Impact of Green Technology Initiatives on Customer Brand Engagement and Brand Loyalty in the Sri Lankan Banking Sector

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Abstract

The purpose of the study is to evaluate the relationships between Green Technology Initiatives (GTI), Customer Brand Engagement (CBE), and Brand Loyalty (BL) in the Sri Lankan banking sector. The population of the study was bank customers and bank employees in Colombo District, Sri Lanka. The data was gathered from a large representative sample of banking customers, managerial and executive-level employees at branch levels of six commercial banks by administering a survey questionnaire. The analysis of the data used both descriptive and inferential statistical analyses/tools. The findings of the research indicate that Green Technology Initiatives and Customer Brand Engagement have a positive relationship with Brand Loyalty and Customer Brand Engagement has a full mediation impact by Green Technology Initiatives over Brand Loyalty. Indeed, the findings of the study are aimed to support the investment in future green technology practices within the banking sector in Sri Lanka.

Keywords:

Green Technology Initiatives, Brand Engagement, Brand Loyalty, Banking Industry

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INTRODUCTION

The concept of 'sustainability' has received the attention of all the industries in the world including the banking industry. As an emerging economy, the Sri Lankan industry is facing many challenges on its way to sustainable development, such as; sustainable economic growth, environmental degradation, climate change, resource scarcity, and etc. The country with its rich and diverse greenery and being an island nation, has a higher responsibility to protect their heritage to the next generation. Consequently, the financiers and lenders also should have to consider this non-financial issue that will in due course affect the business (Mirror Business, 2015).

Green banking is one of the emerging concepts which urged environmental sustainability in the banking and finance industry across the globe during the last couple of years (Berkhout, 2011; Dill, 2016). The paradigm shifts in the banking sector by introducing online banking services rather than branch-based banking, online bank account opening and transaction facilities, cash deposit machinery and automated teller machines are seen as technological revolutions evolved in the banking sector to respond towards the aforementioned desire of the businesses to pursue green marketing initiatives under the green banking concept. Paperless and information technology-oriented banking services reduce the carbon footprint contribution of the banking sector (De Silva, 2015) and increase efficiency and effectiveness (World Finance, 2017) while promoting the banks' role as a responsible corporate citizen towards achieving sustainable development.

The monopolistic competitive nature of the Sri Lankan banking industry has created non-price competitive strategies to get a competitive advantage over the last decade. Consequently, the green banking concept has created a novel technology-oriented strategic initiative for Sri Lankan banks to achieve their profit motives. Conversely, Green Technology Initiatives can be used as a brand position factor in the Sri Lankan banking industry (Fernando and Fernando, 2017). Hence, it is evident that green banking initiatives are the determinants of market power and competitive positioning in the Sri Lankan commercial banking sector (Mani, 2011). As a result, each commercial bank can account for its unique brand identity (Fernando and Fernando, 2017).

The relationship between the customer and the brand can be identified as customer-brand engagement (Hollebeek, 2011). Contemporarily brand

engagement identifies the long-term value created for customers whilst focusing on brand loyalty as the core principle to satisfy customer expectations and generating mutual benefits for both organization and customer through the relationship (Andrine and Solem, 2016). In particular, brand engagement has been perceived as the core principle in generating customer loyalty through satisfying customer expectations to generate mutual benefits to both organizations and customers. Additionally, customers' behavioural brand-related activity may be expressed through a customer's level of energy utilized in interacting with a focal brand (Brodie et al., 2013).

However, introducing green technology initiatives to the service sector is somewhat challenging. Visibility of perceived elements such as eco-labelling and recyclable packaging, etc. significantly influence the purchase decision of consumers especially in the manufacturing industry (Grant, 2007). Intangibility or invisibility of services with green initiatives creates less awareness among the consumers. Besides, the green initiatives may demand technological surveillance of the consumers to use the service. As a result, customer's lack of understanding and fear on how to use a cash depositary machine may result in them moving away from these technological initiatives and following conventional banking methods creating difficulties in adapting them into these new technologies (Grant, 2007; Hall, 2006). Hence, it is evident that though the banking sector is trying to position its brands to gain a competitive advantage through Green Technology Initiatives, it is challenging to convince customers. Therefore, it is vital to study whether the GTI contribute to Brand Loyalty (BL) through Customer Brand Engagement (CBE) in the Sri Lankan banking sector.

