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Is Green Regulation Effective or a Failure: Comparative Analysis between Bangladesh Bank (BB) Green Guidelines and Global Reporting Initiative Guidelines

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Abstract: Green reporting and green regulation have been commonly used in the sustainability movement. This study evaluates Bangladesh Bank's (BB's) green regulation by considering the global reporting initiative (GRI) of environmental regulation along with self-determined content to justify BB's institutional effort in the banking sector. The analytical study has considered secondary data of all listed banks on the Dhaka Stock Exchange between 2013 to 2016. A multi-theoretical framework has been adopted in which the research is comprised of institutional, stakeholder, and legitimacy theories. Considering the analytical research, we have drawn-up a green reporting score and undertaken SWOT analysis. The results of the study have identified the narrow coverage of BB's regulation and strategic limitations. Moreover, the findings of the study show that banking companies disclosed more green information in line with BB's regulation. Furthermore, our analysis has found the lack of transparency of green reporting in terms of absent global reporting as well as external verification. Additionally, we have documented that BB's regulation falls into a legitimacy threat owing to political, corporate, and social responsibility. Therefore, we concluded that for BB to overcome all possible weaknesses and threats, it should consider all possible opportunities for a holistic international reporting framework while taking into account a transparent financial sector.

Keywords: green reporting; green banking; GRI; CSR; developing country; Bangladesh bank; SWOT

1. Introduction

At this moment, climate change is the most burning issue on a global context and Bangladesh is situated in the most vulnerable position. Bangladesh will be burdened with significant losses if the situation remains unchanged and it is estimated that the annual loss would be 2% and 9.4% of the gross domestic product (GDP) by 2050 and 2100, respectively, while the country is responsible for less than 0.35% of global carbon emission [1]. As a result of excessive green-house gas (GHG) emissions, business organizations are making an effort to work toward "green" sustainability. "Green" and "sustainability" are sophisticated words commonly used in national and international businesses, economics, and politics in relation with environment and climate change issues [2]. Therefore, green reporting is a common phenomenon among financial or non-financial, manufacturing or merchandising, national or multinational, and large or medium-small organizations. Moreover, green strategy to enhance green performance including green disclosure is commonly used in environmental

management strategy [3,4]. Considering this, environmental management or green management is the key driver for a sustainability management strategy and is interconnected with triple bottom lines (see Figure 1). Prior literature has stated that the financial sector disclosed green information to be legitimate in society and improve their value, reputation, sustainability, and the competitiveness of their company [5–7]. Moreover, banks are engaged with financing manufacturing and non-manufacturing organizations and are directly and indirectly involved in environmental issues [8]. As a result, banks have sufficient responsibility for green and sustainable strategy.

Green reporting is a greater concern for developed countries while developing countries concentrate less on green issues and focus more on economic development [9–11]. Prior studies argued that green reporting is highly motivated by specific regulation and law. Delgado-Márquez et al. [12] found that firms operating in the regulated industries disclosed more information because of industry norms and globalization. Comyns [13] argued that firms under the European Union (EU) trading scheme following the global reporting initiative (GRI) guidelines provide better quality and quantity of environmental information. Many regions and individual countries mandated corporate social responsibility (CSR) or green reporting by law and regulation [14,15]. For example, from 2014, CSR reporting is compulsory in EU and India. On the other hand, Ortiz-de-Mandojana et al. [16] documented that the environmental performance of firms in North American and European countries depends on national institutional pressure. Moreover, Lopatta et al. [17] and Dam and Scholtens [18] argued for regulatory changes of CSR policy on ownership share. Therefore, specific regulations or guidelines make green reporting more comprehensive to an organization.

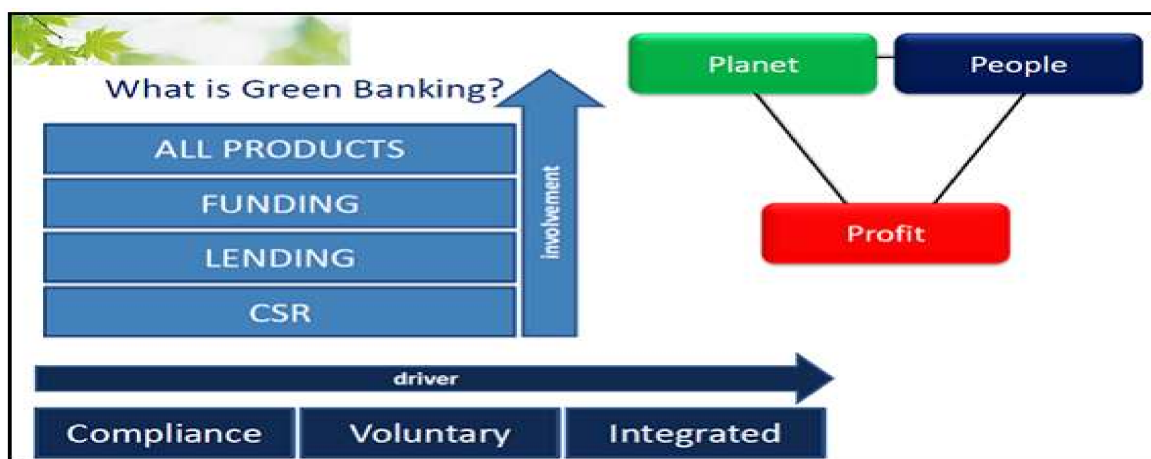


Figure 1. Concept of Green Banking on the Triple Bottom Line. Source: Mahfuzur Rahman and Barua [19], p. 2.

Since 2011, there has been no specific regulation for green banking and reporting in Bangladesh. Bangladesh Bank (BB), which is the central bank of the country, has introduced the first green guideline of the financial sector in 2011 [8,20,21]. Masud et al. [8] identified that Bangladesh has 29 environmental regulations despite the fact that the country's environmental position is the most vulnerable on a global context. Recent research has implied that BB's green guidelines have positive impact on the level of green disclosure based on banking history [8,20,22,23]. BB provided its final updated version of green guidelines in 2013 and stated the ambition of green reporting globalization by introducing GRI and external verification of the report from 2015 [21]. As a result, a few banks have produced sustainability reports following the guidance of GRI since 2012 (see Table 2). However, understanding how banks comply with GRI sustainability guidelines and BB's green reporting guidelines are gaps that exist in terms of policy and implementation levels of CSR in the management [24]. GRI guidelines are based on the concept of the triple bottom line while BB's green reporting guidelines mostly cover an environmental approach. Moreover, it is also considered that GRI guidelines are the most commonly

and widely used sustainable reporting framework [14] for the analysis, presentation, and reporting of sustainability performances of both developed and developing countries [25,26]. Therefore, the study is designed to understand the drivers of BB's green reporting guidelines and the implication of GRI sustainability guidelines to the banking companies as well as to identify the similarities and differences between GRI guidelines and BB's green reporting guidelines.

