CUSTOMER AWARENESS OF THE GREEN BANKING SERVICES OF COMMERCIAL BANKS IN KERALA

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Abstract

Go Green is the new buzzword in all walks of life, business is no exception and the importance of green banking in this context is very relevant.Green banking practices take into consideration relevant social and environmental or ecological factors with an aim to protect the environment and conserve natural resources. It is also known as Ethical banking or Sustainable banking. There is a raise in awareness on the need to preserve scarce natural resources by re-use, recycle and reduce waste through the process of implementation of technology. The customer awareness of the green banking services (GBS) offered by the commercial banks is assumed to be an important determinant of the level of its utilisation in any country or economy.

Key words:- Green Banking Services (GBS), Customer Awareness, Public & Private Banks, Ethical Banking,Commercial Banks

*G*reen Banking is a new term or concept which is like a normal or paper free banking that carries same activities like normal banking, but the motive is to safe guard the nature by practising nature friendly banking activities. Using online banking instead of branch banking, paying bills online, e-mailing statements, opening money market accounts at online banks, instead of multi-branch banks. The Indian Institute for Development and Research in Banking Technology has broadened the concept by defining "Green Banking as 'an umbrella term referring to practices and guidelines that make banks sustainable in economic, environmental, and social dimensions." This article deals with the

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analysis of the customer awareness about various green banking services of commercial banks in Kerala.

Literature Review

Banks are already adopted the e-business approach such as Internet Banking, Mobile Banking, credit card, ATM and son on in order to keep up with the competition.

Musiime & Ramadhan (2011) this study emphasis one of the technological banking services such as Internet Banking and its utilisation of the customers and also analyse their satisfaction towards it mainly in the place of Africa. The study identified that the   customers are utilising this facility frequently and also they are highly satisfied in Internet banking facility. The authors suggested that for improving the Internet Banking facility usage only by the bank should adopt proper plan of action and also introduce so many new products and features in the net banking facility. And also create maximum awareness among customers using demonstration and also involvement of businessmen, other clubs and so on.

Widjana & Rachmat (2011) in their article stated that the determinants that affect the adoption of Internet banking by the customers in Indonesia. This study concluded that the awareness level of the customers depends upon recognize its adequacy. And also bank should ensure that the any information that shared through the net banking website is in their local language; otherwise they will skip all the information. Bank also provides a redressal regarding the security issues frequently.

Research Objective

■   To understand the degree and dimensions of customer awareness of the green banking services of the commercial banks in Kerala.

Hypotheses:

• Ho_1: The degree of customer awareness of the green banking services of commercial banks in Kerala is low.

• Ho_2: The customer awareness about the green banking services of the commercial banks in Kerala not only varies across the type ownership and location of banks, but it also differs across the gender, age, educational qualification, and occupation of the customers.

Research Methodology

This study has been conducted by taking both primary and secondary data. Primary data is collected from respondents selected for the study. It comprises of customers identified from Banks selected for the study.**Sampling Technique:** The technique of sampling adopted for the study isMulti stage Random Sampling Technique. **District Selection:** Thiruvananthapuram and Alappuzha from South, Idukki and Ernakulam from Central and Kozhikode and Kannur from the North. **Branch Selection:** Of the total 1481 branches in Kerala under selected public (SBI, Canara & IOB) and private sector bank (Federal Bank, South Indian Bank & HDFC), a sample of 150 branches are selected randomly for the study. **Customer Selection:** Two customers each from each

of the identified bank branches are selected randomlyfor the study making a total of 300 respondents.**Sample Size:** The sample size for the study was determined by using Cochran's (1977) formula.

$$n = \left(\frac{t \times s}{E} \right)^2$$

Analysis and Discussions

Part I: DIMENSIONS OF CUSTOMER AWARENESS OF THE GREEN BANKING SERVICES OF COMMERCIAL BANKS IN KERALA

The awareness of the customers about the green banking services offered by the commercial banks in Kerala has been analysed by examining the responses of the bank customers towards 10 green banking service items listed in Table 1. This construct was measured by using five-point *semantic differential scale* items anchored with "not at all aware' and 'very much aware' with the associated numerical values, 0 and 4 respectively. Ten important items listed in Table 1 have been used to measure the 'customer awareness about the green banking services' construct. The scale was found reliable as per the Cronbach's alpha coefficient (á= .767).