The objectives of the study are first, to examine the relationship between GTI and BL towards commercial banks; secondly, to explain the relationship between GTI and CBE towards commercial banks; thirdly, to identify the impact of CBE on BL, and finally, to explain the role of CBE on the relationship between GTI and BL in the commercial banks. The scope of the study is limited to GTI, CBE, and BL, in commercial banks which are based in the Colombo District of Sri Lanka. The remains of the paper are organized as follows. Firstly, it discusses the literature leading to hypothesis development and conceptual model, secondly, it presents the research methods adopted in the study, and thirdly it discusses the findings and discussions. Finally, it presents conclusions, implications, and areas for future research.

LITERATURE REVIEW

The literature review helps to identify the relationships between Green Technology Initiatives (GTI), Brand Loyalty (BL), and Customer Brand Engagement (CBE) and the key constructs of the study. It further relates the strategic importance of these constructs to the banking industry.

Green Technology Initiatives (GTI)

GTI promotes environmentally friendly practices with the help of technological innovations to protect the environment. In particular, GTI is expected to generate energy reservation and ensure the sustainability of resources for future generations (Grant, 2007). Technological innovation in banking can help banks to reduce their negative environmental impact by reducing carbon footprint from banking activities (Shaumya, and Arulrajah, 2016). Subsequently, GTI suggests the desire of the banking institutions to use all the resources with greater responsibility and care to ensure the availability of those resources for future generations as well. Similarly, GTI has been recognized as an initiative that gives priority towards sustainability through avoiding or minimizing wastage.

However, the underlying desire of banking institutions to promote green banking practices is to promote higher returns to the banking institute by improving quality and quantity of overall life by demonstrating adherence to the highest standards of environmental practices. Indeed, these initiatives are expected to generate higher consumer attraction and thereby a competitive advantage. This is because; consumers are increasingly attracted to products and services offered by adhering to the highest commitment of green initiatives. Further, GTI is expected to reduce energy consumption thereby allowing banking institutions to manage their own expenses spent on energy consumption to improve the overall bottom line of the company (Garg, 2015). According to Shaumya and Arulrajah (2016), GTI measures are employee-related, daily operations related, customer-related, and bank's policy-related initiatives.

Customer Brand Engagement (CBE)

CBE is ascertained as a core phenomenon within modern marketing practices. Indeed, CBE is considered to be the yardstick in deriving the ultimate customer loyalty and brand loyalty. Subsequently, in gaining CBE the

importance of customer involvement, rapport, commitment, and satisfaction has been emphasized (Hollebeek, 2011). CBE is 'the level of an individual customer's motivational, brand-related and context-dependent state of mind characterized by specific levels of cognitive, emotional and behavioural activity in direct brand interactions' (France et al., 2016). Therefore, the philosophy of CBE has underlying assumptions based on psychology, sociology, and organizational behaviour principles (Brodie et al., 2011). Accordingly, the principles of marketing believe CBE as a physiological engagement to generate brand loyalty through provisioning customer satisfaction by influencing customer behaviour (France et al., 2016).

As a result, organizations are increasingly investing in initiatives that may support the improvement of CBE and thereby customer loyalty. In fact, in achieving the desired state of CBE it is noticeable that existing customer portfolio may have a certain level of brand loyalty towards the bank that they are dealing whilst the new customers are required to engage first with the bank to develop the subsequent brand engagement and loyalty towards the banking service. Therefore, the role of brand engagement due to the service providers' commitment creates implications for the existing customer portfolio as well as for the new customers that are expected to be acquired (Abosag et al., 2016). Customer satisfaction is considered as a fundamental capability of a service provider such as a bank where the definition of business objectives must commence with the identification of factors driving towards customer satisfaction. Indeed, satisfied customers are expected to create positive brand influence and thereby higher brand commitment to embed brand engagement (Choi and Mattila, 2004, Abosag et al., 2016).

