

## **Customer Loyalty Towards Paperless Banking (with Special Reference to Systemically Important Banks in Sri Lanka)**

**Kumari D.A.T**

*Department of Banking and Finance  
Wayamba University of Sri Lanka*

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### **ABSTRACT:**

*Financial institutions across the world are trying to reduce their carbon print and the same is true for commercial banks. Banks use a substantial amount of paper in day-today customer interactions, service offerings, and back-office operations (account opening, lending, payments, card statements). Going green by eliminating paper has thus become a high priority for them. Paperless banking will not only help save the environment and cut carbon footprint but also help banks reduce operational expense while elevating customer experience. This paper highlights the importance of customer loyalty towards paperless financial transactions. The commercial banks have been intending to implement paperless financial transaction techniques to their customers. But the customer has been resenting to implement due to banking infrastructure, dilution of power, fear of change acceptance and their personal interest. Therefore, a problem identification has been conducted to identify the rising problems and their justifications gives evidence to the problems that has been identified. Based on these problems and the need to implement paperless banking literature review was conducted. This had enabled to identify the independent variables as: customer loyalty, costs, security and efficiency. The research was conducted on selected customers from Systemically Important Banks (Bank of Ceylon, Commercial Bank of Ceylon, Hatton National Bank, Peoples' Bank, Sampath Bank and Seylan Bank) in Sri Lanka. Hence the data collection for analysis was based on customers in these banks. Out of those customers, for a selected population size of 100 and sample size of 80. Data was collected using a questionnaire deigned on a 5 point Likert scale format and sent to the customers' email addresses. The collected 80 questionnaires were analyzed using SPSS-24 for statistical analysis of hypothetical assumptions that was made in relation to independent variables. This had enabled to prove that there is a positive relationship between the customer loyalty and paper less transactions. These analyses were used in comparison with the findings of the literature review to create a comparison with the findings to derive at a conclusion. Recommendation have been made using these comparisons and conclusions along with suggestions for areas for future studies.*

**KEY WORD:** *Cost, Customer Loyalty, Efficiency, Paper Less Banking, Security*

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### **I. INTRODUCTION**

Financial transactions are the language of business where involvements of monetary transactions are being carried out with the interaction of buyers and sellers for the exchange of assets and monetary funds. It creates an agreement between individuals and businesses hence transactions are usually carried out in the form of cash or cheques. These are recorded and stored by the respective individuals and companies over a period (Lim, Jerome and Tan, 2016). Financial transactions are essential for any business navigation it give a clear picture of the business management of its monetary fund's, its profitability and essential part of management decision making therefore it designs the potential growth of the company and prevents companies from undergoing unexpected financial upswings.

The evolution of financial transactions began in the days of Mesopotamian days of civilization where the initial form of trade had begun with the exchange for another. These exchanges were mainly related to animals, livestock, crops and so on. Recording of transactions in those times of Mesopotamian days were carried out as per the Egyptians and Babylonians where individual accounts were maintained for each transaction with detail record of livestock, corps and other trade which is time consuming and tiresome. But these details in were essential since a transaction would take a long period of time to complete (Tschopp and Ronald, 2015). This form of trade was revolutionized over the years with the introduction of currencies with material wealth and booking system for recording of transactions.

Today financial transactions and recording plays a crucial part within businesses and individuals. It is essential for management, financial decisions making and entering into agreements with banks and other financial authorities. Government and regulatory bodies too are interested in these financial recordings for the

purpose of tax and other legal implications (Daniel, 2013). It is crucial to maintain records of complete financial transactions over the years and banks must safeguard these records for them to retrieve and review them especially in case of any legal implications.

This would also help banks and individuals to be in line with the advancement of technology and engage international business transactions as they do not have to be physically present to perform transactions (Banerjee, Johari and Zhengyuan, 2016). Commercial banks have been investigating, inventing means and ways of moving into paperless financial transactions that would enable banks to operate more effectively by increasing employee's productivity and create a social responsibility initiative within the company as well as to its customers (Kumari 2013a; 2013b). Safeguarding of information by preventing unapproved authorized personals from accessing the information. The authorized personals can store and retrieve information at any given period without incurring any costs of storage (Eric, 2017).

Due to the evolution and competitiveness banks cannot undergo or maintain heavy expenses for the long-term survival therefore it is essential for commercial banks to eliminate avoidable expenses and implement paperless financial transactions techniques. This would assist the bank to reduce its costs and enable the banks to be in line with the advancement in technology.

## **1.2. Banking Sector in Sri Lanka**

The banking sector in Sri Lanka, which comprises Licensed Commercial Banks (LCBs) and Licenced Specialised banks (LSBs), dominates the financial system and accounts for the highest share of the total assets in the financial system. Banks play a critical role within the Sri Lankan financial system, as they are engaged in the provision of liquidity to the entire economy, while transforming the risk characteristics of assets. Banks also engaged in offering payment services, thereby facilitating all entities to pack away their financial transactions. On the other hand, banks can create systemic vulnerabilities, in part as a result of a shift in the maturity of assets and liabilities and their interconnection. Thus, the soundness of banks is important, as it contributes towards maintaining confidence in the financial system, and any failure may cause the potential to impact on bodily functions of all other financial and non-financial entities, and ultimately the economy.