There is a dearth of research on BB's green reporting guidelines and GRI sustainability guidelines of the country. Bose et al. [20] conducted a study on BB's green reporting guidelines and found that BB's green guidelines have significant impact on green reporting and the disclosure practice has been increasing since 2011. However, the empirical study did not make any attempt to examine the GRI implication on banking companies. Masud et al. [8] conducted a research on environmental accounting and reporting of listed banking companies and found a satisfactory level of environmental information disclosure among the banking companies. However, they did not consider the emergence of GRI reporting in the banking sector. Islam and Chowdhury [27] conducted research on GRI G4 reporting of the listed banks and concluded that the G4 sustainability reporting level is very poor. However, the study was limited to 2014 and they did not mention the banks' compliance with BB's green guidelines. Hossain et al. [21] found that the level of disclosure based on green banking guidelines has sharply increased since 2011. However, the study used very limited samples and did not mention anything on GRI. Khan et al. [26] were the first to study GRI reporting by the country's banks and documented that the CSR disclosure level is increasing but does not use GRI guideline. The study was based on very limited samples and was conducted before the inception of BB's green reporting guidelines. Moreover, Uddin et al. [22] studied 23 banks from 2009 to 2012 and argued that banking companies are engaged in CSR expenditure and disclosed CSR information to support the ruling parties' political agenda and powerful leaders' personal project benefits. Their argument is a real threat to BB's CSR and green reporting guidelines. Therefore, this is the first attempt in the green reporting history of the country that analyzes the strength, weakness, opportunities, and threats (SWOT) of the country's financial institution reporting guidelines and compares it with the international reporting guideline. Moreover, the study made an analysis of 11 contents drawn from prior literature to indicate BB's green regulation emergence and effectiveness in the banking sector from 2013 to 2016.

The remainder of the paper is organized as follows. The "Theoretical Discussion" section discusses the theoretical framework and the "Literature Review" section discusses literatures on green disclosure. The "Research Methodology" section explains data collection and research methods. The next section called "Results and Discussion" reports the findings of the study and the "Conclusions" section offers policy implications of the results and future research.

2. Theoretical Discussion

The study has considered three sets of theoretical framework including institutional, stakeholder, and legitimacy theories for better understanding management's motivation regarding green regulation and disclosure.

2.1. Institutional Theory

According to the institutional theory, the organizational field is the crucial factor for determining internal and external forces of the organization for major decision-making regarding green reporting. According to Bebbington et al. [28] *"fields are, thus, best understood as the center of dialog and interaction, through which a diverse range of institutions come to bear on field participants, and influence common organizational behaviors and their rationality"* (p. 593). As such, green reporting or sustainable reporting has become an important field of an organization [13,20,29,30]. An organization's institutional process is incorporated by isomorphism where internal and external changes in an organization consist of coercive, mimetic, and normative influences [13,20]. Isomorphism is generally related to a company's strategic legitimacy that primarily seeks organizational survival in the institutional environment [13,31]. On the other hand, coercive or regulatory pressures such as laws and regulations of different bodies

including parent companies, national, and international institutions, oblige organizations to change their structure. Owing to mimetic or cognitive pressures of those surrounding a diverse organization, a company is influenced to follow particular rules and regulations to survive and achieve competitive business advantages. Normative factors such as social norms, beliefs, and values also influence organizations to consider acting in a socially responsible manner and showing professionalism [16]. Moreover, the institutional theory is widely used to explain green reporting since it is expected that companies respond strategically to overcome institutional pressures and provide more information to the intended stakeholders [32]. Chen et al. [9] states that governmental laws, regulations, and social requirements are important and influential drivers of environmental management practices.

All organizations operating in institutional environments are motivated to interact with social expectations and abide by social norms, rules, procedures, and regulations [13,32]. Scott [33] defined institutionalization as the process of shared information between an individual and society. Dillard et al. [34] stated that institutionalization is the combination of developed and learned processes with an organization and within society. Comyns [13] argues that organizations work in a changing environment due to being incorporated into changing organizational elements and structures as the result of formal and informal pressures. In a changing environment, normative pressures may encourage organizations to produce voluntary green reporting [13,20]. Bose et al. [20] argues that banking companies are incorporating green guidelines by owing to institutional pressures and are employing green disclosure to be more legitimate in society. In the institutional theory context, the industry sector, specific guidelines, and government mandatory regulations influence organizations to comply with coercive and mimetic pressures. Ortiz-de-Mandojana et al. [16] state that institutional pressures encourage managers to seek environmental sustainability. Berrone et al. [35] found that regulatory and normative pressures engage organizations in more green innovations. With regard to green reporting, it is evident that specific regulations on reporting make companies more transparent, stakeholder oriented, and compliant [25]. From an institutional point of view, it is generally expected that, when companies are regulated by formal and legal systems, they comply with specific guidelines or regulations to maintain strategic legitimacy. Therefore, we believe that BB's green guidelines and GRI guidelines have sufficient influence on the banking companies of Bangladesh in terms of following the green reporting rules to maintain institutional legitimacy.