Brand Loyalty

A brand is a promise of attributes that someone buys (De Chernatony and Segal-Horn, 2003). Keller (2008) emphasizes the basic prerequisite of a successful brand is designing and delivering a product or service that fully satisfies customer's needs and hopefully surpasses their expectations. As a result of recent economic change, in financial markets, it has become important for financial service institutions, including banks, to develop strong brands to not only survive but also thrive in such a challenging situation. Many issues are faced in the branding of financial services. For example, de Chernatony and Cottam (2006) assert that financial service providers have traditionally placed little importance on their brands. Previously, Devlin (1998) had arrived at the

same conclusion, stating that achieving true brand equity in the financial services market may prove quite difficult. Moreover, because of the intangibility of bank services and a lack of product differentiation between competing bank brands, branding is uniquely challenging for banks.

The financial industry has been greatly affected by the globalization of the market, which has provided an opportunity for new entrants to the market, both national and international, in which technological improvements have affected consumer behaviour (Raich and Crepaz, 2009). These changes have provided opportunities and necessities to keep up with the competition, in the field of branding financial services. Financial services, including banks, now aim for higher profitability through improving service quality, introducing innovative products to the customer through modern technologies and information communication technology. Recently banks have started moving from conventional branch-based methods to fully web-based user-friendly sustainable methods. It mainly focuses on developing life-long customer relationships through new banking products amongst existing customers and acquiring new relationships and engaging in long-term loyal customer relationships.

Hypothesis Development

GTI helps organizations provide user-friendly customer services while ensuring sustainability which leads to long-term loyalty towards the services offered by the banking institution (Wang et al., 2004). Meantime, BL has been considered a fundamental necessity for financial institutions, including banking institution's sustainability within the technologically driven business landscape. Similarly, De Silva (2015) articulates that GTI has a positive relationship towards gaining BL, and hence, GTI is considered as a yardstick in deriving BL towards the adopted green banking practices. Many scholars provide evidence of a positive relationship between GTLs and BL amongst customers in the financial sector (Athuja, 2015; Vivek et al., 2012). Therefore, the first hypothesis of the study is,

H1: GTIs have a significant positive relationship with BL in the banking industry.

Improved technology-related GTIs can encourage customers to utilize online banking facilities such as e-banking statements (De Silva, 2015). This process will help to increase customer satisfaction about the institutional services. Hence, GTI should employ emotional and behavioural activities to engage with the customer, giving rise to the end outcome of CBE. However, it is noteworthy that some researchers question the validity of GTI in deriving CBE (Trainor et al., 2014). Subsequently, GTIs within the banking sector enable organizations to formulate strategies focusing on CBEs that would in return derive the long run customer brand loyalty (Turel and Surenko, 2006). Similarly, Garg (2015), Hollebeek (2011) found that GTI has a positive association with CBE. Therefore, the second hypothesis of the study is,

H2: GTIs have a significant positive relationship with CBE in the banking industry.

The evidence from marketing and organizational based literature suggests that CBE has a positive influence in gaining BL. CBE has been used as a yardstick in driving BL. This is because; empirical evidence suggests that engaged customers feel emotionally connected and invested towards the products and services offered by an organization which will in return drive the BL towards the products and services offered (Goworek et al., 2016). Accordingly, CBE has been considered as a necessity in driving financial, return on investment, profitability, market share, and nonfinancial returns, and customer retention, in the organization (Goworek et al., 2016). Therefore, the third hypothesis of the study is,

*H3:* CBE has a significant positive relationship with BL in the banking industry.