With regard to the asset base and the scale of the services provided, the LCBs are the largest group of financial institutions in the banking sector. The LCBs dominate the financial system and have the highest market share of the financial system's assets overall. Thus, the health of the Sri Lankan financial system depends to a great extent on the firmness of the LCBs, primarily on the functioning and financial effectiveness of the six largest LCBs, generally mentioned to as the Systemically Important Banks (SIBs) named as: Bank of Ceylon, Commercial Bank of Ceylon, Hatton National Bank, Peoples' Bank, Sampath Bank and Seylan Bank. The systemic importance of the LCB sector is comparatively low in comparison to the LCBs, both in terms of size and their impact on the financial system, as it does not make for a major intermediary role in the payment cycle. While taking into account the importance of SIBs in the financial sector, research has concentrated on these institutions solely as a population.

## **1.3. Research Problem**

This is giving a descriptive statement of the problem to be addressed and resolves hence give a focus and a sense of direction. It enables to identify the gaps between the current state and desired state to identify a solution (Roman, 2011). The implementation of paperless financial transactions has been challenging especially in developing countries due to people attitudes, banks' infrastructure and heavy investment on technologically advanced equipment for initial set up.

The increase in customer had led to increase in transactions and documents processing which had increased costs and the liquidity position of the bank (Kumari, Ferdous and Khalida, 2020b). The constant increase in staff to provide a better customer service and debtors recovery is not a practical solution in the long run especially when entering the international market. The commercial banks intent to implement paperless financial transactions techniques.

Moving away from the current traditional methods would cause various challenges in terms of change in authorization levels, documentation handling, requirement in various new techniques, qualifications and occurrence of errors at first could be high due to familiarization of technologically advanced. It requires heavy financial investment at the initial start to acquire the required technological equipment's and training of staff, but it is cost effective system to reduce its costs and increase its profits. When moving towards online transactions the customer relationship could be affected due to staff resentment this would put their business relationship at risk.

The costs of the banks have been constantly increasing in terms of cost of transaction handling, discard and storage costs due to the current paper base financial transactions (Kumari, Ferdous and Khalida, 2020a). The bank has been in constant need to recruit more staff to handle the transactions as the customers' increases which is not practical in the long run especially due to current volatile liquidity position the bank is

experiencing. It is essential for the bank to implement paperless financial transaction techniques on customer loyalty and move towards online transactions. This will not only reduce costs but improves employee efficiency, security and better customer service. Therefore, this research is attempting to examine customer loyalty as a significant factor towards paperless banking among the costumers in SIBs in Sri Lanka.

## **II. LITERATURE REVIEW**

### **2.1. Paperless Financial Transaction Techniques**

Paperless banking is referred to as conducting of transaction via electronic means of exchange of documents and monetary funds in contrast with the traditional transaction methods using paper documents. Paperless transactions are carried out electronically in the similar manner as paper base, but exchange of documents is carried out electronically within the definition and scope of the paperless trade given by Sung & Sang in 2014.

Commercial banks have been using paper base financial transaction for centuries they have been suffering in terms of cost, profitability and efficiency due to the time consumption of processing documents, errors and lost documents. Even though banks have invested various cost-effective process, but they have been unsuccessful due to lack of sophistication by the bank management. It is essential for banks to implement a solution that would reduce their costs, improve profitability and efficiency while enhancing customer relationship (Abad-Segura and González-Zamar, 2020).

The rapid increase in institutional costs and environmental concern has led to an increase in demand for the implementation of paperless banking. This encourages easy and faster access of information in a timelier manner, faster customer response, reduce the risks of information theft and other catastrophe that encourages efficiency, collaboration. This opens up banks opportunities to engage in international collaborations since the financial transactions can be carried out easily without practicing the traditional methods such as advance payments, opening up of foreign accounts and so on that are troublesome and creates gaps and miscommunications in the financial transactions (Bill, 2002). Paperless banking makes transfer of funds easy for both the parties without the need to carry cash as it is bulky to carry large amounts of cash around hence reduce the risk of attracting theft and the constant need to be alert when physical cash is in possession. The constant need to be obtained information and verifying of the accounts will ensure that the financial transactions are being carried out to the rightful owner (Brian, 2007).

Paperless banking transactions have changed the way banks are currently managed its activities, management, communication, risk assessment and has set the best practices techniques on effective bank management. This increase in number of banks moving towards paperless banking transaction puts the pressure on government and auditors the need to shift towards a paperless system, familiarization of electronic audits and incorporate it as a source of primary audit tool. The paper base audits, and government tax filling had led to various pitfalls over the years due to misplacement of documents, time consumption of gathering and evaluation of paper base documents (Toops, 2014).