The summary descriptive statistics of the overall customer awareness about the green banking services and its 10 components are presented in Table 1. An exploratory analysis of these 10 variableswas carried out in terms of the skewness, kurtosis, and the *Kolmogorov-Smirnov test* of normality. The results shown in the table indicated non-normality in the distribution of these variables.

Therefore, a non-parametric approach was followed for the subsequent analysis of these variables.The sample data analysis showed that the mean value of the customer awareness construct and all the 10 items reflecting it was much less than the central position in the scale (i.e., 2); but, the median value of all the 10 items were 2, even though the grand median was less than 2. A one-sample *Wilcoxon signed-rank test* was performed to test whether the population median of these variables was significantly different from 2, the value at the centre point of the scale.The test results reported in Table 1 clearly show that the population median value was significantly different from 2, therefore, it can be inferred that the customer awareness about the green banking services of commercial banks in Kerala was significantly lower than the moderate level. It lends empirical support to the first hypothesis that customer awareness about the green banking services of commercial banks in Kerala is low.

Subsequently, *post hoc* pairwise comparisons were conducted using*Wilcoxon signed-rank tests* with a *Bonferroni correction* procedure. The pairwise comparison analysis results indicated that there was a statistically significant difference in the level of customer awareness in around 51 percent of the pairs compared (i.e., 23 out of 45 pairs compared). There was no significant difference in the level of customer awareness about mobile banking, ATM, internet banking, debit cards and electronic fund transfer. The level of awareness about these popular modes of green banking services was relatively uniform

Table 1

Summary Statistics of the Dimensions of Customer Awareness about the Green Banking Services of Commercial Banks in Kerala

Sl. No.	Type of Green Banking Service	Mean	S.D.	Skewness	Kurtosis	Median	N	GBS Awareness Index (%) #	*Kolmogorov- Smirnov@* Test Results of Normality			One-Sample Wilcoxon Signed Rank Test Results*	
									Statistic	df	p	Z - Statistic	P
1	Mobile Banking	1.98	0.20	-9.90	96.63	2.00	300	49.5	.530	300	<.001	-1.732	.083
2	ATM	1.97	0.26	-7.59	55.97	2.00	300	49.2	.535	300	<.001	-2.236	.025
3	Internet Banking	1.93	0.36	-5.23	25.48	2.00	300	48.3	.540	300	<.001	-3.162	.002
4	Debit Cards	1.87	0.49	-3.60	11.06	2.00	300	46.8	.539	300	<.001	-4.359	<.001
5	Electronic Fund Transfer	1.70	0.72	-1.97	1.89	2.00	300	42.5	.513	300	<.001	-6.708	<.001
6	Cash Deposit Machine (KIOSK)	1.59	0.81	-1.48	0.20	2.00	300	39.8	.490	300	<.001	-7.810	<.001
7	Electronic Clearing System (ECS)	1.57	0.82	-1.41	-0.02	2.00	300	39.3	.485	300	<.001	-8.000	<.001
8	Credit Cards	1.54	0.84	-1.29	-0.34	2.00	300	38.5	.477	300	<.001	-8.307	<.001
9	Real-Time Gross Settlement (RTGS)	1.29	0.96	-0.62	-1.63	2.00	300	32.3	.416	300	<.001	-10.296	<.001
10	Solar ATM	1.03	1.00	-0.07	-2.01	2.00	300	25.8	.350	300	<.001	-12.042	<.001
	Overall Awareness	1.65	0.40	-1.31	1.30	1.80	300	41.2	.271	300	<.001	-12.402	<.001
	Reliability Statistics	Cronbach's alpha (α) = .767							@*Lilliefors* Significance Correction.			* Hypothesised median = 2	

Note: #This is the percentage of the weighted sum of the responses to the maximum possible value, which is 1200 (i.e., 4 x 300) in this study.

Source: Primary Survey Data

in the population. Solar ATM and RTGS were the two equally least known green banking services of the commercial banks to the customers in Kerala.

