

# Factors Favoring Electronic Customer Relationship Management (E-CRM)

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**ABSTRACT:** In the light of present globalization and world economic cooperation, competitive pressures by customer demands for banking products and services are intensifying. Banks should increase investment in technology applications, build and develop modern infrastructure to deliver innovative banking products and services. It is expected that the successful implementation of Electronic Customer Relationship Management (eCRM) solutions will provide banks with the optimal solution that will enhance the ability to understand customers in a better way, thus increasing the competitiveness of the bank. The successful implementation rate of eCRM is, however, not high in both world and Sri Lanka. Banks that have implemented eCRM have often failed to meet expected success. This study was undertaken to identify and quantify the factors affecting the success of commercial banks' eCRM implementation in Sri Lanka. This study also proposes solutions that will help banks implement eCRM solutions successfully in order to enhance the competitive competence of commercial banks. In addition to eight in-depth interviews with senior managers, experts and head of the eCRM project, a sample of 187 managers in the middle and senior management level at different licensed commercial banks participated in the study. The study aimed to identify if there is an impact on the relationship between effective implementation of e-CRM and factors such as e-CRM strategy, IT infrastructure, data quality, banking culture. The study findings add value to the banking sector and provide statistical results that are essential for bank managers and CRM solution providers to improve e-CRM strategy, IT infrastructure, data quality, and banking culture. The result shows that the implementation of e-CRM has a statistically significant and positive relationship between the factors identified and will enable managers in this sector to implement e-CRM in the best possible way.

**KEYWORDS:** Customer Relationship Management (CRM), Electronic Customer Relationship Management (eCRM), eCRM Solution, eBank

## I. INTRODUCTION

In an increasingly dynamic market, long-term relationships with valued customers are usually seen as a key to profitability. E-CRM is one of the industry's key strategic initiatives today. It has become the e-world's primary marketing relationship paradigm (Esmaeilpour & Dashti 2013). In addition to the development of information communications technology, the enhancement of the Internet and Web 2.0 technologies stimulates the growth of e-commerce. In the context of e-commerce, the concept of Customer Relationship Management (CRM) has become electronic Customer Relationship Management (eCRM). Thus businesses have moved from off-line CRM to electronic channels. The commonly called 'e-CRM' approach improves the ability to collect, incorporate and distribute consumer data from client websites. By doing so, businesses obtain useful information relevant to customer behaviour. eCRM supports business and serves customers better by retaining valued customers and enhancing customer analytics.

Banks are always committed to building customer relations and increasing customer satisfaction. The products and services of electronic banking have been in place in the world for a long time to gratify the customers' maximum needs. Although commercial banks are attentive in eCRM solutions, the fact remains that the deployment of eCRM solutions in banks is still a problem. Failure to implement eCRM solutions or the inability to achieve the desired efficiency is relatively high (Ata & Toker, 2012; Kim et al., 2012). The continued failure rate of implementation of e-CRM exhibits the need for further research. Implementing eCRM solutions at commercial banks is complicated, expensive and risky. It requires empirical investigation, analysis and identification of factors influencing the successful implementation of eCRM solutions. Therefore, eCRM should be studied in order to determine the factors and their impact on the success of implementing eCRM solution at commercial banks. The study was conducted to identify the factors affecting the successful implementation of eCRM solutions in commercial banks in Sri Lanka and its on customer relations. It will thus facilitate the process of implementing eCRM solutions at Sri Lanka's commercial banks.

## 2. Literature Review

The introduction of e-CRM systems, developed mainly to create and manage long-term customer relations, was one of the vital marketing developments (Nguyen & Mutum, 2012). Though e-CRM solutions offer immediate benefits, there are also many failure rates of e-CRM systems and e-CRM infrastructure (Vella & Caruana, 2012). e-CRM is not only a tool but also a strategy for effective customer relationship management and for measuring customer attitudes and customer retention and profitability in a competitive market.