Over the year's banks have been going through the pressure to enhance and remain competitive therefore an effective strategy for the banks to focus attention on costs is to reduce the paper usage in the operations by engaging in electronic operations and transactions. Going paperless has many advantages such as increase efficiency, saving of paper, printing costs, storage cost, environmental benefits, retrieving of files and information in an effective manner while enhancing customer service to build customer loyalty (Veeraraghavan, Almuairfi and Chilamkurthi, 2016).

### **2.2. Factors Affecting on Paperless Financial Transactions**

This is used in defining the relationship the variables have with one another where an effect on one variable will affect the other variable hence it will impact the study. Independent variables are the cause of any changes in the dependent variables hence there is an empirical relationship between cause and effect (Neil, 2010).

The independent variables have been identified as customer loyalty, costs, efficiency and security for this research. Customer loyalty is expected to be attained by provide better customer service with the implementation of paperless banking techniques. The use of high advanced technology should prevent unauthorized personals from accessing information, but a breach of security would prevent them from going future with the implementation (Athapaththu and Kumari 2018). The costs of the company are expected to decrease and increase its profits with the implementation. Implementation of paperless banking techniques expected to reduce employee workload and increase efficiency. This is the identification of strength and direction of the variables that is the strength relationship it has with the each other and the extent to which it could influence the implementation of paperless banking techniques. The strength of effect it has can influence the successful completion of the study (Mohammad and Navid-Reza 2016).

### **2.2.1. Customer Loyalty**

The independent variables of this study on paperless banking techniques have been identified and their association with each other. The banks are mostly concerned of cost factors therefore overall costs and profits of the bank affects to a greater extent especially if the costs of the bank have not reduced with the implementation would cause a negative effect. Customer loyalty is one of the important influencing factors of the study therefore both banks and its customers are expected to enhance their business relationship through paperless banking techniques. It is essential to build and maintain the customer relationship to prevent any negative impact on the bank. Authentication of system access is an essential part of moving to online transactions to safeguard the access of information but a loophole in security would have a negative impact. Increase in employee efficiency and motivation is an essential objective to achieve hence its great impact on the success of the bank.

Customer communications in relation to new product launch, expansion of market for existing products, discounts offered and various other communications with the customers are carried out via brochures and new letters including customer contract agreements. These systems are not cost effective nor can they be easily managed especially as the number of customers' increase over the years. This leads to a requirement of a separate section of staff for the management of customer agreements besides that process of printing, delivering and finalizing of agreements is time consuming and costly. Therefore, a paperless documentation would enable the customer to directly access and retrieve this information whenever necessary (Garry, 2008).

The use of electronic signatures and electronic agreements has become a new requirement for customers encouraging electronic consumer transactions and agreements. This has led to an increase in number of electronic transactions with an increase in consumer right and protection against technological advancement therefore the willingness to access unlimited amount of information and entering into financial agreements has increased. The implementation of paperless banking transactions makes it easy for banks to capture the attention of customers, easily engage in business relationships and attain customer loyalty while increasing overall revenue of the bank (Robert & Nicole, 2002).

Paperless financial transactions techniques encourage online transaction to its customers where traditional financial transactions are automated and effective services are given to its customers through personalized electronic communication and interaction among its customers (Haththotuwa and Kumari, 2018). This reduces the consumers waiting time and encourages them to attend to their work more efficiently and effectively within a short span of time. It plays a vital role against the government as all transactions are carried out electronically hence tax collections and other activities are carried out in a transparent manner. Adaptation of online transactions the hassle of going through long documentation process even when filling taxes and other legal procurements (Angel and Ponmalar, 2020).

This form of paperless banking using electronic systems helps act as an economic contributor for improving interactions customer relationships by encouraging more business to engage in banking activities and driving financial sector growth and economic development of the country. The smooth transfer of documents and banking transactions build trust among the bank and customers especially when engaging in international trade. This ensures that all parties involved in trade and transport follow a standardized procedure in handling documents with a single entry point as per the regulatory requirement. This transparency between the banks and customer's builds trust and customer loyalty which is profitable for a sustainable future (Hee, Chen and Huang, 2003).

### **2.2.2. Cost**

The number of documents is generated in a day to process payments, customer registration, manual recording and maintenance of files results in excessive amount of time and energy wasted unproductively. Conversion of this process into an electronic means would reduce the cost of documentation handling, labor costs, and amount of human errors. Reduction of such expenses would enable to provide better service and gain profits (Chovancová and Wanninayake 2012; NewRx, 2015).

The use of pass book system has been used for centuries as a form of recording debts and other transactions. Implementation of paperless banking transaction would enable to reduce transaction costs, hassle and cost of printing, physical handling of documents, ongoing transfer costs and redemption costs that incurred as part of the transaction costs. This would enable the banks to increase their liquidity while reducing their debit recovery period. This would enable to improve on their financial position while creating better business relationship (Steiner, 2007).

The market of telematics has been very competitive especially for during the last few years therefore to remain competitive it is essential for the bank to control its costs and move towards paperless transaction methods. Adaptation of paperless banking transaction would enable eliminate bank spending on paper and printing, time saving and storage costs instead the bank will enable to improve on its efficiency and effective customer service (Bradwell, 2004).