Part II: PATTERNS OF THE CUSTOMER AWARENESS ABOUT THE GREEN BANKING SERVICES OF COMMERCIAL BANKS IN KERALA

This section describes the patterns of the customer awareness of the green banking services of the commercial banks in Kerala in terms of three aspects: (i) the size-wise distribution of the customer awareness index, (ii) across the type of banks (i.e., private sector or public sector banks), and (iii) location of banks (i.e., rural or urban areas). And also describe the pattern of the awareness indicator across the gender, age, educational qualification, and occupation of the customers too.

The size-wise distribution and the chi-square test results of the goodness of fit of the GBS customer awareness index score is shown in Table 2. The analysis reveals that a large section the GBS customers in Kerala had a low to moderate awareness about the green banking services of the commercial banks in Kerala.

χ^2 (3, N=300) = 232.85, p< .001.

The descriptive statistics of the GBS customer awareness index shown in Table 3 indicate that the mean GBS customer awareness index of the customers of the public sector banks, on average, was higher than that of the private sector banks by 2.4 percentage points. However, the

Table 2

Size-wise Distribution Pattern of the GBS Customer Awareness Index

Sl. No.	GBS Customer Awareness Index (%)	Frequency	Percentage	Cumulative Percentage	Chi-square Test Results
1	0 - 20	17	5.7	5.7	
2	20 - 30	41	13.7	19.3	χ^2= 232.853
3	30 - 40	55	18.3	37.7	df = 3
4	40 - 50	187	62.3	100	p< .001
	Total	300	100		

Source: Primary Survey Data

Table 3

Relative Intensity of the GBS Customer Awareness Index oftheCustomers of Private and Public Sector Banks in Kerala

Sl. No.	Type of Bank	Mean (GBS Customer Awareness Index)	SD	Skewness	Kurtosis	Median	N	Kolmogorov-Smirnov* Test Results of Normality		
								Statistic	df	p
1	Public Sector	42.19	10.65	-1.62	2.14	45.0	180	.271	180	<.001
2	Private Sector	39.75	8.72	-0.75	-0.30	45.0	120	.285	120	<.001
	Total	41.22	9.98	-1.31	1.30	45.0	300	.271	300	<.001
	Mann-Whitney Test Statistics	*Mann-Whitney* U = 8141.500, p< .001						* Lilliefors Significance Correction		

Source: Primary Survey Data

median values were the same across these categories. The non-parametric *Mann-Whitney test* results confirmed that the GBS customer awareness index of the public sector bank customers was significantly higher aware of the GBS services than that of the private sector commercial bank customers in Kerala, $U = 8141.50$, p< .001.

Table 4 shows that the mean GBS customer awareness index of the customers of the rural branches of the commercial banks was marginally lower than that of the urban branches, but there was no such difference in the median values of the index. The *Mann-Whitney test* results indicate that the location of the bank branch did not influence customer awareness about the GBS of the commercial banks in Kerala. $U = 8027$, p< .160

The sample data analysis in Table 5 shows that the customer awareness of male respondents, in terms of mean, was marginally greater than the female respondents, however, no such difference was found in terms of the median values. Moreover, the *Mann-Whitney test* results confirmed that the results indicate that the gender of the customers did not influence customer awareness about the GBS of the commercial banks in Kerala. $U = 9974.50$, $p = .083$.

Table 4

Relative Intensity of the GBS Customer Awareness Index

Sl. No.	Location of Bank Branch	Mean (GBS Customer Awareness Index)	SD	Skewness	Kurtosis	Median	N	Kolmogorov-Smirnov* Test Results of Normality		
								Statistic	Df	p
1	Rural	39.39	11.15	-0.97	0.52	45.0	82	.217	82	<.001
2	Urban	41.90	9.44	-1.46	1.77	45.0	218	.289	218	<.001
	Total	41.22	9.98	-1.31	1.30	45.0	300	.271	300	<.001
	Mann-Whitney Test Statistics	*Mann-Whitney* U = 8027.50, *p*=.160						* Lilliefors Significance Correction		

Source: Primary Survey Data

Table 5

Relative Intensity of the GBS Customer Awareness Index of the Male and Female Customers of Commercial Banks in Kerala

