi^2 = 0.936$; $P <. 006$).

Table 2. Connection between business type and sensitivity of any green product

Business type of the respondent		Sensitivity of any green product is easily obtainable		Total
		Yes	No	
Agricultural business	Number	24	18	42
	%	57.1%	42.9%	100.0%
Manufacturing business	Number	21	0	21
	%	100.0%	0.0%	100.0%
Retail business	Number	12	11	23
	%	52.2%	47.8%	100.0%
Oil/gas/petroleum business	Number	14	9	23
	%	60.9%	39.1%	100.0%
Others	Number	4	12	16
	%	25.0%	75.0%	100.0%

Table 2.(cont.) Connection between business type and sensitivity of any green product.

Business type of the respondent		Sensitivity of any green product is easily obtainable		Total
		Yes	No	
Total	Number	75	50	125
	%	60.0%	40.0%	100.0%
Pearson $\chi2 = 22.904_{(4)}$; $P < .000$				

Source: Compiled by the author.

Data in Table 2 show the connection between business type and sensitivity of any green product in Bangladesh. In addition, the table illustrated that 57.1 percent of respondents who had agro-business, provided positive answers and 42.9 percent provided negative answers. Further, 100 percent of respondents of the manufacturing business provided positive answers about the green product availablity in the market.

Similarly, 52.2 percent of respondents provided positive answers and 47.8 percent provided negative answers in the retail business. Among the oil/gas/petroleum businessmen, 60.9 percent provided positive answers and 39.1 percent provided negative answers. Likewise, 25.0 percent of respondents provided positive answers and 75.0 percent provided negative answers among the other types of businessmen. However, the table also illustrated that there was an association between business type and awareness of any type of green product available in the market of Bangladesh (χ^2 = 22.904; P < 0.000).

Table 3. Linkage between business type and awareness of any green product accessible in Bangladesh

Business type of the respondent		Awareness of any green product accessible in the market of Bangladesh		Total
		Yes	No	
Agribusiness	Number	8	34	42
	%	19.0%	81.0%	100.0%
Manufacturing business	Number	20	1	21
	%	95.2%	4.8%	100.0%
Retail business	Number	11	12	23
	%	47.8%	52.2%	100.0%
Oil/gas/petroleum business	Number	17	6	23
	%	73.9%	26.1%	100.0%
Others	Number	4	12	16
	%	25.0%	75.0%	100.0%
Total	Number	60	65	125
	%	48.0%	52.0%	100.0%
Pearson $\chi2 = 42.458_{(4)}$; $P < .000$				

Source: Compiled by the author.

Table 3 demonstrated the relationship between business type of the respondents and awareness of any green product accessible in the market of Bangladesh. The table also showed that 19.8 percent of agribusinessmen provided positive answers and 81.0 percent provided negative answers. Additionally, among the manufacturing businessmen, 95.2 percent of respondents provided positive and 4.8 percent provided negative answers about the producing and selling of any green product in the market of Bangladesh.

In addition, 47.8 percent of respondents having retail business provided positive answers, and 52.2 percent provided negative answers. Similarly, among the respondents of oil/gas/petroleum business, 73.9 percent provided positive answers and 26.1 percent provided negative answers. Likewise, 25.0 percent of respondents having other type of business provided positive answers and 75.0 percent provided negative answers. However, the table further demonstrated that there was a linkage between business type and awareness of any green product accessible in the market of Bangladesh ($\chi2$ = 42.458; P <. 000).

Table 4. Connotation between the type of institutions and encouraging goods and services of any green product in Bangladesh

Type of organization		Encourage goods and services of any green product		Total
		Yes	No	
NGO	Number	62	23	85
	%	72.9%	27.1%	100.0%
Religious institutions	Number	7	33	40
	%	17.5%	82.5%	100.0%
Total	Number	69	56	125
	%	55.2%	44.8%	100.0%
Pearson $\chi 2 = 33.81_{(1)}$; P <.000				

Source: Compiled by the author.

Data in Table 4 demonstrated the type of organization and encouraging goods and services of any green product. Further, the table showed that among the NGOs respondents, 72.9 percent provided positive answers and 27.1 percent provided negative answers. In addition, among the respondents of religious institutions, 17.5 percent provided positive answers and 82.5 percent provided negative answers about the awareness of any green product available in the market.