There is an argument that the relationship between green practices and brand loyalty is mediated by CBE. Scholars argue that customer engagement plays an intermediate role in the BL development process, and hence it is a key component in service brand loyalty development (Sparks et al, 2016). Further, empirical evidence suggests that GTI has a positive association with CBE (Garg, 2015; Hollebeek, 2011). Besides, it is recognized that GTI positively influences BL the customers of the bank. Further, CBE positively influences BL of banking customers. Subsequently, GTI within the banking sector enables organizations to formulate strategies focusing on CBE that would in return derive the long run BL (Turel and Surenko, 2006). Furthermore, the results generated from the regression analysis-based studies have revealed the

existence of a strong positive relationship between green technology initiatives and CBE which ultimately derives customer brand loyalty (Tung, 2004; De Silva, 2015). Therefore, the fourth hypothesis of the study is,

H4: Customer brand engagement positively mediates the relationship between GTIs and BL.

Conceptual Model

The conceptual framework of the study based on the literature review is shown in Figure 1. GTIs have been identified as the independent variable of this study whereas BL is the dependent variable. Further, CBE is the mediator variable of the study (McKoll-Kennedy and Sparks, 2003; Malliga and Revathy, 2016).
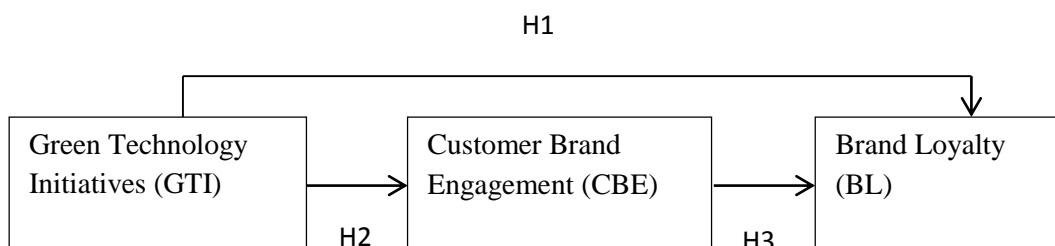
Figure 1: Conceptual Framework of the study
Source: Developed through the literature review

RESEARCH METHODOLOGY

The methods of the study were based on the positivistic research tradition as per the nature of the research objectives and priority-based conceptual model (Dewasiri et al., 2018). Thus, the following methods were adopted to empirically test the conceptual model.

Operationalization

The study operationalized the constructs and variables using the measures in the extant literature. GTI construct consisted of four variables namely, employee-related initiatives with four indicators (Abosag et al., 2006; Brodie et al., 2013), operation related initiatives with four indicators (Carbonell et al., 2009; De Silva, 2015) customer-related initiatives with four indicators

(De Silva, 2015; Duncan and Morirary, 1998) and bank's policy related initiatives with four indicators (Fernando and Fernando, 2017; Garg, 2015; Grant, 2007). CBE was measured using four variables namely, the involvement of customers with four indicators (Haery et al., 2013), customer satisfaction with four indicators (Lai, 1995) rapport with four indicators (Narayandas and Rangan, 2004) and commitment with four indicators (Lai, 1995; Narayandas and Rangan, 2004). BL was constructed by attitudinal loyalty with four indicators and behavioural loyalty with four indicators (King 2010). Each variable was measured using a five-point Likert measurement scale.

Research Strategy, Population, and Sample

This study used a quantitative research approach and was designed as a survey based on banks in the Colombo District of Sri Lanka. A survey research strategy was used to collect primary data by administering a structured questionnaire. The study population was the local public and private commercial bank branches operating in the Colombo district of Sri Lanka. The sample unit was the bank branch of the six selected commercial banks. The sample elements were both the bank customers and the managerial and executive level employees of the six commercial banks which consisted of both public and private sector local commercial banks operating for more than two decades in Sri Lanka. The structured questionnaire developed consisted of two parts. The first part of the questionnaire measuring GTI was distributed among branch level managerial and executive-level employees covering branch managers, IT managers, customer relationship managers, customer relationship executives and other executives of 60 branches of the six selected commercial banks operating in the Colombo district. This part of the questionnaire was administered to five to seven of these managerial level employees at each branch, amounting to a total sample of 390. Similarly, the second part of the questionnaire measuring CBE and BL, was distributed to five to seven customers attending each of the bank branches, amounting to a total sample of 380 banking customers. The number of bank branches from each of the six banks was decided proportionately, based on the total number of branches operating in the Colombo district. Then, the selection of bank branches was based on convenience. Further, the selection of the respondents was made at convenience due to the non-availability of a sample frame consisting of the contact details of the subjects.

