A Study On Green Banking Practices In Banking Industry: Sri Lankan Context

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Abstract

The purpose of this investigation is to determine the multidisciplinary factors that impact on green banking practices in the banking industry in Sri Lanka. The study is carried out by establishing relevant variables to measure the economic factors, management support, customer pressure, competitor pressure, environmental concern and its extend of impact on practices of green banking. Data were collected from 300 staff of selected bank branches using a structured questionnaire to carry out the study. Five variables are considered for the research framework of this study which is namely, economic factors, competitor pressure, customer pressure, management support and environmental concerns which are used to measure the multidisciplinary factors and its impacts on green banking practices in Sri Lankan banking industry. Findings of the research show that economic factors, competitor pressure, management support and environmental concerns have high impacts while a moderate level of influence was noted for customer pressure on the adoption of green banking practices. Hypothesis testing shows a positive relationship between economic factors, management support, competitor pressure and environmental concerns while customer pressure did not show a positive relationship against green banking practices in Sri Lankan banks

Keywords: Economic Factors , Competitor Pressure, Customer Pressure, Management Support, Environmental Concerns, Green Banking

1. INTRODUCTION

Banking sectors an absolute necessity for any individual and economy of all countries and it contributes in different ways in helping the economic growth and managing money market. The banking sector is going through a vast amount of raid changes globally to cope with demanding regulatory requirements, stringent policies, technological innovations, increasing competition and globalization. However, the Sri Lankan banking sector is noted to have a slow phase-in adapting to the rapidly changing requirements and is working towards adjusting their activities to become a world-class banking sector.

As banks are serving as a financial institution while delivering its services, its focus is mainly on earning profits, and also they are being as a part of the society, they should actively incorporate to increase the financial wealth of shareholder considering minimizing wastage and caring the environment for the sustainability of the industry in the society. Therefore, the

current green banking concept is one of the main solutions to lead the financial institution success in future.

More recently most of the developed countries are moving towards green banking, hence Sri Lanka is not an exceptional country in this Asian region to initiate and adopting the novel contribution of green banking to maintain its role in society. However, The banking industry has taken advantage of technological innovations and advancements more effectively when compared to other industries from the early ages of the introduction of information communication technology.

The history of Sri Lankan banking sector taking advantage of the technologies dates back to the year around 1980 helping to improve the financial service standards of the Sri Lankan customers in a bold manner (Jayasiri, 2008). The past two decades have seen the banking sector transform into an advanced technology-oriented industry from a traditional outset. In the current context, there is a strong challenge for the banking sector to adopt to paperless technologies and serve the ever-demanding customer needs while maintaining their competitive service standards. The past decade has shown a growth in the introduction of many paperless financial products to serve the market demand.

According to Steven, (2002) paperless banking is delivering effective and efficient services to the clients with the use of telecommunication networks and electronic technology. Ovia (2001) describes electronic banking as the process of using information technology for conducting banking operations (Ovia, 2001). Paperless banking is referred to as an umbrella term to define the activity of electronically performing a transaction than a customer physically visiting a banking institution to do the same (Fincen, 2000). Paperless banking became popular during the year 1980 with the introduction of terminals such as a keyboard and a mouse to input information to the banking system using a desktop and a phone line. The terminal approach is dependent on the use of automated machines which are controlled by a user who inputs the customer's transaction information which is processed by the system to gives the desired output (David, 2002). The service environment has become more dynamic as a result of the rapidly changing technological innovation, customer awareness and demands which has made the banks to serve their customer in a more effective and efficient manner. Banks are turning their focus on technology to provide a competitive and efficient service to the customers. Electronic payment systems are clear evidence to understand the advantages of using technology to provide an efficient service compared to a conventional clearinghouse to manage payments (Kumar, 2009). Additionally, technological adaptation has resulted in the customer to receive more secure and cost-effective compared to conventional systems. Banks have invested a large amount of money to implement and promote self-banking to reduce cost, increase efficiency and provide a quality service to customers.

Green banking is a term commonly used to refer banking products and services such as phone banking, internet banking, ATM usage and electronic fund transfers. Different types of online banking solutions are offered by electronic banking services such as cheque book request, standing instruction set up, account opening, balance transfer and instructing stop payments. Online banking helps the customers to check their account balance and perform required transactions without visiting the bank thus saving the valuable effort and time. This change in customer behavior is leading towards a cash society where hard cash is no longer required for the consumers to pay for their purchases. The banking sector has a high reliance on information where information technology (IT) to process the information and give the output, but it also helps the banks to create a competitive product to serve the end customers and differentiate it from its competitors.