However, the table illustrated that there was a connotation between the type of institution and encouraging goods and services of any green product in Bangladesh ($\chi 2 = 33.81$; P <. 000).

Table 5. Relationship between different types of institutes and green product consumption

Type of the respondent		Green product consumption		Total
		Yes	No	
NGO	Number	61	24	85
	%	71.8%	28.2%	100.0%
Religious institutions	Number	16	24	40
	%	40.0%	60.0%	100.0%
Total	Number	77	48	125
	%	61.6%	38.4%	100.0%
Pearson $\chi 2 = 11.602_{(1)}$; P <0.001				

Source: Compiled by the author.

Data in Table 5 showed that 71.8 percent of NGO respondents provided positive answers and 28.2 percent provided negative answers. In addition, among the respondents of religious institutions, 40.0 percent gave positive answers and 60.0 percent provided negative answers about the organization encouraging directly or indirectly the production and consumption of any green product in Bangladesh. However, the table exemplified that there was a relationship between different types of institutes and green product consumption in the country ($\chi 2 = 11.602$; P <.001).

Table 1 to Table 5 observed that all the hypotheses are confirmed.

Table 6. Grade of the agreement and disagreement on green economy on the consumer side

Factors	Communality	Component		Variance explained (%)
		1	2	
Government's encouragement of green product	0.565	.752		63.746
Government's need to certify green product	0.449	.670		
Government's investigation	0.636	.797		
Accuracy of green product	0.672		.820	15.493
Buy more green product	0.808		.899	
Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy				0.826
Bartlett's test of sphericity – Chi-square ($\chi 2$) $test_{(df)}$ [p value]				$268.79_{(10)}$ [p < .000]
Cronbach's α				.847

Source: Compiled by the author.

Data in Table 6 demonstrated the factor analysis of group one. The table also displayed that Kaiser-Meyer-Olkin (KMO) measure indicated 0.82 of sampling adequacy. The Bartlett's test of sphericity

was significant ($\chi^2 = 268.79$, $p < 0.000$). The average communality for the variables was calculated as 0.62, which is also highly satisfactory in this study sample size. Based on absolute values of the factor loadings in group one respondents' degree of agreement or disagreement on consumer or demand side, the first principle component explaines over 63 percent of the total variation through variables such as government encouraging of green product, government's need to certify green product and government investigation. Among these variables, government investigation of the respondents was highly retorted in first component. Then, the second principal component represents accuracy of green product and buying green product and explains slightly 15 percent of total variation. But the buying greener product was greatly responded in the second component. Cronbach's α indicated internal consistency, i.e. reliability of value is. 847.

Table 7. Grade of the agreement and disagreement on green economy on the producer side

Factors	Communality	Component			Variance explained (%)
		1	2	3	
Agreement of the producers	.591	.357			34.962
Government encouraging the producers	.704	.837			
Certification needs of the producers	.752	.842			
Investigation of the producers	.706	.832			22.398
Producer's desire to pay	.766		.853		
Producer's desire to buy	.812		.687		
Capabilities of the producers	.758			.830	15.348
Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy				.518	
Bartlett's test of sphericity – Chi-square (χ2) $test_{(df)}$ [p value]				$254.24_{(21)}$ [$p < .000$]	
Cronbach's α				.394	

Source: Compiled by the author.

Data in Table 7 exemplified the factor analysis of group two. Data in this table also showed that Kaiser-Meyer-Olkin (KMO) measure indicated 0.51 of sampling adequacy. The Bartlett's test of sphericity was significant ($\chi^2 = 254.24$, $p < 0.000$). Cronbach's alpha for this analysis was 0.39, which signifies poor internal consistency. The average communality for the variables was calculated as 0.72, which is highly satisfactory regarding this study sample size. Absolute values of the factor loadings in group two respondents' degree of agreement or disagreement in business or supply side were considered. The first principle component, explaining slightly over 34 percent of the total variation, through variables such as agreement of the respondent, government encouragement to the producers, certification needs of the producers and investigation of the producers.

Among these variables, goverment encouragement of the respondents, certification of the respondents and investigation of the respondents were highly retorted in first component. Then, the second principal component represents willing of the respondent to pay and willing of the respondent to buy as explained by 20 percent of total variation. But the willing of the respondent to pay was greatly responded in the second component. Finally, the third principal component represents 15 percent of the total variation, through the variable of capabilities of the respondent. And here, capabilities of the respondent greatly influence the third component of the factor analysis.