Sl. No.	Gender	Mean (GBS Customer Awareness Index)	SD	Skewness	Kurtosis	Median	N	Kolmogorov-Smirnov* Test Results of Normality		
								Statistic	Df	p
1	Male	42.08	9.87	-1.57	2.31	45.0	144	.304	144	<.001
2	Female	40.42	10.05	-1.11	0.67	45.0	156	.240	156	<.001
	Total	41.22	9.98	-1.31	1.30	45.0	300	.271	300	<.001
	Mann-Whitney Test Statistics	*Mann-Whitney* U = 9971.50, *p*= .083						* Lilliefors Significance Correction		

Source: Primary Survey Data

The figures shown in Table 6 indicate that the non-parametric *Kruskal Wallis test* was used for testing whether any significant difference exists in the level of customer awareness index across the five different age groups of the customers in the population.   The test showed that there was a statistically significant difference in the GBS customer awareness index score of the commercial bank customers across different groups in the population,

χ^2 (4, N = 300) = 17.029, *p* = .002.

A *post hoc* pairwise comparison analysis was done to understand the exact nature of differences across the age groups. The results indicated that the GBS customer awareness index of customers belonging to the highest age group (i.e., 55 years and above) was significantly lower than all other age groups. At the same time, there was no significant difference in the level of awareness of the customers belonging to all other age groups up to 55 years. It suggests that the elderly customers were less aware of the green banking services of the commercial banks in Kerala.

Kruskal Wallis test showed that there was a statistically significant difference in the GBS customer awareness index score of the commercial bank customers across their educational qualifications in the population (Table 7),

χ^2 (5, N = 300) = 26.44, *p*< .001.

Table 6

Relative Intensity of the GBS Customer Awareness Index Across the Age Group of the Commercial Bank Customers in Kerala

Sl. No.	Age Group (in Years)	Mean (GBS Customer Awareness Index)	SD	Skewness	Kurtosis	Median	N	Kolmogorov-Smirnov* Test Results of Normality		
								Statistic	Df	p
1	Less than 25	42.71	8.12	-1.07	0.07	45.0	48	.278	48	<.001
2	25 - 35	42.21	8.62	-0.83	-0.70	45.0	70	.270	70	<.001
3	35 - 45	41.94	8.91	-1.39	1.56	45.0	80	.259	80	<.001
4	45 - 55	43.73	8.06	-1.77	2.51	45.0	55	.345	55	<.001
5	55 & Above	34.04	13.82	-0.55	-0.54	35.0	47	.148	47	.012
	Total	41.22	9.98	-1.31	1.30	45.0	300	.271	300	<.001
Kruskal-Wallis *H* Test Results	$\chi^2 = 17.029$, $df = 4$, $p = .002$, N = 300							*Lilliefors Significance Correction		

Source: Primary Survey Data

The *post hoc* pairwise comparison analysisindicated that the level of awareness of the customers having education up to SSLC was significantly lower than that of graduates and postgraduates, and the level of awareness of the customers with HSE/PDC education was significantly lower than that of the customers with post-graduate education. But there was no significant difference in the level of awareness of all other pairs compared. The results suggest that the awareness of the customers about the GBS of the banks were positively associated to the level of their education, where the level of awareness of the customers with higher education was significantly higher than that of the customers with lower levels of educational qualifications.

The *Kruskal Wallis test* (Table 8) showed that there was a statistically significant difference in the GBS customer awareness index score of the commercial bank customers across their occupations in the population, χ^2 (7, N = 300) = 47.10, $p < .001$. However, the post *hoc* pairwise comparison analysis revealed that the level of awareness of the customers who were the homemakers was significantly lower than that of customers with all other occupations and there was no significant difference in the level of awareness of the customers with all others types of occupation listed in the table. The results indicate that the homemakers were less exposed to different types of green banking services of the commercial banks in Kerala.