Adaptation of paperless banking transaction techniques and moving towards online banking would require dealing parties such as savers and borrowers to changing into digital means and implement highly advanced technology. This is going to be challenging as not all savers and borrowers have the capacity and ability to undergo especially in relation to financial aspect therefore in order to retain customers they would have to continue the traditional transaction methods for such savers and borrowers (Source Media, 2008). Initial installation of paperless banking transaction techniques is costly and time consuming for the banks due to the purchase of required hardware and software. The bank would need to conduct training programs and educate its employees on the use of these technique and its advantages even though it has its own advantages in the long run for both the customers as well as for banks (Kennedy, McLeman, Sawada and Smigielski, 2013).

Most banks do not realize that the documentation handling process to be costly and unnecessary duplication of information and work hence they are willing to undergo huge expenses of maintain document warehouses to keep many records for a longer period of time which is time consuming and waste of bank's office space (Flaherty and Lovato, 2014).

Reducing cost is essential part of banks in the developing countries and participate in international services and markets for effective growth and sustainability. One way of reducing costs for these banks is to engage in paperless banking that is the exchange of electronic transactions of documents and bank management. This does not require physical transactions or physical meetings to be conducted therefore it also reduces the costs of travelling between customer to bank. It also enables to identify unnecessary expenses that the bank may undergo in the process of transactions that might affect the bank's profitability in the long run (Aman, Yann and Chorthi, 2015).

### **2.2.3. Security**

Traditional financial transaction method where every transaction involves the use of papers recordings and receipts result in increase in risk of security information access that is chances of information being accessed by a third party is high. Electronic transactions limit the chances of information going to their parties and reduce the interaction of paper transactions (Maura, 2001; Karunaratne and Wanninayake. 2019).

The current method has various issues such as delays in receiving and delivering of documents which had led to increase in credit periods hence the financial position of the banks has been volatile. Online transactions and paperless banking techniques would enable them to overcome these issues since the documents are sent directly in the authorized persons email addresses and payments are directly transferred to their respective accounts. It prevents both the customer and bank from various acts of negligence such as non-receiving payments and misplacement of documentation (Flaherty, Casey and Lovato, 2014).

Moving to a paperless environment would mean that all information is encrypted and prevents any information breaches. Access of information can be carefully monitored and controlled unlike in paper base where even if various precautions are made possibility of information theft is high. All transactions can be easily traceable by banks, customers and central bank across all manners of savings and borrowings in a timelier manner even in an international transaction. This creates a single platform form to connect foreign trade where all international transaction and communications can be easily carried out via exchange of digital documents and online transactions. This would eliminate the risk of physical interaction of documents and monetary fund hence prevent risks of theft and the risks of information being accessed by unauthorized personals. The central bank too can intervene to address controlling measures for better supervision (Kanika, 2019).

### **2.2.4. Efficiency**

Paperless banking transactions are where all transactions, accounting entries and recording and storing of these information done electronically therefore it is known as electronic depositing, invoicing, payments and withdrawals. This would reduce the bank's accounting costs and will create more efficient and reliable information. An increase in employee efficiency would change attitudes and working methods of the bank (Stevens, 2002).

This method of collecting and processing information electronically enables to provide better service to its customer by providing an integrated system. This eliminates the need for physical signature, reduces the amount of paperwork and tiresome processes of documentation and form fillings which are time consuming and high occurrence of errors. Automation of processes and authorizations would enable provide services with less personals involves within the process (Chovancová, Asamoah, and Wanninayake, 2011; Penttinen and Jyrki, 2016).

Banks engaging in foreign trade involves transactions are not only between a single saver and a borrower but between multiple savers and borrowers with various legal regulations that have them bounded on. This makes dealing with them on paper base documentation and transactions difficult since the bank needs to adhere to the regulations of international trade. The telematics industry in the international market is competitive

and when the documentation process is time consuming and costly the possibility of losing or falling out of business is very high (Szalavetz, 2019; Kumari, Ferdous and Khalida, 2020b).

The implementation of paperless banking transactions would reduce the workload, increase transparency of transactions, auditors, banks and other legal regulatory bodies. The confidentiality of information could be stored and monitored. It also refrains banks from engaging any illegal or unauthorized financial transaction and prevents them from engaging in various activities to hide away from central bank supervision (Subramanian and Saxena, 2008).

### III. METHODOLOGY

Researchers use various types of research paradigm it helps to evaluate the quality of research findings and research gaps that has raised in the process of evidence gathering. This research is based on positivism paradigm where hypothetical assumptions are verified using operationalization of variables in order to explore their association and relationship among each other. This is essential when the factual knowledge and information is gathered is limited to data collection and interpretation via questionnaires and observations. The use of a positive paradigm is essential in adhering to a research approach that sets the plan and detail procedures for data collection, analysis, interpretation based on the nature of the research problem (Phanwar, Abdul, Ansari and Shah, 2017). This research is based on the deductive approach where research process is based on the existing theories and strategies are designed to prove the hypothesis (Phanwar, Abdul, Ansari and Shah, 2017).