It is evident that e-CRM and technological improvements will continue to be a vital element in CRM. It is assumed that e-CRM provides customized services automatically without considering the differences in customer attitudes, preferences, intentions, ethics, cultures and languages, thus failing to capture and retain customers to gain the profitability of the company. Garrido-Moreno & Padilla-Meléndez (2011) are, therefore, cautious about reducing the role of technology that occupies the company where CRM can merely be implemented. However, a comprehensive approach is needed to manage the dynamic customer relationships, which are evolutionary in nature (Finnegan & Hamid, 2009). It will provide an opportunity for continuous development in the delivery of customer service.

The CRM value chain covers the acquisition and retention of customers. Organizations implement e-CRM across their organizational units to improve ongoing adoption and use of these systems. The main factors deterring system implementation are not only infrastructure or hardware but also banking culture. Therefore, the lack of supportive and associated information systems or infrastructure can prevent e-CRM from improving the quality of customer information (Kim et al., 2012). This challenge is also instigated by e-CRM processes that are by nature too innovative and forward-looking and hard to keep the organization sustainable and facilitate customer relationship management (Verhoef & Lemon, 2013). This indicates that businesses should adopt eCRM across business channels in order to serve customers better, providing them with timely and relevant information.

Given the limitations addressed in the literature, the effective development and successful implementation of eCRM depend on a number of factors that should be considered by an organization, otherwise it will lead to poorly qualified services.

Verhoef and Lemon (2013) believe that technology, human resources and business resources should be aligned with the development of e-CRM infrastructure in order to cope with the industrial competition. Therefore, precaution should be taken regarding other industries or countries with different technologies and cultures.

## 3. Theoretical Framework

E-CRM is widely regarded as an advancement in information technology because it has created a paradigm shift in the conventional marketing practices and it has become increasingly necessary for business entities to stay competitive in maintaining long-term customer relationships. But, e-CRM implementation had a reasonably high failure rate. System usage is also considered as one of the key measures for its ineffective implementation. It shows a close association with other constructs such as e-CRM strategy, IT infrastructure, data quality, and consumer banking culture resulting in better business consequences. More precisely, an understanding of the determinants of actual behavior towards using e-CRM can provide valuable insight into the improvement and implementation of e-CRM systems, especially the determination of user requirements. As a result, the relationships of the variables under investigation have been illustrated and hypothesized in the following framework.

### 3.1 E-CRM Strategy

The e-CRM approach should be aligned with banks' growth strategy, focusing mission and core values of the banks. The strategy is designed with customer-centric focus, defining clear and explicit targets for each stage. eCRM strategy aims at reaching customers through the use of the latest innovative banking products and services, helping banks proactively to identify, engage customers, create and maintain healthy customer relationships while increasing customer satisfaction. The eCRM approach should be prevalent across all parts of the bank and it establishes the framework for the efficient implementation and effective operation of eCRM. The influence of eCRM strategy on the success of eCRM was affirmed by Arab et al. (2010) and Esmailpour and Dashti (2013). Hence, the following hypothesis is developed for this study.

H<sub>1</sub>: There is a positive relationship between eCRM strategy and the success of eCRM solution.

### 3.2 IT Infrastructure

Technology infrastructure resources, systems, communications networks related to the eCRM operation will have a direct impact on the operation of the system. The absence of supportive and compatible information systems or infrastructure can inhibit the eCRM from improving the quality of customers' information (Kim et al. 2012). Sivaraks, (2011) and Van Nguyen & Pham (2016) acknowledged the influence of technological infrastructure on

the success of eCRM. Therefore, Information Technological infrastructure is considered as one of the important factors affecting eCRM 's success and it is hypothesized as follows:

H<sub>2</sub>:There is a positive relationship between IT infrastructure and the success of eCRM solution.