Findings

The analysis revealed that the customer awareness of the green banking services of commercial banks in Kerala was low, which provided empirical support to our first hypothesis. The level of awareness of the customers about the popular modes of GBSsuch as ATM, internet banking, debit cards and electronic fund transfer was relatively high, while the level of customer awareness about the less popular services such as solar ATM and RTGS was very less. The analysis revealed that a large section the GBS customers in Kerala had a low to moderate awareness

Table 7

Relative Intensity of the GBS Customer Awareness Index Across the Educational Qualification of the Commercial Bank Customers in Kerala

Sl. No.	Highest Educational Qualification	Mean (GBS Customer Awareness Index)	SD	Skewness	Kurtosis	Median	N	Kolmogorov-Smirnov* Test Results of Normality		
								Statistic	Df	p
1	No Formal Education	25.00	--	--	--	25.0	1	--	--	--
2	Up to SSLC	31.74	15.12	-0.64	-0.59	30.0	23	.158	23	.144
3	Higher Secondary / Pre-Degree	38.14	10.30	-0.50	-0.91	40.0	35	.204	35	.001
4	Graduate	40.91	9.77	-0.93	-0.26	45.0	116	.274	116	<.001
5	Post Graduate	44.39	6.50	-1.39	1.45	45.0	82	.306	82	<.001
6	Professional Degree	43.95	8.35	-1.90	3.75	45.0	43	.234	43	<.001
	Total	41.22	9.98	-1.31	1.30	45.0	300	.271	300	<.001
Kruskal-Wallis *H* Test Results		$\chi^2 = 26.442$, $df = 5$, $p < .001$, N = 300						*Lilliefors Significance Correction		

Source: Primary Survey Data

Table 8

Relative Intensity of the GBS Customer Awareness Index Across the Occupation of the Commercial Bank Customers in Kerala

Sl. No.	Occupation	Mean (GBS Customer Awareness Index)	SD	Skewness	Kurtosis	Median	N	Kolmogorov-Smirnov* Test Results of Normality		
								Statistic	Df	p
1	Business	45.00	7.86	-2.45	6.19	45.0	18	.389	18	<.001
2	Profession	45.22	6.30	-1.73	3.61	45.0	23	.254	23	<.001
3	Government Service	44.53	7.41	-1.60	1.87	45.0	74	.309	74	<.001
4	Industrialist	40.56	16.48	-2.25	5.41	50.0	9	.283	9	.036
5	Farmer	39.50	10.63	-0.51	-1.33	42.5	20	.198	20	.039
6	Home Maker	34.10	10.90	-0.36	-0.31	35.0	61	.104	61	.164
7	Private job	42.57	8.62	-1.67	2.36	45.0	76	.322	76	<.001
8	Others	39.47	10.66	-1.23	1.73	45.0	19	.224	19	.013
	Total	41.22	9.98	-1.31	1.30	45.0	300	.271	300	<.001
Kruskal-Wallis *H* Test Results		$\chi^2 = 47.095$, $df = 7$, $p < .001$, N = 300						*Lilliefors Significance Correction		

Source: Primary Survey Data

about the green banking services of the commercial banks in Kerala. The customers of the public sector banks were more aware of the GBS services than the private sector bank customers in Kerala, signifying the relevance of bank ownership in creating the awareness about the green banking services in Kerala. At

the same time, the location of the bank branch did not influence the level of customer awareness about the green banking services in Kerala. The level of awareness of customers of rural and urban branches of the banks was not significantly different. The analysis of the pattern of customer awareness about the GBS in terms of the socio-demographic factors revealed that the level of awareness of GBS of the male customers was not significantly different from that of the female customers, we could also understand that the level of awareness of the customers about the GBS of the banks was positively associated to the level of their education but it was inversely related to their age. The level of customer awareness of the homemakers about the GBS was significantly lower than that of customers with all other occupations.

CONCLUSIONS

This research is based on the banks located in Kerala and some of the internationally accepted green banking product and services are outside the purview of banks in Kerala. This study analyses the awareness level of the customers among various green banking services that are offered and commonly available in the commercial banks in Kerala viz ATM, Internet Banking, Mobile Banking, Debit & Credit cards, ECS, EFT, RTGS, solar ATM, Cash Deposit Machine (KIOSK).And also costumers are not aware that the as a part of green banking initiatives commercial banks are providing these type of green banking services to their customers. So Commercial Bank takes initiative to increase the awareness level of the customers in Kerala.

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