The research strategy that would give a step by step systematic approach to carry out the research successfully by giving a sense of direction based on which research planning, execution, monitoring would be conducted in due time and prevents any failures or negligence that can arise use during the process (Phanwar, Abdul, Ansari and Shah, 2017). This also enables to identify the unit of analysis which is individual data collection from selected customers of SIBs who are directly related to the research this information will be collected via researcher administrated questionnaire.

The questionnaire is designed to emphasise the importance and benefits that the bank would have with the adaptation of paperless banking transactions with a demographic understanding of the interviewer and their attitudes. It is segmented to four sections with a detail indication of the variables addressing related questions for each of them and structured on Likert scale multiple choice questions. The research was based on 80 customers representing 6 SIBs in Sri Lanka.

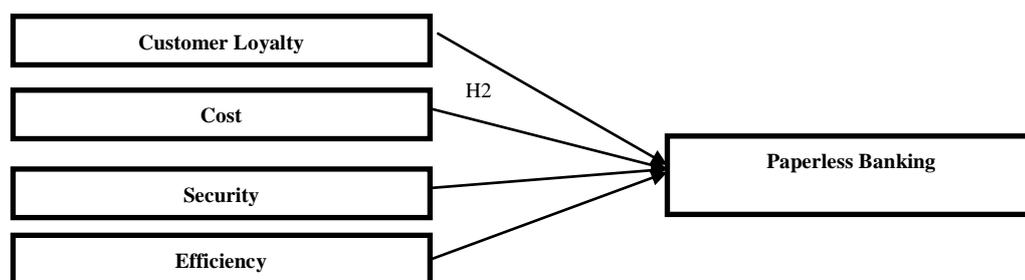
Data analysis of this research is based on quantitative analytical techniques using SPSS-24 for analyzing of gathered data and evaluate the existence of the relationship. Data collection was carried out via researcher administrated questionnaire that is designed in the Likert format for easier evaluation of data based on the response. There are various methods of analyzing data that has been by researchers but in reference to this research statistical tools such as correlation, regression analysis, ANOVA, descriptive statistics used in analyzing the data.

#### 3.1. Conceptual Framework

This is a tool that is used as analytical study for a visual explanation of independent and dependent variables related to the study. This is used in communicating the use and essence of the identified variables hence makes the research finding to be theoretically meaningful and generalize it to be adopted depending on the situation (Dickson, Emad and Joe, 2018).

The related variables are customer loyalty, costs, security and efficiency variables have been identified based on this analysis of their association and their effect. The below figure 1, shows the conceptual framework based on the finding from the literature reviews.

**Figure 1: Conceptual Framework**



*Source: Researcher constructed based on the empirical literature*

**3.2. Hypotheses Testing**

This is a proposed explanation for a phenomenon therefore it is a tentative assumption that is made in order to arrive at a logical concession based on the conditional statements. These logical concessions will be arise using the laws formed by the interference of statistically analysed data it is tested to be proven. These hypotheses are based on the variables evaluated in literature review therefore it need to be evaluated based on the assumptions and its influence (Saul, 2018).

These hypotheses made in relation to paperless banking transaction techniques is based on the variable’s customer loyalty, costs, security and efficiency. The hypotheses were formulated base on previous literature.

H1: There is a significant impact by customer loyalty on implementation of paperless banking transactions in Sri Lanka.

H2: There is a significant impact by cost on implementation of paperless banking transactions in Sri Lanka.

H3: There is a significant impact by security on implementation of paperless banking transactions in Sri Lanka.

H4: There is a significant impact by efficiency on implementation of paperless banking transactions in Sri Lanka.

**3.3. Operationalization**

Variables that needs to be operationalized with its indicators to convert the abstract concepts to measurable observations by setting the guideline for creating the questionnaire for data collection through reliability (Pritha, 2020). This gives a guideline for the preparation of questionnaire to communicate the research study to its selected pollution. The table 1, has been designed to show the operationalization table to indicate the key performance indicators.

**Table 1: Operationalization Table.**

CONCEPT	VARIABLE	INDICATION	SCAPE	QUESTION NUMBERS	SOURCE
GENERAL INFORMATION		CURRENT COSTS	LIKERT (1-5)	Q1, Q2, Q3, Q4, Q5	(Bill, 2002), (Garry, 2008), (Nanggong, Rahmatia, 2019), (Lippincott, Wilkins, 2004)
		EMPLOYEE WORKLOAD			
		EMPLOYEE KNOWLEDGE			
		COMPANY GROWTH			
CUSTOMER BEHAVIOUR	PAPERLESS FINANCIAL TRANSACTION TECHNIQUES	RECOMMENDATIONS	LIKERT (1-5)	Q5, Q6, Q7, Q8	(Abad-Segura, González-Zamar, 2020), (Brian, 2007) (Toops, 2014)
		FEEDBACK			
		EFFECTIVENESS			
		BENEFITS			
CUSTOMER LOYALTY	CUSTOMER SERVICE	CUSTOMER AGREEMENT	LIKERT (1-5)	Q9, Q10, Q11, Q12	(UNECE, 2017), (Robert, Nicole, 2002), (Angel, Pommalar, 2020)
		CUSTOMER SERVICE			
		BUSINESS RELATIONSHIP			
		ERRORS			
COST		DOCUMENTS GENERATION	LIKERT (1-5)	Q13, Q14, Q15, Q16	(NewRx, 2015), (Steiner, 2007), (Bradwell, 2004), (Kennedy, McLeman, 2001)
		PROCESSING AND TRANSFERS			
		STORAGE AND DISCARD			
		ERRORS			
SECURITY		MISPLACEMENT AND THEFT	LIKERT (1-5)	Q17, Q18, Q19, Q20	(Maura, 2001), (Flaherty, Casey, Lovato, 2014), (Kanika, 2019), )
		AUTHORISATION			
		ADOPTION AND FINANCIAL ABILITY			
		ERRORS			
EFFICIENCY		WORK LOAD	LIKERT (1-5)	Q21, Q22, Q23, Q24	(Steven, 2020), (Penttinen, Jyrki, 2016), (Szalavetz, 2019), (Subramanian,
		ROUTINE WORK			
		TRANSPARANCY			
		INEFFICIENCY			