Table 8. Factor analysis (grade of the agreement or disagreement for financial institutions, NGOs and religious institutions)

Factors	Communality	Component			Variance explained (%)
		1	2	3	
Investigation of the Is	.065	.940			31.545
Governmen encouragement to the Is	.595	.764			
Agreement with the Is	.963	.177			
Desire of the Is	.950		.666		20.302
Desire to purchase by the Is	.371		.606		
Capabilities of the Is	.218		.423		
Certification required for the Is	.424			.636	16.902
Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy				0.5123	

Table 8. Factor analysis (grade of the agreement or disagreement for financial institutions, NGOs and religious institutions).

Factors	Communality	Component			Variance explained (%)
		1	2	3	
Bartlett's test of sphericity – Chi-square (χ2) test$_{(df)}$ [p value]				232.36 $_{(21)}$ [p < .000]	
Cronbach's α				0.529	

Note: Is = Institutions.

Source: Compiled by the author.

Data in Table 8 illustrated the factor analysis of group three. Data in this table also showed that Kaiser-Meyer-Olkin (KMO) measure indicated 0.44 of sampling adequacy. The Bartlett's test of sphericity was significant (χ^2 = 232.36, p < 0.000). Cronbach's alpha for this analysis was 0.53, which signifies poor results. The average communality for the variables was calculated as 0.51, which is also satisfactory regarding this study sample size. Based on absolute values of the factor loadings in group 3 respondents' degree of agreement or disagreement, the first principle component explains slightly over 31 percent of the total variation, through variables such as investigation of the Is, government encouragement to the Is, agreement with the Is, desire of the Is, desire to purchase by the Is, capabilities of the Is, and certification required for the Is.

Among these variables, the government encouragement and agreement with the Is were highly retorted in the first component. Then, the second principal component represents the same variables like first component with 20 percent of total variation. But the desire of the Is and willing to buy were greatly responded in the second component. Finally, the third principal component represents 16 percent of the total variation, through the variable of certification required for the Is. And here, certification required for the Is greatly influences the third component.

Table 9. Binary logistic regression

Classification table				
Observed		Predicted		
		Gender of the respondent		Percentage correct
		Male	Female	
Gender of the respondent	Male	88	0	100.0
	Female	37	0	.0
Overall percentage				70.4

Variables in the equation									
		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1[a]	Green product available (1)	-.032	.399	.006	1	.936	.969	.443	2.119
	Constant	-.847	.309	7.538	1	.006	.429		
Chi-Square = .006$_{(1)}$; P. >.936									

Source: Compiled by the author.

Binary logistic regression indicates that green product available and gender of the respondents are not significant predictors (Chi-Square =.006, df = 1 and p = 0.936). The predictors "explain" 0% of the variability of green product available in the Bangladeshi market. Green product available and gender of the respondents are significant at the 5% level (Green product available in the market Wald = .006, p= 0.936). The Wald test is a test which indicates that constant variable is significant. The odds ratio (OR) of green product available is 1.676 (95% CI 0.443-2.119). Odds are an expression of relative probabilities, generally quoted as the odds in favor. The model correctly predicted 100.0% of cases where there were male respondents and 0.00 % of cases where there were female respondents, giving an overall percentage correct prediction rate of 70.4%.

Table 10. Business type of the respondents

Classification table				
Observed		Predicted		
		Business type of the respondent		Percentage correct
		Agri business	Non-agri business	
Business type of the respondent	Agribusiness	16	26	38.1
	Non-agribusiness	10	73	88.0
Overall percentage				71.2

Variables in the equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Product available in the market (1)	-.831	.481	2.985	1	.084	.435	.170	1.118
Produce and sale green product (1)	2.351	.520	20.431	1	.000	10.500	3.788	29.107
Constant	.234	.313	.558	1	.455	1.264		
Chi-Square=25.639 $_{(2)}$; P. <0.000								

Source: Compiled by the author.