Banks are challenged to provide a more convenient, reliable and faster service to the demanding and valuable customers to retain them which is pushing them towards more innovation. Electronic financial products are at the forefront competing to make use of the rapidly advancing internet technology to utilize it as the core distribution channel to cater to the end customers.

Green banking is an advanced technology-based method to the Sri Lankan banking sector. Generally, banks integrate its all operations through information technology and system while minimising its traditional and delivering highly sophisticated services via technology-based application to their customers to achieve their competitive advantages in the industry. Green banking is a key strategy adopted by banks to position its brand in the market. This strategy helps the banks to enjoy cost-effectiveness while positively contributing to the sustainability of the environment.

It should be noted that only a few types of research have been carried out in the past involving a developing country such as Sri Lanka in relation to the adoption of green banking practices. This research is specifically focused on the factors influencing green banking adoption in the context of Sri Lankan commercial banks. Hence, this research will be useful for various stakeholders to understand the factor impacting green banking practices adoption and drive it in a more effective manner.

2. LITERATURE REVIEW

Green banking does not have a clearly established specific definition. However, it can be described as the means of reducing the carbon footprint arising from banking activities and promoting environmentally friendly practices (Schultz, 2010). Green banking has many differences compared to traditional banking practices. In green banking approach, the banks give due consideration to the environmental factors with the aim of providing good environmental and business practice. When lending loans, the banks will check for the environmental implications of the project, its long term impacts and safety standards prior to granting the loan (Ray, 2008). Therefore, there are important factors which are vital for implementing green banking concepts such as economic factors, management support, competitive pressure, customer pressure and environmental concern etc.

2.1 Economic Factors
The economic factor is mainly considered as a variable for image improvement and profitability. Measurement components of economic factor are profit, revenue, quality, output, brand image and increasing the firm's return on investment.

2.2 Management Support
Management support is referred to as the commitment, participation, passion and motivation provided by the management to lead the organisation success and also implementing new practices and concept such as green banking to compete for the challenging business. Top management support is one of the key success factors for an organization to adopt green banking practices. When top-level managers understand the importance and relevance of implementing green banking services, they will support to influence the key stakeholder to commit to fund the technology and make the required resources available (Ifinedo, 2011).

2.3 Competitor Pressure
External pressure perceived from the competitors can influence a firm to innovate with the use of technology to maintain its competitiveness in the market and adjust its strategy to meet the demanding situation (Grant, 2003). This change and demand can be very significant when the competitor pressure is strong and the market condition is uncertain with regard to competitor activities(Morteza et al., 2011).

2.4 Customer Pressure

According to scholars, the attraction towards the adoption of IT is due to the pressure arising from customers, demand for efficient service and the influence of internal and external environmental factors (Pavlou & Sawy 2011). According to Nazerian et al., (2011), one of the key determinants of green banking is delivering a high standard of customer service.

2.5 Environmental Concern

Environmental concern is defined by Dunlap and Van Liere (1978) as the attitude concern with the global environment of understanding the indirect effects on behavior through indirect intentions. An individual's concern towards the environment is fundamental to the environmental researches (Hines et al., 1987). Crosby et al. (1981) define environmental concern as a strong attitude towards preserving the environment for the benefit of current and future generations.

2.6 Problem Statement

Many issues can be identified with reference to the concept of green banking. Organization promoting green products and services need to ensure they duly adhere to the rules and regulation enforced to protect and preserve the environment and make ensure the consumers are not guided in the right manner to the benefit of the environment.

Various studies concluded for the context of Sri Lanka suggest that the county is still at the preliminary stages of adopting to green banking initiatives. Most of the bank are using green banking products to differentiate their brand against their rivals and show the consumers of their adaptation of technology. Banks should increase their focus towards educating employees and consumers about the benefits of using green banking while enforcing environment-friendly policies and guidelines in their operations(Fernando & Fernando, 2017). Banks have a critical social responsibility to support the efforts taken by the government to reduce carbon footprint. Green banking helps the banks to align with this objective and contribute towards creating sustainable development in the country.