2.2. Stakeholder Theory

Stakeholder theory is commonly and widely used to explain disclosure practices. Generally, stakeholders refer to a diverse group of people including shareholders, creditors, employees, suppliers, media, NGOs, investors, government, customers, environmental group, and national and international bodies [8,13,36]. Comyns [13] considers that organizations report GHG information in terms of both quality and quantity due to strong stakeholder pressure. Masud et al. [8] argues that banking companies are disclosing more environmental information due to different activist group pressures. Kiliç et al. [37] argues that different stakeholders concerned with CSR performance of banking companies put pressure on the management for CSR disclosure. Esteban-Sanchez et al. [5] state that better employee relationships between banking companies increases better CSR performance that leads to disclosing more environmental information. Khan et al. [26] highlight that banking companies are reporting environmental, decent work, and labor information in their annual reports. Lu et al. [10] argue that organizations in developing countries disclose more qualitative CSR information due to stakeholder pressure and increasing importance of social reputation. Benlemlih et al. [38] state that environmental reporting practices enhance transparency, reputation, and trust of the stakeholders. Moreover, organizations work in a challenging and competitive environment and receive significant pressures from strong environmental groups investing in environmental projects [13]. Furthermore, strong national and international environmental groups, international donor agencies, and funding organizations encourage organizations to invest in the area of environmental pollution, environmental innovation, green products, environmental management system, and appropriate utilization of natural

resources [7,9,12]. As a result of multi-stakeholder pressures, banking companies are reporting more green information and launching more green products to protect their investment and reputation as well as to improve customer satisfaction.

2.3. Legitimacy Theory

Legitimacy theory explains the relationship between organizations and society in terms of social norms and values. According to the legitimacy theory, organizations and society work for each other. Their relationship is based on the value system of the society [8,13,23,39,40]. Strategic legitimacy is used in the green reporting literature to explain the motivation behind reporting practices of an organization. Comyns [13] state that a legitimate organization discloses more GHG information to fulfill societal expectations and to gain media coverage. Nurunnabi [6] argues that companies produce climate disclosure in their annual reports to be legitimate in the society, which informs it of the organization's position in terms of climate change issues. Kiliç et al. [37] considered banking company management reports and their CSR information in the annual report to legitimize their actions in meeting social expectations in this area. Clarkson et al. [41] report that organizational legitimacy results from the reactive and proactive CSR strategies. Companies undertake businesses in society to fulfill social expectations and there is a legitimacy gap when a company's actual or perceived performance is not in accordance with social expectations [37,42]. Moreover, when a company's perceived performance meets social expectations, it will gain social congruence [42]. Cho and Patten [43] state that firms face more pressures to disclose environmental information when they have limited environmental initiatives. In order to mitigate the legitimacy gap and gain social congruence, banking companies are expected to maintain green reporting. Khan et al. [26] documented that banks are following GRI reporting guidelines and disclose more social and environmental initiatives such as education, poverty alleviation, and human rights to legitimize their existence in society. Bose et al. [20] report that banking companies are practicing green guidelines and ensuring green disclosure to reduce the legitimacy gap between organizations and society. Moreover, Masud et al. [8] argue that banks disclose more environmental information in their annual reports to reduce the social gap and enhance organizational perspectives of the most crucial issues of a country. This argument is also consistent with prior research of Esteban-Sanchez et al. , Ullah and Rahman [44], and Khan et al. [45].

3. Literature Review

This research has focused on a wide range of studies on green regulation and disclosure in relation to developed and developing countries. Moreover, we also explain the green practices of Bangladeshi banking companies along with BB and GRI regulation.

3.1. Developed Countries Green Regulation

Green reporting practices are increasing globally, but in most of the cases, it is being practiced in developed countries. In developing countries, some studies have explored green reporting in the name of sustainability reporting, CSR reporting, environmental reporting, and environmental accounting reporting [8]. There is a dearth of research on green reporting of banking companies. In the context of developed countries, Day and Woodward [46] conducted research on the UK's financial service sector's CSR reporting and documented that, comparatively, the disclosure level is lower than the non-financial sector. Tsang [47] stated that Singaporean listed banking, food, and hotel companies provided significantly lower CSR disclosure and 52% of companies examined did not disclose any CSR information. Esteban-Sanchez et al. [5] conducted a study on 154 financial entities of 22 countries from the year 2005 to 2010 and concluded that banking companies did not obtain a sufficient benefit from CSR performance in all dimensions while banks with good employee relationships had significant relationships with CSR performance. Lopatta et al. [17] undertook longitudinal research on CSR disclosure performance of 2232 banking companies' from 24 countries between 2003 to 2012 and found that bank shareholding is positively related to CSR reporting. Cheng et al. [48] argued

that companies disclosing more CSR information face lower capital constraints, which leads better stakeholder engagement and transparency. Prior research identified that different regulations have played significant roles in green reporting, green innovation, and the green movement in developed and developing countries [12,48]. Ortiz-de-Mandojana et al. [16] conducted research on 210 firms in 14 countries in North America and Europe and documented that institutional cognitive and normative pressures aid environmental reporting of the region while coercive pressures discourage environmental reporting. Comyns [13] conducted a study of multinational companies' (oil and gas) from the years 1998 to 2010 and stated that EU emission trading scheme regulations and GRI guidelines that regulate companies disclose better quality and quantity of GHG information in their sustainability reports compared to non-regulated companies. Feng et al. [49] documented that carbon emission trading policies reduced China's enterprises innovation capability. Moreover, Carrots and Sticks [14] report that there were 383 sustainability reporting regulations in 64 countries in the world in 2016. Additionally, 65% of these regulations are mandatory and the rest are voluntary. The findings of the report strengthen the regulative requirement of green reporting globally.

3.2. *Developing Countries' Green Regulation*

Prior research on South Asian (SA) countries also documented poor green reporting practices in the region. They also argued that SA countries' green reporting is limited to specific sectors including oil, cement, mineral, and pharmaceutical sectors [8,50]. Dissanayake et al. [50] studied 60 listed companies of Sri Lanka between 2011 and 2012 and revealed that the social information disclosure level is higher than the environmental information disclosure. They also argued that financial companies disclosed more social and environmental information than non-financial companies. Subramaniam et al. [51] studied the CSR policy of the Indian government-owned firms and concluded that company managers believe that compulsory CSR regulation enhances CSR performance. Specific laws and regulations clearly mandate organizations' green strategies as well as the development of a strategic movement of sustainability reporting [9,20,51,52]. Patel and Rayner [52] claimed that sustainability reporting of Indian organizations is determined by the cultural diversity of stakeholders. Recent green initiatives by the Indian and Pakistani governments are inevitable since CSR is mandatory for all companies unlike Pakistan where it is voluntary [53]. Additionally, the top 500 listed companies have to prepare a "business responsibility report" in India according to securities and exchange regulation. Moreover, Kiliç et al. [37] studied CSR reporting of the Turkish banking industry and documented that CSR reporting was satisfactory and corporate governance elements such as board size and the ownership structure are positively related to CSR reporting.