Binary logistic regression indicates that producing and selling green product are significant predictors of types of business (Chi-Square = 25.639, df = 2 and p = 0.000). The product available in the market is not significant. All the predictors "explain" 25.7% of the variability of types of business for the green product. Produce and sale green product is significant at the 5% level (Wald = 20.431, p = 0.000). The Wald test is a parametric statistical test which indicates that product available in the market and produce and sale green product variables are significant at 10% and 1% levels of significance. The odds ratio (OR) for produce and sale green product is 7.732 (95% CI 1.589 – 37.615) and for size the corresponding figures are 25.319 (95% CI: 3.778 – 29.107). The model correctly predicted 38% of cases where there was a product available in the market and 88% of cases where there was a produce and sale green product, giving an overall percentage correct prediction rate of 71.2%.

Table 11. NGOs/inancial institution type of the respondent

Classification table				
Observed		Predicted		
		Type of the respondent		Percentage correct
		NGO	Religious institutions	
Type of the respondent	NGOs	85	0	100.0
	Financial institutions	19	21	52.5
Overall percentage				84.8

Variables in the equation									
		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1[a]	Product available in the market (1)	-3.187	.618	26.596	1	.000	.041	.012	.139
	Promote production of a green product (1)	-2.199	.595	13.638	1	.000	.111	.035	.356
	Constant	1.884	.554	11.557	1	.001	6.580		
Chi-Square = 53.54$_{(2)}$; P. < 0.000									

Source: Compiled by the author.

Binary logistic regression indicates that product available in market and promote production of green product are significant predictors of type of organization (Chi-Square = 53.54, df = 2 and p = 0.000). All the predictors "explain" 48.8 % of the variability of type of organization. Product available in the market and promote production of green product are significant at the 1% level (Wald = 26.596, p = 0.000; Wald = 13.638, p = 0.000). The odds ratio (OR) for product available in the market is 0.127 (95% CI 0.012 – 0.139) and for promote production of green product, the corresponding figure is 0.321 (95% CI: 0.035 – 0.356). The model correctly predicted 100% of cases where there were NGOs and 52.5% of cases where there were religious institutions, giving an overall percentage correct prediction rate of 84.8%.