Increased focus on environmentally friendly practices has raised the popularity of green banking products on a global scale. In the current context, many banks are promising to deliver ethical environmental practices with the aim to reduce carbon emission. However, the demand to deliver diversifies products and service have also lead the employees to spend more time on their information system thus resulting in increased electricity usage and ultimately releasing more carbon dioxide to the environment. Introduction of the cash-free banking system is a key advantage to the employees, consumers, corporates and economy as a whole which bring in a lot of conveniences. This helps to reduce the transaction cost, easier deposit and withdrawal, execute trades and overall contribute for an eco-friendly approach through green banking practices. This has resulted in reduced workload for the banking staff and increased the efficiency for the organization.

Sri Lanka being a developing country requires improvement in its infrastructure facilities and technology education. It is a general fact that there is a lack of cooperation from the banking personnel which ultimately affects introducing green banking practices to a wider population. Hence, the government should take adequate measures to enforce the usage of green banking practices across the various sectors and establish parameters that are environmentally sensitive to assess and implement any new projects and initiatives and promote green practices,

The above facts and analysis reveal that there is less amount of researches been conducted under Sri Lankan context for green banking practices adoption. Hence, this study stands more relevant under the current environment to understand the various factors gain understanding.

This research will be beneficial to the banking sector leaders to understand the critical factors and implement green banking practices.

Every individual in the world has the responsibility to protect the environment irrespective of their background and nationality. Similarly, the bank also has a core responsibility toward the protection of the environment and green banking practised play an important part in how the banks can contribute towards this common objective (Mani, 2011). Growing focus and importance of green banking concept is Sri Lanka can also lead to a place where the market power can be decided based on how far the commercial banks are contributing towards green banking.
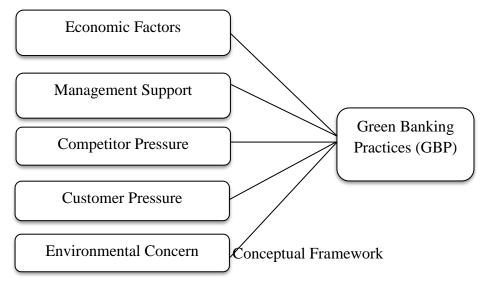
Literature reviews performed in the context of green banking shows that many scholars have conducted studies on a different aspect of green banking(Bahl, 2012). However, very few studies have been conducted at the national level and there is no evidence of an instrument being developed to measure factors influencing green banking practices (Fernando & Fernando, 2017; Silva & Dananjaya, 2016).

Facts discussed above proves that green banking is a critical factor to determine the sustainability index of a bank and gaps can be noted in the studies conducted during the past. This study is conducted as exploratory research to analyze the factors influencing the green banking practices adoption in Sri Lankan commercial banks. The objective of this study is to identify the and explore as to what extend multidisciplinary factors such as economy, management support, competitors pressure, customer pressure, and environmental impacts on the practices of green banking in Sri Lankan banking industry.

3. RESEARCH METHODOLOGY
3.1 Conceptual Model Formulation and Hypotheses Development
Variables considered for the study such as economic factors, management support, competition pressure, customer pressure and environmental concerns are classified as independent variables. Practices of green banking practices is considered as the independent variable and these classifications are also supported by various literature.

Conceptual Framework

Illustrated model is derived from various researches where the economic factors, management support, competitor pressure and customer pressure are derived from Ahmad et

al., (2013) and green banking adoption and the environmental concern is derived from(Kim & Choi,2005).

H1: Economic factors positively impact green banking practices.
H2: Management support positively impacts green banking practices.
H3: Competitor pressure positively impacts green banking practices.
H4: Customer pressure positively impacts green banking practices.
H5: Environmental concern positively impacts green banking practices.

3.2 Population, Sampling and Data Collection

The sample population is referred to a group of people, things and event which a researcher wishes to investigate and make reference to (Sekeran & Bougie, 2013). Sri Lankan commercial bank employees are considered as the study population of this research.

Sri Lanka has more than 25 commercial banks registered and operating in Sri Lanka. The total population in scope of this research is 43,320 banking employees spanning across the various commercial banks. However, this study is aimed at 300 employees to conduct the analysis using a convenient sampling method. This approach can also be related to many previously banking-related types of research where a sample of 300 employees was selected to conduct successful research. Additionally, collecting responses from the entire employee population is not feasible due to the high complexity and availability of staff under their busy work schedule and responsibilities. Hence, this research is aimed at 300 sample employees from commercial banks to conduct the study.