Data Analysis

The reliability of the measures was assessed through Cronbach's Alpha. Further, factor analysis was carried out to assess the convergence validity of the constructs. The data were analyzed through descriptive statistics and inferential statistics. The parametric assumptions including normality and linearity of the data were tested and satisfied. The hypothesis tests were carried out using multiple linear regression analysis

RESEARCH FINDINGS AND DISCUSSION

This section presents an analysis and discussion of the empirical findings of the study.

Reliability and Validity

Cronbach's Alpha test and factor analysis were conducted to test the reliability and validity of the collected data. As per the findings, all the constructs received a Cronbach's Alpha value greater than 0.6 and hence reliability of the variable was satisfied (Nunnally, 1978). Factor analysis results have shown factor loadings greater than 0.5 for all elements. Hence, the constructs were considered as valid measures (Churchill, 1979). Further, it was reasonable to assume that all variables have face validity and construct validity as they were adapted from well-established measures in the literature (Sekaran, 2006).

Descriptive Analysis

The summaries of the variables were derived through descriptive statistic outputs comprising of means and standard deviations of all variables of the three constructs as shown in Table 1.

Table 1: Descriptive Analysis

Variables	Mean	Std. Deviation
Customer Brand Engagement	4.1871	0.40513
Involvement	4.3141	0.53794
Rapport	4.0192	0.51887
Commitment	4.4615	0.53179
Satisfaction	4.0577	0.40407

Brand Loyalty	4.0649	0.43336
Attitudinal Loyalty	4.0144	0.42707
Behavioural Loyalty	4.1154	0.50375
Green Technology Initiatives	4.0664	0.44322
Employee Related	3.5641	0.81526
Daily Operation Related	4.4231	0.47625
Customer Related	4.0865	0.49726
Bank Policy Related	4.1154	0.49346

Based on the scale (1 –strongly disagree to 5- strongly agree) and the descriptive statistics, it is evident that all the variables are above the neutral point 3. Especially, the daily operation related green technology initiative has the highest mean value of GTI – 4.4 among the variables of GTI with a standard deviation of 0.47. This indicates that responses are within 4.4 ± 0.47. The Table interprets that the operations-related activities are at a satisfactory level when taking green banking services. Nevertheless, the employee-related initiatives are comparatively less among the other variables of GTI which is 3.5 with a standard deviation of 0.81. This indicates that responses are within 3.5 ± 0.81.

CBE has the highest mean value of 4.18 among the three constructs where the lowest mean value of 4.06 is scored by BL. The highest mean value among the indicators of CBE is scored by commitment, which was 4.46 with a standard deviation of 0.53. This indicates that the responses are within 4.46 ± 0.53. The lowest mean value is scored by rapport, 4.01 with a standard deviation of 0.51. Hence, the responses are within 4.01 ± 0.51. The highest mean value among the indicators of BL is scored by behavioural loyalty, 4.11 with a standard deviation of 0.50. This indicates that the responses are within 4.11 ± 0.50. The lowest mean value is scored by the attitudinal loyalty 4.01 with a standard deviation of 0.42. Hence, the responses are within 4.01 ± 0.42.

According to the above descriptive statistics, responses for all the variables are within agreed to strongly agree on the range of the Likert scale. Therefore, this asserts the existence of a relationship amongst green technology initiatives and customer brand engagement and brand loyalty among the banking sector in Sri Lanka.

Despite the above descriptive statistics which gives a general and a primary overview of the independent and dependent variables it is essential to have further analysis on them before drawing into conclusions. Hence, further analysis was carried out to establish the relationship between dependent and independent variables as follows.