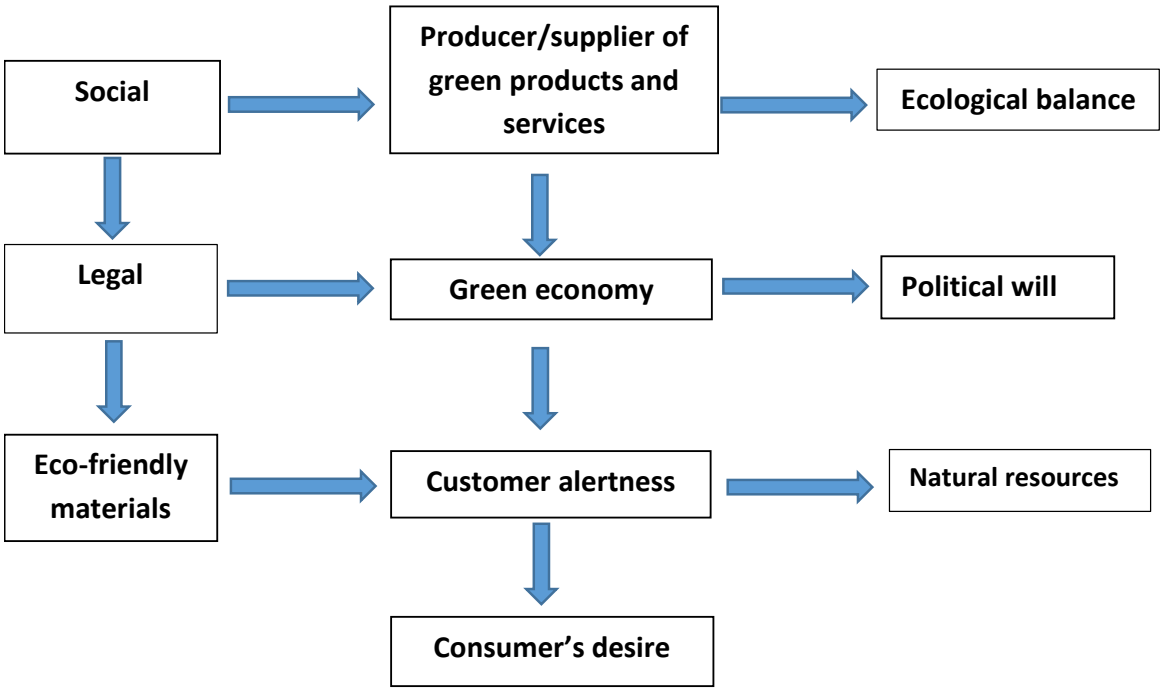
4. Analysis of the findings

Statistically adjusted relationship between the respondents of both genders and usability of green production exists in the country; the relationship between business type and sensitivity of any green product is easily obtainable; the linkage between business type and awareness of any green product exists in the market; the connotation between the type of institution and encouragement to goods and services of any green product in Bangladesh occurs; the relationship between different types of institutes and use of green product consumption is applicable in the country. Business leaders and entrepreneurs need to take appropriate steps to arrange green economy. This study has found that the plan to produce green products has strong and significant influence on the actual production and sale of green products. It can be observed from the empirical results that consumers who buy green products frequently are willing to pay higher price for the green products. Awareness of green product among the consumers should be raised. The sample size was adequate for factor analysis. The research has found that the proportion of total variation is explained by the first three components, which could explain about 80% of the total variation. As such, aforesaid three components could be very useful in encouraging green business in Bangladesh. From the perspective of Bangladesh, green products should be produced with greater enthusiasm, so that more green goods are availabile to the customers. To put more emphasis on production of green products, green financing should be increased. For human prosperity and sustainability, greater emphasis should be given to green customers, green products and green financing. With respect to the latter, it is to be noted here that Bangladesh Bank, the country's Central Bank, is moving in the right direction taking a strong role in recent years to promote green financing of various business enterprises and infrastructure projects. Such policies would be consistent with those of redusing, development disaster and environmental catastrophe, and hence both of these predicaments require to be tacked concurrently. Affected community is appreciating what is essential to be conscious of the severity of the environmental degradation as a matter, and more prominently, it needs to take appropriate measures.

The country lacks proper green building procedure and execution. Bangladesh needs more Auto bricks industry which will be environment friendly. Food adulteration is one of the problems of the country which should be addressed. Both formal and informal sectors jointly work for green economy. Green bond should be meticulously operated for realizing green economy. Delta plan 2100 requisites should be fulfilled for inclusive green growth of the economy.

Green economy can organize an economic arrangement which will do something competently at the point where marginal social benefit and marginal social cost will be equal. It is necessary for the government to put into practice strict green regulation in running the economy, society and atmosphere in a sustainable manner for all segments, namely that is agriculture, service, and industrial sectors, via green directive and funding through Green Public-Private-Overseas-Partnerships (GPPOP). This will additionally offer inducement and inspire green materials, manufacture, transaction, promotion, allocation and intake of green merchandises, resulting in wide-ranging economic growth and advancement of Green for a country like Bangladesh with a view of ground-breaking all way out for sustainable manufacture, delivery, intake and acceptance a sharing the economy for green inclusion. Though green banking has been introduced in the country, it lacks any effective result. This ought to work in terms of Rao and Giddaiah (2017). Bangladesh goverment should think to set up green investment bank like UK based as described by Ross-Tatam (2013). For arranging green economy, capacity-building in the country is needed to be attained. Greener technology transfer will help to achieve sustainable development goals by 2030. As such, private sectors and overseas sectors also need to help the economic progress.

Green economy deliberates altogether socio-ecological-political and legal factors to encourage eco-friendly materials and natural resources. Impact of green economy refers to environmental risk analysis and management which are shown in Figure 2.



Source: Compiled by the author

Fig. 2. Impact of green economy and environmental risk analysis and management

Figure 2 shows the relationship between social aspect producer/supplier of green products and services, ecological balance. Green economy is the main concern. It relates to customer alertness, legal aspect, eco-friendly materials and communicates to consumer's desire. Political will, natural resources and consumer's desire are interconnected. Safe water and security of food are the most desirable outcome without land and nature devastation.

Conclusion and implications

Bangladesh leads to expression of diverse nature, distinct and disastrous blows engendering survivals and maintenances of the peripheral portion of the inhabitants as a tragic scenario of a victim of nature. As such, establishing green economy can reduce magnitude of the worst impact of natural disasters which are increasingly becoming more frequent and more severe. Consumers, producers and financiers need to be aware of green concept with ethical values. Organic food should be arranged and food safety and security ought to organize by the creator.