This study has used the closed-ended question to collect data which are considered as a more efficient and reliable way to collecting data when compared to open-ended questions. Further, typical questionnaires tend to have a structured manner for collecting answers from respondents. This research has used Likert's five scale rating to capture the response from the sample population.

The questionnaire has two main sections to capture the respondent's information and answers to the questions. The first section is focused to capture the respondent's demographic information such as the bank they work for, their designation, gender, age, educational qualification and experience level. The second section has specific questions designed to capture the employee's response to the influence of different factors on green banking adoption. Here the questions are again divided into separate sections to capture response concerning the various factors considered in the study. Each of these key influencing factors has five questions dedicated to them.

4. DATA ANALYSIS

4.1 Descriptive Statistics for Demographic Factors

For the purpose of the research 300 employees from twelve of the Sri Lanka commercial banks were selected to collect their responses. These twelve banks include ten private sector banks and two state banks. Breakdown of the sample population is illustrated in the below table 1.

Table 1: Banks and Number of Sample

Sector	Name of Bank	No of Samples
State Banks	A	53
	B	59
Private Banks	C	35
	D	30
	E	28

	F	22
	G	15
	H	20
	I	11
	J	10
	K	10
	L	7
Total		300

The distribution pattern of the questionnaire took from 242 state banks and 58 private banks. Moreover, Analysis of the gender distribution of the sample population shows that 61.70% of the respondents are males and 38.30% of the respondents are females. The pattern of the age distribution within the sample population shows that 25.30% pf the employees are below age 25, 45.30% are between 26 to 30 years, 27.30% of the employees are 31 to 40 years and the remaining 7% of the employees are above 40 years old. This data shows that the majority of the employees are at young and the percentage of employees below 25 shows the number of new entrants to the banking sector.

Five distinct categories were listed to identify the respondents' educational qualifications. 42.00% of the employees had respondents had indicated having GCE Advanced Level qualification. 23.00% of the employees had a degree qualification, 19.00% of the employees were Certificate in Banking and Finance (CBF) qualified, 13.00% of the respondents had Diploma in Banking and Finance (DBF) and the remaining 3.00% of the respondents had a postgraduate qualification.

Working experience level distribution of the respondents shows that 39.70% of them had work experience less than 4 years, 31.70% of the respondents had 5 to 8 years of experience, 16.70% of the respondents had 9 to 12 years of experience and the remaining 12.00% of the respondents had more than 12 years of experience.

4.2 Principal Component Analysis

Univariate analysis is one of the simplest forms of statistical analysis which is appropriate to analyses a single variable and explore its qualities. The sample population will be analyzed using central theorem taking account of the median value of the variables considered in this analysis for evaluating the level of influencing factors and green banking adoption. Measurement scale ranging from 1 to 5 is given based on the importance of the responses. Univariate value is calculated for reach variable in question and the mean value will be compared against it.

Table 2: Median value of the factors

Factors	Median value	Influence level
Economic factors	4.20	High-level influence
Management support	4.20	High-level influence
Competitor pressure	3.80	High-level influence
Customer pressure	3.40	Moderate level influence
Environmental concern	4.67	High-level influence

4.3 Correlations Analysis

Statistical analysis uses correlational analysis to measure the relationship strength of two quantitative variables. A high correlation between two variables means the relationship between them are strong and a weak correlation means the relationship between them is

weak. The magnitude and direction between two variables can be measured using correlational analysis (Gupta, 1971; Field, 2000). The degree of association between two variables can be measured by the correlation coefficient generally denoted by "r".Purpose of this study is to understand the significance and influence of the five variables against green banking which can be facilitated using the correlational analysis method.

Table 3: Correlation Table

Factors	Correlation with the intention to adoption of green Banking	Level of correlation
Economic factors	0.591	Strong positive correlations
Management support	0.665	Strong positive correlations
Competitor pressure	0.498	Strong positive correlations
Customer pressure	0.241	Weak positive correlations
Environmental concern	0.654	Strong positive correlations

4.4 Regression Analysis

Nature of the relationship between the two variables can be understood using the analysis. Linear regression is used to explain the different patterns of variation between the dependent and independent variables.