Correlation Analysis

Accordingly, Pearson correlation analysis shown in Table 1 indicates all independent variables are correlated with the dependent variable at a 0.01 significant level. GTIs showed a significant positive association with Brand Loyalty (BL). As expected, the highest correlation exists between customer brand engagement and brand Loyalty (0.691) at a 0.01 significance level. Green Technology Initiatives and Brand Loyalty have shown a moderate association of 0.439 at a 0.01 significance level.

Table 2: Correlation between Dependent Variables and Independent Variables

Variable	Pearson Correlation		
	CBE	BL	GTI
CBE	1	0.691^{**}	0.509^{**}
BL		1	0.439^{**}
GTI			1

** Significant at 0.01

Test of Hypotheses

The tests of hypotheses were based on linear regression analysis. All variables were tested for their normality and linearity using histograms and scatter plots. It was found that all variables had a satisfactory level of normality and linearity, which warranted application on linear regression analysis.

Hypothesis 01: Relationship between GTI and BL

According to Table 3, the R2 of the regression model predicting the relationship between GTI and BL is 0.146. This indicates that 14.6% of the total variance of BL is explained by GTI in the banks of the sample.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.382[a]	0.146	0.129	0.40455

The Coefficients Table 4 shows Beta value as 0.382which is significant at a 0.05 level. This implies that GTI has a significant impact on BL. Therefore, hypotheses H1 is accepted. The result confirmed that higher the level of GTI in banks, higher the level of BL of the banks.

Table 4: Coefficients for GTI

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.393	0.575		4.159	0
	GTI	0.41	0.14	0.382	2.919	0.005

Hypothesis 02: Relationship between GTI and CBE

According to Table 5, the R2 of the model predicting the relationship between green technology initiatives and customer brand engagement is 0.236. It explains that GTI accounts for 23.6% of the total variance of CBE.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.485[a]	0.236	0.22	0.35774

Table 6 shows that the beta value of GTI is 0.485 and the P-value is less than 0.05. Therefore, the hypothesis of H2 is accepted. The result confirms that higher the GTI of the banks, higher the CBE of the firm.

Table 6: Coefficients for GTI

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.199	0.509		4.322	0
	GTI	0.488	0.124	0.485	3.925	0

Hypothesis 03: Relationship between CBE and BL

Table 7 shows that the model predicting the relationship between CBE and BL has a coefficient determination (R^2) of 0.477. This indicates CBE explains 47.7% of the total variance of BL of the bank.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.691[a]	0.477	0.467	0.31638

Table 8 shows that the beta coefficient of CBE is 0.691 and the P-value is less than 0.05. Therefore, hypothesis H3 is accepted. The results confirm that higher the CBE of the banks, higher the BL of the firm.

Table 8: Coefficients for CBE

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.97	0.46		2.109	0.04
	CBE	0.739	0.109	0.691	6.759	0

Hypothesis 04: Testing the Mediating Effect of CBE on the relationship between GTI and BL

The mediation effect of CBE was analyzed through hierarchal linear regression outputs as per the guidelines recommended by Baron and Keny (1986). The path analysis is reported in Table 9. According to Baron and Kenny (1986), there are a few steps to examine the mediating effects as represented bellow.

Step I (GTI >BL)

Y=B0+B1X+e

BL= 2.393+0.410 x GTI

As per Table 4 since the p-value of the unstandardized regression coefficient (b) GTI is less than 0.05, it can be summarized that there is a significant relationship existing between GTI and BL.

Step II (GTI>CBE)

Y=B0+B1X+e

CBE= 2.199 + 0.488 x GTI

As per the Table 6, the p-value of the unstandardized regression coefficient (b) of GTI on CBE is less than 0.05. Thus, there is a significant relationship existing between GTI and CBE

Step III (CBE>BL)

Y=B0+B1M+e

BL= 0.970 +0.739 x CBE

Table 8 shows that the p-value of the unstandardized regression coefficient (b) of CBE on BL is less than 0.05. Hence there is a significant relationship between the two variables.