3.3. *BB's Green Regulation*

Green reporting practices have been increasing in developing countries such as Bangladesh in the last few years. Prior research studies outlined that the absence of specific guidelines, weaker stakeholder engagement, and lack of social awareness are reasons for poor green reporting performance in Bangladesh [6,54,55]. Hossain et al. [21] reveal that Bangladeshi banking companies' green disclosure level is poor even though it has improved since 2011 due to the initiatives of the central bank green guidelines. The most recent work of Bose et al. [20] documented that green reporting of the banking sector of Bangladesh is gradually increasing due to BB's regulatory initiatives. They argued that BB's green banking guidelines increased the level of green disclosure. They also stated that institutional share ownership and board size is positively associated with green banking disclosure of the country's financial sector. Moreover, their result is supported by the latest study of Masud et al. [8] who alleged that regulatory pressures play a major role in green reporting by banking companies. They revealed that all banks disclosed environmental information in their annual reports and, on an average, disclosure of environmental information was 3% to 16.5% in 2010 and 2014, respectively. Khan et al. [26] conducted a study on a small sample size of banking companies in Bangladesh in accordance with GRI guidelines and documented that environmental disclosure practices of the

banking sector are increasing. They found that 83.33% of banks disclose environmental information. Khan [56] undertook an empirical study on CSR reporting of banking companies of Bangladesh and found that the CSR reporting level is increasing and reporting is influenced by corporate governance structures. Islam and Chowdhury [27] conducted a study on GRI G4 sustainability reporting of all listed banks in Bangladesh and concluded that the overall disclosure performance is poor (36%) while GRI environmental information disclosure was the lowest (4%). Masud and Kabir [24] conducted a qualitative study on the different levels of bank management to evaluate the understanding of CSR policy and strategy of the management and document the gap in the policymaker's understanding and implementation. Nurunnabi [6] conducted a study of climate change disclosure on 71 listed companies of Bangladesh between 2011 to 2012 and claimed that the climate information disclosure level is poor and only 2.23% of companies report climate information while banking companies' disclosure level is 3.64%. He alleged that the lack of regulation and social accountability are the reasons for the poor disclosure level. Moreover, Carrots and Sticks [14] documented that Bangladesh has three regulations for green reporting including one that is mandatory while the remaining two are voluntary. All the three green regulations were mandated and supervised by the BB.

3.4. GRI Regulation

In the literature of green reporting, environmental reporting, CSR reporting, and sustainability reporting, GRI guidelines have been used extensively due to their wide range of visibility, acceptance, and sustainable policy formulation. GRI is considered an influential guideline in the area of triple bottom line reporting. Globally, GRI guidelines have been linked to several international reporting frameworks (see Table 1) in the area of sustainability reporting [15]. Most of the Fortune 500 companies follow GRI guideline and this indicates the strength of the GRI guideline in terms of the diversity of stakeholders and accountability of the corporate leaders. Despite the wide acceptance of GRI, prior literature also pointed out the absence of transparency in GRI reporting and the lack of using GRI reporting as a marketing tool to communicate with stakeholders and society [43,57,58]. Boiral [57] found an absence of trust and transparency in GRI reporting and identified that 90% negative events are omitted in the sustainability report.

Table 1. Linkage between GRI and other international sustainable reporting guidelines.

GRI Guidelines	UNGC “Ten Principles”	OECD “Multinational Enterprise Guidelines”
Economic Aspect (EC1–EC9)	No specific principles	General policies
Environmental Aspect (EN1–EN34)	Principle 7, 8 and 9	Environment
Social Aspect: Sub-category Labor Practice (LA1–LA14) Human Right (HR1–HR12) Society (SO1–SO11) Product Responsibility (PR1–PR9)	Principle 1, Principle 2, Principle 3, Principle 4, Principles 5, 6, and Principle 10	Employment and industrial relation Combating bribery Consumer interests Competition

Source: Authors' own compilation.

4. Research Methodology

4.1. Sample Selection

This study is analytical in nature and provides information on green reporting practices of the Bangladeshi banking sector by using information from secondary sources. The sample for the study has been collected from the Dhaka Stock Exchange (DSE), which is the largest capital market of the country. DSE has 30 listed banks and the study has considered all the listed banks (see Appendix B) from 2013 to 2016. The annual reports of the listed banks are the main sources of information. In addition to the annual report, we also considered green banking reports of the listed banks from BB's website and standalone sustainability reports from the GRI database [59]. Additionally, a few listed financial

companies followed GRI guidelines in preparing sustainability reports (see Table 2). During the research period, annual reports were collected from company websites and the missing annual reports were collected from different financial services by providing the company websites. Moreover, it is widely accepted that an annual report is a popular way to communicate with stakeholders and society as a whole [8,55].

Table 2. Banking sector and GRI reporting.

Comply with GRI (GRI Database)	Sourcing GRI (GRI Database)	Informal GRI (Annual Report)
BAL	EBL (Citing GRI)	IBBL
MTB	BRAC (Non-GRI)	SoIBL
PBL	SEBL (Non-GRI)	TBL
		UCB

Source: GRI database [57] and annual reports.

BB made its first attempt in 2011 to issue a circular on green banking guidelines and instructed the adoption of guidelines by the end of 2013 [8,20,21]. Moreover, in 2013, BB finalized the green guidelines version titled “Policy Guidelines for Green Banking” and recommended implementing it by 30 June 2015. As a result, 2013 was the year that the initial direction of the financial sector reporting had a complete set of (three phase) green disclosures. Furthermore, BB’s green guidelines are the first specific reporting regulation of the country since 2011 [8,20]. Therefore, the study period took place from 2013 to 2016. As a result, the study selected 120 firm-year observations of all listed banks for four years. Additionally, two banks started releasing GRI reports in 2012 and three out of 30 banks are currently complying with GRI.