Source: Researcher constructed based on the previous literature.

**IV. DATA ANALYSIS**

**4.1. Reliability Test**

Cronbach Alpha is used in analyzing the reliability of information that is coefficient based on which statistical evaluations are carried out to prove the reliability and effectiveness of the data collected for the study to arrive at favorable conclusion (Italo and Jesus, 2016).

This measures the extent to which the assessment tools provide stability and constant results through dependability. This ensures that all the scales used in the questionnaire are constant and free from bias. It is used as yield for characteristics reliability measurement via Cronbach’s Alpha. Cronbach’s Alpha is used in measuring internal consistency and how closely they are related therefore it is a scale of reliability (Mohsen and Reg, 2011).

The reliability test was conducted using the data collection via questionnaire to evaluate the reliability and consistency by calculating Cronbach’s Alpha. The calculation of Cronbach’s Alpha for this study has been shown in table 2, which gives the variable reliability measurement as per the alpha classification. Customer loyalty has an alpha of 0.804 (Good), Costs has an alpha of 0.864 (Good), security has an alpha of 0.724 (Acceptable), Efficiency has an alpha of 0.731 (Acceptable) and the dependent variable paperless financial transaction has an alpha od 0.825 which is good. When considering the all the variables it has a total reliability of 0.859 alpha that means total variable reliability is good.

**Table 2: Calculation of Cronbach’s Alpha.**

Scale	Variable	Alpa	Classification
0.9 > α ≥ 0.8	Customer Loyalty	0.804	Good
0.9 > α ≥ 0.8	Costs	0.864	Good
0.8 > α ≥ 0.7	Security	0.724	Acceptable
0.8 > α ≥ 0.7	Efficiency	0.731	Acceptable
0.9 > α ≥ 0.8	Paperless Financial Transactions	0.825	Good
0.9 > α ≥ 0.8	All variables	0.859	Good

Source: Survey Data 2020

**4.2. Descriptive Analysis**

Descriptive statistics is a statistical summary of information that has been summarized in a quantifiable manner to process and analyze data to create the basis for describing the data in a more extensive and sufficient manner. It uses the average mean as the central data that is used as the estimation of the whole data that has been collected (Saranga, 2018).

This give a detail statistical summary of data that has been collected and can be used in analyzing to identify the association the variables. It gives a detail analysis of data in a simple summary based on the samples and observations rather than in complex data from the population in a quantitative manner with visual presentations (Hendriks, Duking and Mellalieu, 2018). The data that has been collected from the customers of SIBs with regards to implementation of paperless banking transactions needs to be presented in an easily understood manner using descriptive analysis.

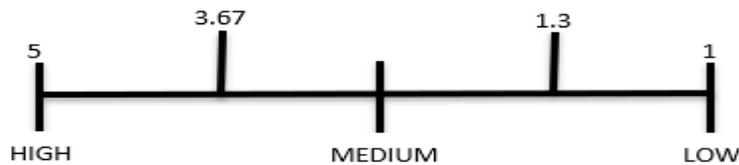
This gives an analysis of data that has been collected in reference to dependent variable paperless banking transaction techniques based on the sample population for its independent variables. Table 3 gives an analysis of mean and standard deviation for the indicators of the independent variables and it is analyses using the mean scale in figure 2, which shows that the mean value of the most of the variables are between high and medium level of the mean scale hence it can be concluded that the data is reliable.