Step IV (GTI and CBE>BL)

Table 9: Coefficients for GTI and CBE

	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	**Std. Error**	**Beta**		
	(Constant)	0.837	0.531		1.575	0.122
1	GTI	0.065	0.127	0.06	0.513	0.61
	CBE	0.708	0.126	0.662	5.617	0

It can be observed that there are significant relationships from step I through III in all regression models. However, when observing the significance of the multiple regression model in Table 9, it can be noted that the unstandardized regression coefficient (b) of CBE is significant (p-value < 0.05) whilst the unstandardized regression coefficient (b) of GTI is not significant in the same model (p-value > 0.05). Therefore, it can be concluded that CBE has a full mediation impact (Baron and Kenny, 1986) on the direct relationship between GTI and BL in the sample of banks.

DISCUSSION

In considering the findings of the current study it shows a small/weak direct impact of GTI on BL. In particular, this contradicts the findings of Kumar (2017) who identified that GTI has strong implications on graining BL. Thus, the banking institutions need to improve the subsequent value creators for customers through GTI to generate BL. Moreover, it is noteworthy that there could be a range of other factors influencing BL. Nevertheless, the findings of the current study recognized that GTI create implications on CBE. Indeed, there is a moderate and significant relationship between GTI and CBE Accordingly, this finding is supported by the research studies conducted by Grant (2007), Hall (2006), and De Silva (2015) who recognized that GTI in other industries would contribute towards gaining CBE.

Further, the current study supported the view that CBE has implications for gaining BL. Indeed, there is a strong and a significant relationship. This supports the majority of the marketing-based literature which articulates that there is a positive influence of CBE on BL. For example, the research conducted by Choi and Mattila (2004) recognized a strong positive relationship between CBE and BL in the cosmetics industry. Meanwhile, Verhoef (2003) conducted a study considering the restaurant industry and identified a moderate and a significant relationship between CBE and BL. In particular, Murphy and Rodriguez-Manzaneres (2012) researched about banking industry's CBE and subsequent BL and recognized a moderate and a significant relationship amongst CBE and BL revealing evidence to accept the findings of the current study.

Despite the inability of GTI to create a direct impact on BL within the banking industry, it is articulated that CBE can act as a full mediator in promoting BL as evidenced in the current study. For instance, this has been

supported by the studies conducted by Verhoef (2003), Choi and Mattila (2004), and Duncan and Morriarty (1998). In particular, the current study has identified a significant indirect relationship between GTI and BL, which occurs through CBE's full mediation.

CONCLUSIONS, IMPLICATIONS, AND FUTURE RESEARCH

The findings of this study present insights into the debate concerning the impact of GTI on CBE and BL in the Sri Lankan banking sector. The study found that GTI is a significant but an indirect determinant for the enhancement of BL in the banking industry in Sri Lanka. Hence, the first objective of the study is satisfied. Employee related, daily operations related, customer-related, and bank policy-related initiatives considered for this study can be significant determinants of BL. The second objective of the study is achieved through the findings, as there is a significant positive relationship between GTI and CBE. The third objective is addressed through the finding that supported CBE constructs including commitment, rapport, satisfaction, and involvement having a significant impact on BL. Finally, the findings highlighted that GTI can indirectly improve BL by enhancing CBE. Hence, the fourth objective of the study is also accomplished.

Accordingly, the implications of the current study about GTI implementation in the banking industry can be applied along with the subsequent recommendations. Despite the increased initiatives implemented towards customer-related green technology initiatives within the Sri Lankan banking sector, the employee-related green technology initiatives are limited. Therefore, the banking sector should take necessary steps in promoting the green banking related technology initiatives linked to the employees of the banking sector. Accordingly, this could be facilitated through intense training programs and workshops that might result in improved employees' satisfaction and performance as an imperative factor in services marketing.