4.2. Research Methods

The study focused on green reporting of Bangladeshi banking companies and compares the application of green guidelines of BB and GRI environmental guidelines. Prior studies rely on content analysis to measure the quantity and quality of green and sustainable information disclosure. Previous research studies used different types of content analysis such as the number of sentences and words [39]. The number of words, sentences, pictures, graphs, and tables were suggested by Ullah and Rahman [44]. Many researchers such as Baral and Pokharel [60] and Gamerschlag et al. [61] used the number of keywords. Researchers also used a mixed approach in the past in the reporting analysis. Hossain et al. [54] and Nurunnabi [6] used interview and content techniques for environmental reporting. Moreover, in the content analysis techniques, general disclosure of content is mostly used in sustainability reporting. General disclosure techniques measure any particular content that is reported or not reported in the annual or sustainable report. Prior studies used general disclosure techniques for banking companies’ green reporting [8,11,20,22,26,27,37,56]. On the other hand, general disclosure techniques for sustainability and CSR reporting for non-financial sectors were also used [9,13,16,23,50]. In addition, Oh et al. [62] and Chang et al. [63] used CSR rating for CSR disclosure analysis. Consistent with prior research [8,20,21,26,27], BB’s green guidelines of 2011 (BPDP circular no. 02) and 2013 (GBCSRD Circular letter no. 05) follow general techniques of content analysis and develop 11 major (see Appendix A) content areas for measuring the green reporting of banks. The contents are mainly developed to serve two purposes. First, this involves comparing GRI environmental categories with BB’s green guidelines and identifying the big picture of BB’s guidelines and, second, it includes measuring the banking companies’ disclosure tendency. For example, code 1 (GR1-Green policy and strategy) defines banking companies short and long term policies on environmental initiatives and code 11 (GR11-Reward and motivation) reveals companies’ accomplishments and motivation behind green practices. Additionally, the study used SWOT analysis by drawing the best picture of BB guidelines and identifying their specific strengths, weaknesses, opportunities, and threats.

The study also considers the GRI coding systems and measures how many codes are used in their reporting. GRI G4 environmental guidelines have 34 contents coding from EN 1 to EN 34. Prior studies of Khan et al. [26] and Islam and Chowdhury [27] have found that some GRI coding systems are similar to Bangladeshi banking companies' reporting. The present study has identified how many GRI environmental coding systems are currently adopted by the banks in their reports and the similarities of their coding systems compared with BB's green guidelines. The analysis has made an attempt to justify the green reporting of banking sector by developing a green reporting score (GRS) and coding system (see Appendix A) on 11 content categories using a dichotomous procedure suggested by Clarkson et al. in 2008. Each content category disclosing green banking information was given 1 if mentioned in the report. Otherwise the content category is given 0.

5. Result and Discussion

5.1. Comparative Analysis between GRI and BB Guidelines

5.1.1. Similarities between GRI Guidelines and BB's Green Guidelines

As stated earlier, GRI guidelines have three aspects including economic, environment, and social. However, BB's green guidelines concentrate only on environmental issues and green financing. As such, the similarities of the two guidelines are based only on the environmental aspects.

Table 3 demonstrates the similar areas of GRI environmental and BB's green guidelines. We find limited similar areas between the two guidelines. GRI covers most of the environmental issues regarding policy, strategy, financing, measurement, innovation, compliance, and grievance while BB's green guidelines cover only five of the above areas. Considering this, we conclude that GRI environmental guidelines are broader than BB's green guidelines in terms of coverage. Moreover, Carrots and Sticks [14] find that GRI reporting instruments are increasing in specific environments or due to social factors and 61% of companies in 2016 covered specific environmental or social topics. The report shows the strength of GRI reporting. On the other hand, Bose et al. [20] and Hossain et al. [54] expressed concern about the quality of green disclosure in Bangladesh. Furthermore, Masud et al. [8] conducted a content analysis of reports consistent with BB's green guidelines to find out that, comparatively, banks disclosed less information on environmental appreciation, waste management, climate change, and global warming issues. These research findings show the limited coverage of BB's green guidelines and the low quality of the guidelines. Additionally, Uddin et al. [22] identified that BB's CSR regulations are connected by implementing the ruling political party's agenda, personal project development of powerful leaders, and various advantages to be received from the government. Furthermore, Wagner and Seele [15] documented the regulatory gap between GRI G3.1 and G4 guidelines and argued that the gap may increase political CSR. The findings of Wagner and Seele [15] are consistent with the findings of Uddin et al. [22] in this regard.

Table 3. Similarities of GRI and BB green guidelines.

Areas	Possible Explanation
Green Strategies (GS)	GS incorporate and enhance environmental attempt and policy.
Environmental RiskManagement (ERM)	ERM is the key initiative of carbon emission and carbon footprint measurement.
Green Financing (GF)	GF is the key tool of motivating green environment and strategy.
Energy Efficiency (EE)	EE is the result of GS and GF.
Green Innovation (GI)	Innovation and technology is the power of GS.
Stakeholder Engagement (SE)	SE ensures the efficiency and effectiveness of GS, ERM, GF, EE, and GI. SE is the life-blood of the green movement.

Source: Author's own compilation.

5.1.2. GRI Coding and Bank Reporting

Table 4 presents the GRI environmental coding matched with Bangladeshi banking companies by reporting green disclosure. GRI G4 has 34 codes (i.e., EN1–EN34) covering 12 areas (i.e., energy to expenditure and investment). Bangladeshi banking companies followed only a limited number of GRI codes and areas in their reporting. We found that they reported only eight of 34 GRI codes and covered only five out of the 12 areas of GRI G4. The table specifically indicates the lower coverage and narrower scope of BB's guidelines than GRI environmental guidelines. The finding is also consistent with Khan et al. [26] and Islam and Chowdhury [27] where they found that four areas were covered under GRI guidelines. Banking company codes are also limited to qualitative environmental information rather than quantitative information (i.e., emission, energy consumption data) in the area of energy and emission.

Table 4. GRI environmental coding matched with green banking reporting.

GRI Code Number	GRI Code Name
EN3	Energy (energy consumption within the organization)
EN6	Energy (reduction of energy consumption)
EN15	Emission (direct greenhouse gas emissions)
EN16	Emission (energy indirect greenhouse gas emissions)
EN19	Emission (reduction of greenhouse gas emissions)
EN27	Products and services (extent of impact mitigation of environmental impacts of products and services)
EN29	Compliance (monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations)
EN31	Expenditure and Investment (total environmental protection expenditures and investments)

Source: Author's own compilation.