Primary data were collected and utilized to test several hypotheses about green economy as for consumers, production and sales in the country in order to deal with the climate change issues facing Bangladesh. The non-parametric tests of the hypotheses found strong statistical avidence for the survey data.

From non-parametric Chi-square tests, statistically significant relationship between the respondents of both genders and usability of green production in the country exists; the connection between business type and sensitivity of any green product is easily obtainable; the linkage between business type and awareness of any green product is accessible in the market; the connotation between the type of institution and encouragement to goods and services of any green product in Bangladesh occurs; the relationship between different types of institutes and green product consumption is applicable in the country. Business leaders and entrepreneurs need to take appropriate measures to arrange green economy. This study has found that the plan to produce green products has strong and significant influence on the actual production and sale of green products. Alertness among the consumers for green product should be raised. Green human resource management needs to be strengthened.

Green economy should play an essential role in combating global warming and climate change. Bangladesh requires enormous monetary support from international organizations and richer countries without tied condition to pursue the green path. Preparatory producing green product, arranging finance, raising awareness among the consumers of the green product in Bangladesh are required. To attain the UN's sustainable development goals by

the year 2030, strong emphasis on green economy with green financing would play a vital role. Bangladesh Bank has taken some initiatives for green financing through the banks and non-banking financial institutions, but these need execution with massive drive and practical exposure. Goverment needs to prepare a new Environment policy with the change of time and execution. It is a vital issue to be planned and executed. There is a room for the government and the Ministry of Finance in particular to take measures for green economic adoption and mitigation under local level planning. Further organic fertilizers, organic products, green fuel, and food security should be patronized by the government of the country. Organic farmers are essential to be organized under umbrella at grass root level so that they can easily get access to the market for which local level planning needs to be strengthen.

According to the present study, the respondents in Bangladesh are also quite supportive for green economic expansion that will keep the country protected from environmental disasters. To establish green economy as a super goal, new green investment bank ought to be established in Bangladesh with the following purposes:

- substitute old technologies to reduce carbon emission;
- supply human fundamental needs through reducing environmental risk;
- inclusive green economic development and growth;
- acquaint with renewable energy sources;
- procedure of surface water;
- world-wide collaboration to protect environment and climate change is required;
- Dohlaikhal area of Bangladesh may be acknowledged as an industrial belt, and financing from the Green investment bank may be conducted;
- micro insurance may be arranged for generating green product.

A strong monitoring and surveillance team of using green climate fund by Idcol and PKSF for betterment of green economy is being required. All types of religious institutes can be patronized to think about and spread green economy through fastening the belt. Green rooftop may be encouraged along with capturing rainwater from the roof, drainage, solar panels and irrigation arrangements by the planners and policy makers. People need to attain better livelihood in a green sustainable environment. A model of inclusive green economy may be encouraged with special steps for coastal areas, haor areas, hilly areas and water logged areas of Bangladesh so that green economy can be raised. As for the school level, training kids concerning necessity of green creation and intake ought to start.

Since trees absorb carbon emissions, more emphasis on tree plantation and forestation should be a focal point for the country, where grown up person may be encouraged to plant trees. Reducing carbon emissions, pollution control, boosting up resource competence or adoption of ecological unit services, whose sustainable management could be recognized by engaging all levels of stakeholders in the process, should be arranged. Climate resilience system and carbon emission should be reduced for the economic society wellbeing. Together fiscal and monetary policies should be used simultaneously at domestic level for arranging green economy to protect the environment. Goverment of Bangladesh should introduce environmental taxes, incentives and subsidies. High tax should be imposed on those who are destroying nature, environment and engaging in non-green commercial activities. Organic farmers may get incentives and/or subsidies. Measures should be taken to stop soil erosion. Green energy requisites are to be used with appropriate precaution. Strong coordination of efforts and initiatives by different players including political will in this area are needed to lead the future projects through regional cooperation for common global interest.

Future research work

The study was limited to two cities of Bangladesh. A separate detailed study may be assumed to weigh the requisite to utilize the green products so that natural disaster can be driven out with the help of technological advancement, ground-breaking and start up procedure under holistic approach with the view to be implemented by the policy thinkers. It must be admitted that regardless of the results achieved in the study, it has been discovered that, as long as policy makers and strong political will are not adopted by the procedure for implementation, this will not produce any fruitful results for stable green economy to achieve social welfare for human being.

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