Table 4: ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	94.643	5	18.929	84.743	.000[b]
	Residual	65.669	294	.223		
	Total	160.311	299			

Dependent Variable: GBA

Predictors: (Constant), ENV, CUS, COM, MGT, ECO

Here the $P(F) < 0.05$ that is (0.000) which shows that the dependent and independent variables have a significant strong positive relationship.

Table 5: Coefficient Table

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.449	.207		2.166	.031		
	ECO	.171	.059	.150	2.919	.004	.531	1.884
	MGT	.305	.045	.344	6.748	.000	.537	1.863
	COM	.191	.053	.167	3.602	.000	.646	1.548
	CUS	-.062	.038	-.069	-1.633	.104	.780	1.282
	ENV	.296	.046	.316	6.455	.000	.580	1.724

Dependent Variable: Mean_AOG

According to the analysis, economic factors, management support, competitor's pressure and environmental concern show a positive and significant relationship against green banking practices adoption with 95.00% confidence level. However, customer's pressure shows a negative and significant relationship against the green banking practices adoption. Analysis of the beta value shows that management support and environmental concern are the significant and highest influential factors on the green banking practices adoption. Hence, the two variables should be given additional consideration for the green banking practices implementation. Following equation can be used to explain the same.

As per the study, the independent variable is denoted by (x) and the dependent variable is denoted by (Y)

Adoption of Green Banking =0.449 + 0.171 x (Economic Factors) + 0.305 x (Management support) + 0.191 x (Competitor Pressure) + 0.296 x (Environmental concern).

Table 6: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.768	.590	.583	.47261

Predictors: (Constant), ENV, CUS, COM, MGT, ECO

Adjusted R square value in the analysis explains that the selected independent variables contribute for 58.00% of green banking practices adoption and 42.00% of the changes are explained by other variables.

4.5 Hypothesis Test

Hypothesis testing is a critical component of the decision-making process and it is a statement used to measure one or more variables. It is a strategy used to understand if the sample data is sufficient and relevant to support the hypothesis and come to a generalized decision. Hence, hypothesis testing helps to make a probability statement about the population parameter. Subject research aims to test three hypothesis using regression and correlation.

1.4: Hypothesis Test Table

Table 7: Hypothesis Test Table

Hypothesis	P value	α value	Alternative Hypothesis
H1: Economic factors to green banking adoption	0.000	0.05	Supported
H2: Management commitment to green banking adoption	0.000	0.05	Supported
H3: Competitor Pressure to green banking adoption	0.000	0.05	Supported
H4: Customer pressure to green banking adoption	0.104	0.05	Not Supported
H5: Environmental concern to green banking adoption	0.000	0.05	Supported

According to the hypothesis test, a positive relationship is derived between management support, competitor pressure and environmental concern and green banking adoption. However, in relation to customer pressure, the null hypothesis is accepted that means there is no positive relationship between customer's pressure and green banking practices adoption.

5. DISCUSSION

The outcome of this research falls in line with the finding observes by Ahmed, Zeyed and Harun (2013). Which confirms that there is a positive impact between economic factors and green banking practices.

Analysis from the study shows a mean value 4.07 for management support influencing adoption of green banking practices with a standard deviation value of 0.826. This value falls between the range $3.5 < Xi \leq 5.0$ which shows that management support has positive impacts on green banking practices adoption in Sri Lanka. Correlation between management support and green banking adoption is 0.665 which falls between the range r=0.5 to 1.0 proving a strong correlation between the two variables. Finding from this research are in alignment with the results of Ifinedo (2011) which shows that the understanding of technology and new service from the top-level managers of an organization have a high influence on the bottom level employees to accept the change and commit the resources in line with the research finding from (Fayez et al., 2013). Based on the findings the alternate hypothesis for management support can be accepted. Therefore, it can be established that a positive relationship exists between management support and green banking practices adoption in Sri Lanka.