5.2. Green Reporting Performance Based on BB Green Guidelines

5.2.1. Green Reporting of Banks

Table 5 shows that the GRS of all banks based on predetermined contents during the research period. The table represents the disclosure area of banks according to BB's green guidelines. All banks have a green policy (GR1), green product (GR6), and motivation of CSR (GR11) while only a few banks cover international reporting standards on sustainability (GR10). Moreover, most of the banks strictly maintain environmental risk management guidelines related to investment (GR2), green office management facilities (GR5), and timely green reporting (GR9). The most crucial proponent of climate change is climate financing and formulation of climate change risk fund. The report ditches positive inclination of banks in climate financing (GR3) in addition to regulatory as well as institutional gaps in climate change risk fund utilization (GR4). BB's green guidelines have an extensive impact on the banking sector of the country specifically by formulating green reporting and initiatives. Furthermore, the result is also consistent with prior results of Masud et al. [8] and Bose et al. [20].

Table 5. Green reporting for the period of 2013–2016.

Bank/GRS	GR1	GR2	GR3	GR4	GR5	GR6	GR7	GR8	GR9	GR10	GR11
All Banks	120	119	114	101	119	120	116	117	119	11	120
Percentage (%)	100	99.17	95	84	99.17	100	96.67	97.50	99.17	9.17	100

Source: Author's own compilation.

Table 6 is prepared based on the results in Table 5, which presents the overall strong and weak areas of GRS. As stated in Table 6, GR6 and GR11 are the strongest aspects of BB's guidelines that indicate the institutional coercive and mimetic pressures that force banks to take the initiatives as a routine process [20]. Moreover, green financing, green product, and green office management legitimize banks with society and diverse stakeholders as a result of organizations' perceived benefits from CSR expenditure, tax rebate, opening new branches, CAMEL rating, and advertising. On the contrary, only three banks followed GRI guidelines and no bank had external verification in green reporting, which raised the question of banking companies' commitment to green action and compliance with BB's guidelines. In 2013, many banks declared that they would follow GRI reporting guidelines from the following year, but in 2016, they remained in the same stages (see annual report of IBBL [64], SoIBL [65], TBL [66], UCB [67], and Table 2), which may indicate the lack of institutional pressure as well as stakeholders' engagement [55]. Furthermore, poor green reporting hinders the standardization of reporting practices due to insufficient expertise and training. The doubtful nature of green reporting quality is consistent with the prior result of Hossain et al. [54].

Table 6. Strong-Weak areas of green reporting.

Strong Areas	Benefit Perceived	Weak Areas	Don't Care
GR1-Green policy and strategy	Policy formulation; green banking unit.	GR10-Internationalization of green reporting	Non-GRI reporting; zero external assurance; zero environmental auditing.
GR6-Green product and marketing	Proper utilization of alternative technology; energy efficiency.	GR4-Climate change risk fund	Irresponsible risk fund formulation and utilization; information not available.
GR11-Reward and motivation	CSR expenditure increased; maximum tax benefit; new branches opening.		

Source: Author's own compilation.

Table 7 presents banks' ranks based on GRS. Two banks (BAL and PBL) scored 44 out of 44 during the period and one showed the maximum effort on environmental effectiveness while one bank (MTB) scored 43 and ranked second. On the other hand, only one bank (PuBL) disclosed less than 60% information coverage and ranked the lowest (7). In addition, more than 70% of banks (22) scored 40 and ranked in the third position, which strongly reflect banking companies' endeavors to improve sustainable performance. The rankings are mostly consistent with prior results of Masud et al. [8] and Ullah and Rahman [44].

Table 7. Green ranking of banks between 2013–2016.

Green Reporting Score	GRS Percentage	Rank
44	100	1 (2 banks)
43	97.73	2 (1 bank)
40	90.91	3 (22 banks)
37	84.09	4 (1 banks)
36	81.82	5 (2 banks)
31	70.45	6 (1 banks)
25	56.82	7 (1 bank)

Source: Author's own compilation.

Table 8 is prepared from Table 7 to highlight the individual bank's performance based on BB's regulation. As stated earlier, BAL and PBL have shown a maximum effort on green reporting to legitimize themselves in society and among stakeholders, which complies with BB's green regulations. Most of the banks comply with BB's green reporting guidelines except PuBL and ICB (see Appendix B for the full meaning). During the study period, four banks (ICB, OBL, PuBL, and ShIBL) did not

disclose any information (zero) regarding climate change risk fund, which indicates the banks' poor commitment toward climate initiatives and lack of responsiveness to the stakeholders as well as society in terms of climate action. Moreover, a few banks' level of green reporting quality is decreasing annually (see annual report of TBL [66]). The results also highlight BB's lack of effective governance and monitoring and the regulatory gap that is also supported by the recent scandals of BB [68].

Table 8. Top-Poor ranks bank.

Top Banks	Possible Perspectives	Poor Banks	Possible Perspectives
Bank Asia (BAL) Prime Bank (PBL)	Legitimate with society and stakeholders; institutional commitment.	Pubali Bank (PuBL) ICB Islami Bank (ICB)	Lack of commitment to the society and stakeholders; unaware of climate responses.

Source: Author's own compilation.

Table 9 presents the descriptive statistics of GRS of sample banks from 2013 to 2016. In the year 2013, the average disclosure score was 26.545 with a minimum disclosure of 2 and a maximum disclosure of 30. The average GRS was approximately the same for 2014, 2015, and 2016.

Table 9. Descriptive statistics.

Year	TGRS	Mean	Median	Std. Dev.	Minimum	Maximum	Mode
2013	292	26.545	29.000	8.574	2	30	29
2014	295	26.818	30.000	8.396	3	30	30
2015	294	26.727	30.000	8.369	3	30	30
2016	296	26.909	30.000	7.749	5	30	30

Source: Author's own compilation.

5.2.2. SWOT Analysis of BB Green Regulation

SWOT is a well-known technique to analyze organizations' internal and external favorable and unfavorable factors relating to policy, strategy, product, place, industry, and person [69].