**Table 3: Analysis of Mean and Standard Deviation of Independent Variables.**

INDEPENDENT VARIABLE	INDICATOR	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY DISAGREE	MODE	MEDIUM	MEAN	STANDARD DEVIATION
CUSTOMER LOYALTY	CUSTOMER AGREEMENT	49.40%	9.90%	14.80%	9.90%	16.00%	1	2	2.3	1.55
	CUSTOMER SERVICE	0.00%	0.00%	14.80%	32.10%	53.10%	5	5	4.4	0.73
	BUSINESS RELATIONSHIP	50.60%	28.40%	16.00%	16.00%	4.90%	1	1	1.8	0.90
	ERRORS	0.00%	3.70%	4.90%	50.60%	40.70%	4	4	4.3	0.73
COST	DOCUMENTS GENERATION	0.00%	0.00%	13.60%	35.80%	50.60%	5	5	4.4	0.71
	PROCESSING AND TRANSFERS	0.00%	2.50%	3.70%	51.90%	42.00%	4	4	4.3	0.67
	STORAGE AND DISCARD	0.00%	3.70%	25.90%	44.40%	25.90%	4	4	3.9	0.82
	ERRORS	0.00%	7.40%	8.60%	45.70%	38.30%	4	4	4.2	0.87
SECURITY	MISPLACEMENT AND THEFT	3.70%	8.60%	19.80%	32.10%	35.80%	5	4	3.9	1.11
	AUTHORISATION	0.00%	3.70%	13.60%	40.70%	42.00%	5	4	4.2	0.82
	ADOPTION AND FINANCIAL ABILITY	0.00%	1.20%	16.00%	46.90%	35.80%	4	4	4.2	0.74
	ERRORS	0.00%	8.60%	19.80%	33.30%	38.30%	5	4	4	0.97
EFFICIENCY	WORK LOAD	0.00%	0.00%	22.20%	40.70%	37.00%	4	4	4.1	0.76
	ROUTINE WORK	0.00%	0.00%	3.70%	51.90%	44.40%	4	4	4.4	0.57
	TRANSPARANCY	0.00%	0.00%	3.70%	59.30%	37.00%	4	4	4.3	0.55
	INEFFICIENCY	0.00%	3.7	24.70%	32.10%	39.50%	5	4	4.1	0.89

Source: Survey Data 2020

Figure 2: Mean Scale.



Source: Survey Data 2020

4.3. Multiple Regression Analysis

Regression analysis is used in analyzing the relationship between the variables therefore the purpose of using this is to examine the influence of independent variables on the dependent variable. It enables to determine the factors that are essential and nonessential depending on the extent of influence it has on the dependent variable (Ben, 2018). ANOVA is a statistical model that is used in estimating the association of different variables therefore it gives a statistical test of the comparison of means of two variables to determine the significance level (Rouder, Engelhardt, McCabe and Morey, 2016).

This analysis is used to determine the relationship between the dependent variable and all its independent variables that has been identify overall relationship and their impact on the study. This enables to identify the relative contribution of each variable. This analysis of total contribution via regression model in table 4, that has an R value of 0.974 and R<sup>2</sup> of 0.949 hence it can be concluded that there is a relationship besides that ANOVA of 0.000 (P<0.05) and has a F value of 347.78 in table 5, shows that the hypothesis can be accepted since the existence of the relationship is proven. This has been furthered evaluated in Table 6 which gives a detail analysis of the coefficients in relation to each variable

Table 1: Multiple regression model.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.974 <sup>a</sup>	.949	.946	.13473

a. Predictors: (Constant), Costs, Security, Cust\_Loyalty, Efficiency

Source: Survey Data 2020

Table 5: Multiple ANOVA.

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.251	4	6.313	347.748	.000 <sup>b</sup>
	Residual	1.361	75	.018		
	Total	26.612	79			

a. Dependent Variable: Paperless

b. Predictors: (Constant), Costs, Security, Cust\_Loyalty, Efficiency

Source: Survey Data 2020

Table 6: Multiple Coefficient.

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.886	.161		-5.498	.000
	Cust_Loyalty	-.144	.118	-.121	-1.220	.226
	Security	.001	.029	.001	.037	.970
	Efficiency	.882	.117	.765	7.527	.000
	Costs	.416	.133	.335	3.122	.003

a. Dependent Variable: Paperless

Source: Survey Data 2020

This is where assumptions are tested on a population parameter therefore it is a test of possible probabilities of occurrence that is tested using a sample data. It gives evidence for a possible cause of relationship or impact it is bound to have on the population. These assumptions are tested using statistical analytics to examine and measure using a sample population (Drik, 2014). This is used in analyzing the relationship between independent variable on dependent variables using statistical tools scatter diagram, correlation, coefficient, regression and ANOVA from SPSS-24 to gather evidence to prove the existence of their relationship using statistical tools as stated in the Table 6 which shows that these variables have been accepted due to the presence of a positive relationship. The variables security does not have a strong relationship as others but since its positive and within the range it is accepted.