Gaining BL and customer engagement is considered as a secondary force when considering the current study because it is important to gain customer commitment as a first step to create subsequent BL and customer engagement. Therefore, it is recommended to increase customer attraction by investing in various promotional mechanisms. In this regard, brank managers should craft innovative strategies to engage their customers more and more to use those initiatives, because CBE leads to create brand loyalty. For instance,

providing one-month free online banking facilities, increasing the service quality, assuring the trust, increasing the satisfaction, creating customer confidence, improving security provisions and so on will promote the enthusiasm amongst the customers to use the green-based services due to the convenience which will be later developed into increased customer engagement and brand loyalty.

The findings of the current study revealed 78% awareness of GTI. However, it is noteworthy that banking institutions must promote green banking initiatives amongst the balance 22% as well through investing in various promotional campaigns to ensure full implementation of GTI. For example, it is perceived that customers do not have sufficient understanding as to what is happening related to GTI in converting conventional banking practices into green banking. Therefore, banking institutions should invest in promotional activities substantially to raise customer awareness. For example, this could include mass media advertisement campaigns focusing on the benefits that could be yielded by both the customer and bank through adopting green banking initiatives. It is possible to use the internal space of the electronic transaction and bank interior as promotional areas with simple and effective displays that help customers understand that they have contributed to saving the trees by reducing the usage of slips and by using electronic banking methods. Moreover, displays can be arranged in all possible places and occasions to make customers aware of GTI that the bank has taken, such as the installation of solar panels, compliance with eco- friendly standards, green CSR projects, and etc. to assure that the bank itself complies with the green concept while asking customers to go green.

Similarly, the contribution of the potential customers realizable through customers' adopting GTI needs to be communicated. For instance, using cash depository machines or online loan applications, it is possible to communicate the customers how many trees will be saved, which in turn influences the customers to extend their support and commitment towards engagement in GTI. Moreover, the findings of the current study are subjected to limitations. GTI and its subsequent impact on CBE and BL of commercial banks were assessed only within the geographical scope of the Colombo district in Sri Lanka. Therefore, generalizing the findings to the entire Sri Lankan market as well as to foreign nations may be questionable. Indeed, it is imperative that CBE and BL may be dependent on a range of other variables as well. However, considering the common behavioural implications across the Colombo district

and elsewhere, it could be articulated that the findings could be generalized to the country and the South Asian region. This may result from the inability of the commercial banking sector to deliver improved service on GTI to enhance CBE and BL.

Similarly, the researcher is aware that the sample size and the use of convenience sampling would have distorted the findings of the study. The sample size of the study may fail to represent the overall population. Further, using convenience sampling suggests that the sample was selected based on the researcher's discretion which included an element of biasness within the study. On the other hand, brand engagement and brand loyalty towards a specific service provider may depend on a range of other variables such as value for money, quality service, the responsiveness of the staff, convenience of access, and so on. Hence, predicting the empirical effects of GTI and CBE on BL may not be appropriate and would be a limitation of the present study. As a result, this research demands further developments and investigations in the future.

The current study investigated GTI and its subsequent implications on CBE and BL only among six local banks operating in the Colombo district. Accordingly, in the future, it is recommended to extend the current study to all the banks covering foreign banks operating in Sri Lanka and financial sector institutions to generate better insights about the topic. Moreover, it is recommended to extend the study to the whole of Sri Lanka to be able to generalize the findings across the country. Further, the current research has been developed to recognize the implications within the service sector of Sri Lanka. Thus, in the future, it is recommended to develop research to evaluate the green technology and green initiatives in the manufacturing sector in Sri Lanka as well.

Similarly, it is recommended to research the Sri Lankan banking sector to evaluate the customer perception of GTIs Likewise, in the future, researches could be conducted to assess the limitations of implementing green technology initiatives from the perspective of customers as well as from the perspective of the organizations. Besides, research could be conducted to identify the perceived benefits a banking institution can realize through implementing green technology initiatives. The benefits that could be realized by the banking institution could be further extended to identify the implications of green technology initiatives on sustainable organizational growth.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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