Table 10 presents the realistic picture of BB's green guidelines. In SWOT analysis, we found different elements of BB's guidelines that are linked with the strategic analysis of regulations and reporting. Considering the past, BB has taken the first step of providing mandatory and voluntary guidelines for the financial sector [14]. The initiative is a significant strength while the green guidelines commemorate the issues of climate change and climate financing, which are emerging in the country. The guideline explicitly points toward the formation of a green climate fund and the use of the fund in the most vulnerable areas and regions. The guidelines have mandated banks' rethinking for in-house energy management such as using solar energy, paper-less banking, and saving energy. The strength of the guidelines is also found in the recent study on the banking sector where researchers documented that environmental, CSR, and sustainability disclosure are extensively increasing from 2011 due to BB's green regulation [8,20,27]. Moreover, all the banks have an environmental policy, a green banking department, and CSR expenditure [70,71]. Despite the strength of BB's regulations, it is limited by many weaknesses mostly related to the formation of the regulation not transparent due to the lack of stakeholders' engagement. Prior research vividly argued that regulation is the institutional matter where implementation depends on stakeholders' and organizations' win-win situation [9]. Moreover, it does not ensure transparency and reliability because it is scattered and unstructured. The guidelines also ignored very crucial environmental issues of biodiversity and energy intensity. Furthermore, green reporting consists of three pillars of sustainability but it mostly considers environmental sustainability, which possibly decreases the importance of some of the sustainable development goals. The weaknesses mentioned are all consistent with the arguments of Hossain et al. [54], Masud et al. [8], Bose et al. [20], and Islam and Chowdhury [27].

Table 10. Big picture of BB green guidelines.

Strengths	Weaknesses
First specific environmental regulation; Climate drivers (raising the issue of climate change, global warming, carbon emission, and carbon footprint); Climate financing; Climate change risk fund; In-house energy efficiency drives; Environmental due diligence checklist; Motivational.	Scatter guidelines rather than strategic; Unstructured and immature; Absence of reporting principles; Non-compliance regulation; Ignoring economic and social issues; Level of transparency; Qualitative rather than quantitative; Ignoring biodiversity issues; How to implement?
Opportunities	Threats
Climate adaptation and mitigation; Awareness of the stakeholders; Business competitiveness; Triple bottom line concept; Promoting E-business (E-commerce, E-governance, E-marketing); Contribution in the global 2° temperature; Organized and regulated sector.	Advertising and tax benefit; Political CSR; Powerful leaders' project development; Family control management; Financial misconduct; Limited progress of GRI introduction; No external verification; Controlling and monitoring.

Source: Author's own compilation.

However, BB's green regulations have some opportunities that may break its weakness if appropriately used. Introducing climate financing and the climate change risk fund in vulnerable areas may provide projects financing for projects of climate adaptation and mitigation as well as cross cutting. Internet-based banking is an appropriate technology for combating climate change that may enhance E-commerce, E-business, and E-marketing. Moreover, the guidelines could be powerful tools for engaging diverse stakeholders that will ensure awareness and transparency of the sector. The implementation of the above-mentioned opportunities depends on BB's proper upgradation of the guidelines in line with the triple bottom [15]. Yet, BB's green regulation is majorly limited by its threats based on family and political control in the financial sector. The majority of the banks' governing bodies are formatted by family members, relatives [23], and independent members who also have family and political affiliations [22]. It is also evident that CSR expenditures are used for advertising, tax rebate [72,73], personal project, and political purposes [22] rather than for sustainable motives. Sayaduzzaman and Masud [73] argued that, out of 22 CSR areas, banks did not participate in nine areas and Uddin et al. 2016 documented that the major areas are related to ruling party's politics and powerful leaders' projects. A limited number of banks have been following GRI guidelines since 2011 and there is no external verification of CSR and green reporting of single banks that raises a question of BB's guidelines' effectiveness. Moreover, the recent financial heist of BB [68], government control banks (Sonali, Agrani, Janata, BASIC and Rupali), financial misconduct and corruptions [74], and private banks' management intervention by the government (Islami bank, Dhaka, Bangladesh) [75] brought BB's legitimacy under threat. These incidents confirm BB's poor controlling and monitoring over reporting practices. A strong regulation and its proper implementation can change the idealistic image of a financial sector into a realistic one [76]. Therefore, BB has to overcome these weaknesses and threats to show its strength and possible strategic utilization of opportunities.

6. Conclusions

Green reporting is an emerging issue in developing countries such as Bangladesh. Prior research has shown sufficient evidence of green reporting initiatives and their effectiveness for the country's financial sector. However, there is a research gap in regulatory perspective of green reporting and emergence of global green regulation. The study has attempted to narrow the literature gap by comparing BB's green regulations with international sustainable reporting regulations. In doing so,

the study has considered all listed banks between 2013 to 2016 by preparing 11 documents based on prior literature and BB's regulations.

Comparing the two guidelines, we documented the poor coverage of BB's guidelines in comparison with the GRI sustainability guidelines. The finding requires that the coverage of BB's guidelines have to be expanded to wider aspects in order to be regarded as sustainability reporting rather than green reporting. Moreover, there are some areas where similarities were found that indicate GRI and BB's efforts to legitimize themselves with societal standards and mitigate pressure from national and international stakeholders. Furthermore, we investigated GRI environmental coding and banking companies' coding. We observed that a limited number of GRI codes were found in their reports (only eight) (see Table 4). The results also confirm the lack of institutional pressures along with limited engagement of the banks with stakeholders. BB's green regulation is a praiseworthy initiative, but there is a lack of organizational commitment owing to the absence of checks and balance procedures. As a prime regulatory authority of the financial sector, BB has failed to oversee the green reporting quality of the banks and introduce GRI guidelines and external verification.

During the study period, most of the banks disclosed green information according to BB's guidelines. We have found some strong reporting areas such as green policy, green financing, green product, green office, and reward. The participating areas of banks confirm their commitment to green strategy regarding climate vulnerability of the country. Moreover, their environmental footprint is also threatening for some specific reasons such as a lack of transparency and assurance and inadequate information flow. No banks have external verification of green reporting and environmental assurance. However, most of the banks forgot their GRI reporting commitment and only a few banks covered GRI reporting standards (see Table 2). Additionally, an absence of board level CSR or Sustainable Committee indicates the management of long-run unwillingness for green strategy. Furthermore, institutional isomorphism ensures organizational success and survival and, more recently, Bangladeshi banks are facing coercive and mimetic institutional pressures from the BB's guidelines and the competitive market. However, the absence of normative institutional pressure, lack of stakeholder's engagement [52], and politicization of social and organizational behavior [22,31] are impediments for achieving green reporting.