**Table 7. Analysis of hypothesis testing.**

HYPOTHESIS	RELATIONSHIP	RELATIONSHIP	JUSTIFICATION				
			CORRELATION	R SQUARE	REGRESSION	ANOVA	BETA
H1	CUSTOMER LOYALTY	VERY STRONG POSITIVE	0.928	86.10%	0.928	0.000	0.928
H2	COSTS	VERY STRONG POSITIVE	0.952	90.60%	0.952	0.000	0.952
H3	SECURITY	WEEK POSITIVE	0.340	11.60%	0.340	0.002	0.340
H4	EFFICIENCY	VERY STRONG POSITIVE	0.970	94.20%	0.970	0.000	0.970

Source: Survey Data 2020

Correlation is used in statistically measuring and evaluating the relationship between two variables. It is used in evaluating the strength of relations therefore a higher correlation would mean that there is a strong relationship among the variables and a lower correlation means there is a week relationship (Monica, Antonella, 2019). Correlation had evaluated whether a relationship exists between paperless financial transaction techniques and customer loyalty, costs, efficiency and security. As per the analysis customer loyalty has a correlation of 0.928, cost 0.952, security 0.340 and efficiency has 0.970. these correlation calculations are within the range of -1 and +1 and it is positive therefore the null hypothesis was rejected since there is a positive relationship. This has been furthered proven by regression analysis of 0.928 customer loyalty, 0.952 costs, 0.340 security and 0.970 efficiency. The strength and influence of each variable on the other is determined by beta coefficient of 0.928 customer loyalty, 0.952 costs, 0.340 security and 0.970 efficiency. As per R<sup>2</sup> value there is a strong positive relationship between customer loyalty, cost and efficiency but security has a week positive relationship. These statistical calculation hypothetical assumption in Table 7 proves that there is a positive relationship between these variables.

The hypothetical assumptions were analyses statistically using Cronbach Alpha, Descriptive Analysis, Regression Analysis, ANOVA and Coefficient for a sample population of 80. In order to carry out these analysis data from the sample population has been collected using a questionnaire that was collected from the selected customers.

Cronbach Alpha was conducted to determine the reliability of the data collected. As per the analysis the variables are within the range of good and acceptable hence the data is reliable. Descriptive analysis gives the frequency of responses with analysis of mean and standards deviation. The reliability of mean is evaluated using the mean scale to evaluate the mean value of the variables that are within the range of high and medium therefore the data is acceptable and has a satisfactory response from the respondents.

## V. CONCLUSION

The implementation of paperless banking transactions has been a concern for banks for decades. Commercial banks have been trying to implement means and ways to maintain a paperless environment within the bank to reduce employee’s workload and create room for innovation and efficiency. These paperless financial transactions have been successfully implemented in the developed countries but has been challenging for developing countries due to huge investment in hardware and software at the initial start even though it is profitable in the future. Adaptation of a paperless banking transaction techniques encourages the bank to contributes towards social responsibility initiatives such as CSR projects. This research on paperless banking transaction techniques on customer loyalty towards online transaction was conducted due to the pitfalls in the current financial transaction methods where increase in documentation handling had increases institutional costs, delay in payment processing, volatility in bank liquidity position, increase in debtors and creditors and its overall impact on the bank profits. It is essential for banks like SIBs that provides online banking facilities to provide a solution to the companies to build customer relationships while reducing its costs when moving the bank to a predictable future.

The research was based on the customers of SIBs for the sample size for this research has been limited as 80. The literature review for this study had enable to identify the independent variables as customer loyalty, cost, efficiency and security therefore the Analysis for the study is based on these variables. In order to evaluate

the relationship between these variables and the dependent variables conceptual framework and operationalization table were designed. Based on these hypothetical assumptions to analysis the relationship using statistical tools. The statistical analysis of these assumption in comparison to the literature have proven that there is a positive relationship between the variables and has emphasise the importance of implementation of paperless banking transactions. It also emphasis on the impact these variables have on the study by evaluating the association and moderating impact of these variables on the dependent variable.

In conclusion paperless banking transaction techniques on customer loyalty towards online transactions at SIBs would enable both the banks and customers to reduce costs, enhance efficiency and implement highly advanced security solutions for information protection hence would lead the bank to a profitable foreseeable future.

## **VI. RECOMMENDATIONS**

The purpose of this research is to implement paperless banking transactions to the customer of SIBs to reduce costs, enhance documentation security and employee efficiency and establishing of customer loyalty. During the study it has been identifies that customer loyalty, costs, security and efficiency are directly linked to each other.

In order to implement paperless banking transactions techniques, it is essential for the management of the bank to educate its employees on the benefits and use of these advanced technology. This would enable them to refrain from creating a negative impact on the employee attitudes and job security therefore it is essential to conduct constant training workshops and first-hand experience on working on paperless environment so that the bank staff are able to expand their knowledge and experience while reducing cost and inefficiency.

Paperless banking transactions do not require length authorization levels and does not require lot of personals in the process of handling financial transactions. In order to carry out an effective online transaction system it is essential for the banks to change its organizational hierarchy to reduce the authorization levels to faster the documentation process and reduce the payment credit period so that the overall liquidity position of the banks improves. Along with change in authorization level it is essential to change its span of control that is execution of wide span of control so that certain financial decisions can be taken at required levels rather than the waiting for top management authorization.

This will transform the documentation sharing and processing flow within the transition therefore streamline of information flow will prevent the exchange of unnecessary documentation handling and provides opportunities to engage in global trade across borders. It also helps the banks to meet regulatory compliances more effectively at lower costs therefore it is essential for the banks to decentralized service administration process to assists not only the SIBs but also other commercial banks to access international markets as well.

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