Finding from the study shows 3.85 mean value and 0.640 standard deviations for competitor's pressure impact green banking practices in Sri Lanka. Mean value is falling between the range of $3.5 < Xi \leq 5.0$, which shows that competitor's pressure has a high level of influence on the green banking practices adoption in Sri Lanka. The analysis also shows a correlation value of 0.498 between competitor's pressure and green banking practices. This value falls between the range r= 0.5 to 1.0. Hence, it can be established that the competitor's pressure and green banking practices have a strong positive correlation. The alternate hypothesis for the competitor's pressure can be accepted based on the analysis. Therefore, it can be said that there is a positive relationship between competitor's pressure and practices of green banking. These findings are in line with the findings derived by Grant (2003) and Morteza et al., (2011) which concluded that competitor pressure leads the firm to adapt their strategies to suit the challenging demand.

The mean value derived from the analysis for customer's pressure influencing green banking practices is 3.45 with 0.817 standard deviations. This mean value falls between the range $2.5 < Xi \leq 3.5$ and can be said that there is a moderate level of influence from customer's pressure on green banking practices in Sri Lanka. Correlation value between customer's pressure and green banking practices is 0.241 which falls between the range r= 0.1 to 0.29. Hence, it can be established that a weak positive correlation between customer's pressure and green banking practices exists in Sri Lanka. In relation to the hypothesis, it can be confirmed null hypothesis where there is no positive relationship between customer's pressure and green banking practices. This finding is in contradiction against the findings of Jayasinghe et al., (2011) and Uchida et al., 2007) who established that customer's pressure is a key influencing factor for green banking practices.

The mean value derived from the analysis for environmental concern influencing green banking practices is 4.36 with 0.783 standard deviations. This mean value falls between the range of $3.5 < Xi \leq 5.0$ and can be established that environmental concern has a high level of influence on green banking practices in Sri Lanka. Correlation value between environmental concern and green banking adoption is 0.654 which falls between the range r = 0.5 to 1.0. Hence, it can be established that environmental concern and green banking practices in Sri

Lanka have a strong positive correlation. In relation to the hypothesis, it can be accepted that environmental concern has no positive relationship against green banking practices.

5.1 Conclusion

According to the bivariate analysis, variables such as economic factors, management support, competitor's pressure and environmental concern shows a strong positive relationship while customer's pressure shows a weak positive relationship against green banking practices.

According to the various analysis conducted, it can be established that the five selected factors have a relationship with green baking practices in Sri Lanka. It is becoming an important norm for commercial banks to adopt green banking practices and policies as it has strong relevance to the sustainability of the firm in the long term from a legal and shareholder perspective. Importance of green banking is growing across the banking sector and regulators are coming up with new policies which are also forcing the banks to adapt to the trend and avoid any financial penalties. The green banking practices not only contributes to a sustainable environment it also helps to build a strong brand image and attract environmentally conscious customers.

5.2 Recommendation

Many valuable outputs can be derived from the study which can be used to benefit green banking practices in Sri Lankan commercial banks. Following recommendation are listed based on the various facts established from the study which can help to promote and increase the implementation of green banking practices.

- Being the sole regulator of the banking sector, the Central Bank should play a key role in promoting green banking practices and educating the stakeholders of the long term benefit by enforcing policies that will drive the banks towards green banking practices.
- Innovative green products and services should be introduced by all banks to attract customers who are environmentally conscious.
- Senior managers should work towards introducing solar panels, paperless banking and energy-efficient machines in their branch networks to establish green banking branches.
- Introduce rewards program for customers who adopt green products to promote them and reduce the unnecessary cost spent on paper works.
- Provide loan and lending support for projects aligned to environmentally friendly initiatives to promote and support them.
- Educate employees on the green banking products and its benefit so that the same can be communicated with end customers.
- Banks should give preference to environmentally friendly investments and avoid supporting a harmful project which ultimately could tarnish the brand image and impacts the environment.

5.3 Limitations of This Study and Future Research

This research can be used as a foundation and guidance for future researches and hypothesis development related to green banking adoption. Future researches on this area an take into consideration of other variables such as the size of the bank, regulatory pressure and income levels. Furthermore, the sample population can be further extended to cover more banks and

employees as per the scope of the research which will help to gather a more diverse view of the present situation and context.

Green banking as concept and practice is relatively new to Sri Lanka and variables such as regulatory pressure and attitudes were not considered for this research as there haven't been many involvements of these variables in the current environment. Hence, future researches can focus on these areas where the industry-wide developments can be analyzed in detail. Additionally, adoption intention between customers and employees can also be further analyzed in future research to understand how each factor impact on the green banking implementation.

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