The study has taken initiatives by drawing the big picture of BB's green regulation through SWOT analysis. This is the first strategic approach to green reporting evaluation where we clearly analyze BB's regulations' possible strengths, weaknesses, opportunities, and threats. Our interpretation is based on the content analysis findings. We documented that the regulation is promising to combat with climate vulnerability. In addition, the content analysis results showed that all banks have a green policy and strategy (GR1). Moreover, all banks participating in CSR expenditure (GR11) indicate banks' willingness to make social contributions. Additionally, it is considered that stakeholders' value and expectation define banks' strength as well as opportunities, but politicization of organization significantly encourages organizational motivation to engage in political CSR and corruption [22,31] that is the possible threat to BB's guidelines. Owing to the recent financial scandal along with a lack of organizational commitment, BB is under a legitimacy threat. Therefore, it remains to be seen how BB will cope with its green movements in the near future. The current scenario explicitly and implicitly shows that green reporting of the banking industry is growing, but it desperately requires globalization of reporting guidelines, proper supervision of green initiatives, knowledge-based management, and stakeholder engagement. Therefore, it is inappropriate to conclude that BB's green regulations have failed. Instead, it is high time to raise the question about BB's supervision and control in the emerging sector. To legitimize it with societal standards and diverse stakeholders, BB has to overcome all possible weaknesses and threats and should consider all possible opportunities for a holistic international reporting framework and a transparent financial sector.

The study has important theoretical and practical implications for the banking industry. Institutional, stakeholder, and legitimacy theories vividly explain the motivations behind green reporting of the country's bank. Therefore, strong reporting ensures transparency and competitive

advantages while mitigating institutional and legitimacy gaps. This study has significant policy implications for policymakers of the country specifically the financial sector's regulatory authority and banks' management. The content analysis has provided appropriate evidence to the banks' management and policymakers justifying strategic gaps in the green regulation of the country. The research can be used by the management as a tool for reviewing green practices along with CSR initiatives. Therefore, BB as a regulator can take consideration of the study for further development of green and CSR regulation in the line of GRI. Moreover, SWOT analysis would be a path finder to policymakers evaluating any regulation's efficiency and effectiveness.

Despite the theoretical and practical implications, the study is also limited by its descriptive nature and limited sample size. Moreover, considering the absence of empirical findings, it is very challenging to conclude the effectiveness of BB's green guidelines. Future research could be an empirical study to investigate the effectiveness of green regulations in the triple bottom line approach to the financial sector of the country.

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Author Contributions: Md. Abdul Kaium Masud carried out the empirical studies, the literature review, and drafted the manuscript. Mohammad Sharif Hossain participated in the design of the study and data collection. Jong Dae Kim helped to draft and reviews the manuscript and communicates with the editor of the journal. All authors read and approved the final manuscript.

Conflicts of Interest: The authors declare that they have no competing interests.

Appendix A

Table A1. BB Green Reporting Content.

GR Code and Content Name	Content Information
GR1-Green policy and strategy	Short-term and long-term policies for carbon emission and footprint, environmental protections, climate change, and global warming, climate adaptation and mitigation, energy efficiency, and renewable energy; sector specific environmental policies and strategic planning; establishing green banking unit, director level committee.
GR2-Environmental risk management	Assessing possible sources of risks before credit sanction; developing and updating credit risk methodology; auditing guidelines and reporting format considering environmental and climate risks; introducing environmental due diligence (EDD) checklist.
GR3-Green financing	Encouraging investing in renewable energy project, clean water project, waste water and management treatment plant, solid and hazardous disposal plant, and green and environmental innovation and technology.
GR4-Climate change risk fund	Climate change responsibility; formulation and utilization of climate change fund for flood, cyclone, and drought; ensure more financing in the climate vulnerable areas and sectors.
GR5-Green office management	Energy use, saving, and efficiency; electricity consumption and saving; gas and fuel consumption and saving; water consumption and saving; less consumption of paper; eco printing; using solar energy; green office guide; reduce business travel.
GR6-Green product and marketing	Online banking; mobile banking; SMS banking; Internet banking; video conferencing; virtual meeting; E-statement; online clearing house; online advertising; telemarketing; Email documentations.
GR7-Stakeholders training and awareness	Social, investors, and customers awareness of environmental, water, and air pollution; using renewable sources of energy; tree plantation; use energy efficient vehicles; regular training to the employees; introducing green day, green events.
GR8-Innovative green concept and technology	Technology transfer; investing green technology; resources mobilization by technology; electronic fund transfer; establishing ATM; research and development.
GR9-Green reporting	Quarterly, half yearly, and yearly green banking reporting; disclosing details of environmental initiatives and carbon footprint; providing sufficient information on climate risk fund utilization and green financing; using standalone sustainability reporting; updated website regarding green disclosures and annual report; real time information.
GR10-Internationalization of green reporting	Using globally recognized reporting standards; following GRI guidelines; green reporting assured by third party verification and introducing social and environmental auditing.
GR11-Reward and motivation	Ranking top ten green banks; risk rating facility; positive impact on CAMEL rating; opening new branches; CSR rating; tax benefit; gaining circulation of Green Bank logo.

Appendix B

Table A2. List of Banks.

AB Bank Ltd. (AB)	Mutual Trust Bank Ltd. (MTB)
Al-Arafah Islami Bank Ltd. (AAIBL)	National Bank Ltd. (NBL)
Bank Asia Ltd. (BAL)	National Credit and Commerce Bank Ltd. (NCC)
BRAC Bank Ltd. (BRAC)	One Bank Ltd. (OBL)
City Bank Ltd. (CBL)	Premier Bank Ltd. (PrBL)
Dhaka Bank Ltd. (DBL)	Prime Bank Ltd. (PBL)
Dutch Bangla Bank Ltd. (DBBL)	Pubali Bank Ltd. (PuBL)
Eastern Bank Ltd. (EBL)	Rupali Bank Ltd. (RBL)
EXIM Bank Ltd. (EXIM)	Shahjalal Islami Bank Ltd. (ShIBL)
First Security Islami Bank Ltd. (FSIBL)	Social Islami Bank Ltd. (SoIBL)
ICB Islami Bank Ltd. (ICB)	South East Bank Ltd. (SEBL)
IFIC Bank Ltd. (IFIC)	Standard Bank Ltd. (SBL)
Islami Bank Bangladesh Ltd. (IBBL)	Trust Bank Ltd. (TBL)
Jamuna Bank Ltd. (JBL)	United Commercial Bank Ltd. (UCB)
Mercantile Bank Ltd. (MBL)	Uttara Bank Ltd. (UBL)

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