**3.3 Data Quality**

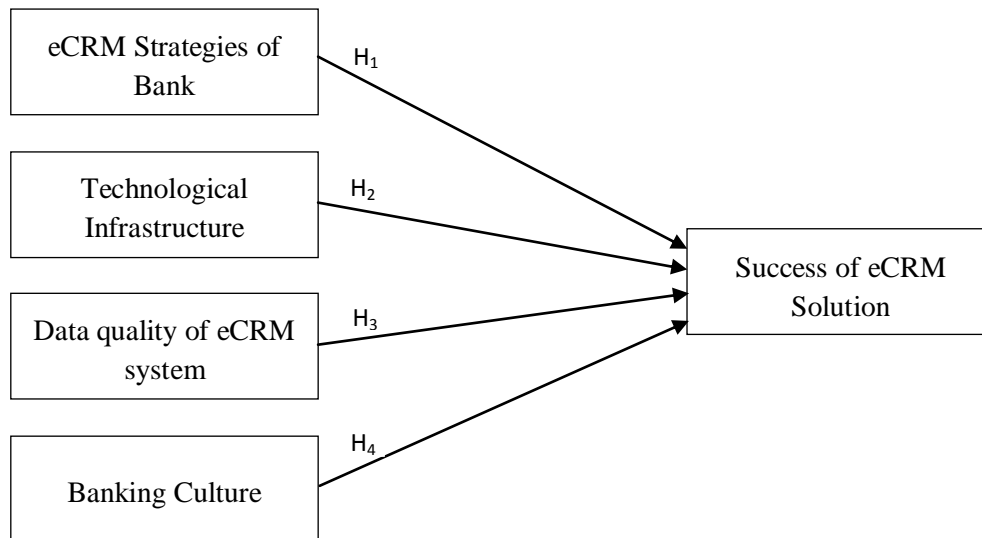
For successful implementation of eCRM, the data must be useful and accurate (Abbott et al., 2001). The input data should be complete, reliable, consistent, and timely in order to ensure valuable information is provided by the system, that is why the quality of the input data significantly affects the success eCRM. Al-Dmour et al. (2019) suggested that banks can improve their eCRM strategy from the perspective of their customers when dealing with the quality of their data, such as deciding customer needs, preferences and income. Tseng (2007) also opined that the quality data would improve the performance of the eCRM. Sivaraks (2011) affirmed that the role of the quality of data in relation to the success of eCRM. Hence, this research proposes the following hypothesis:

H<sub>3</sub>:There is a positive relationship between data quality and the success of eCRM solution.

**3.4 Banking Culture**

The cultural environment generally plays a significant role in the success and failure of the system implementation. According to Gebeyehu (2019), banking culture was found to have a positive impact on the bank's system replacement project. Similarly, in the study of Abd El Kader (2012) and Esmaeilpour & Dashti (2013), it was ascertained that cultural factors of an organization influence the successful implementation of eCRM. Thus, the banking culture is perceived as having an impact on the success of e-CRM and hypothesizes as follows:

H<sub>4</sub>:There is a positive relationship between banking culture and the success of eCRM solution.



**Figure 1. Conceptual Model**

**4. Research Methodology**

This study adopted a mixed-method. But mainly, a quantitative approach was appropriated to establish the relationship between successful e-CRM implementation and the four independent variables such as e-CRM strategy, IT infrastructure, data quality, banking culture. The approach was considered suitable as it supported researchers to quantitatively test and confirm hypotheses and explain the expected benefits of e-CRM implementation among Sri Lankan banks.

However, eight (8) in-depth interviews with senior managers and experts, head of the eCRM project at commercial banks in Sri Lanka were conducted as part of the qualitative approach to identify the agreeability towards objectives of e-CRM, use of technology in banking services and factors favouring E-CRM. A pilot study was also conducted with 12 bank managers who engage with eCRM in some way, and the result of the initial step helped

researchers to check and calibrate the scale of the measurements. The analysis includes EFA, CFA and SEM to examine the measurement scale reliability, to test the hypotheses and to validate the measurement model.

**4.1 Data Collection and Instrument**

Due to the purpose of the research, the targeted respondents were the bank managers and data were collected from the managers of various commercial banks operating in Sri Lanka. Notably, most of the interviewees were bank officials who were employed at the middle and senior management levels. This was done to confirm the appropriateness of the data in assessing the implementation of the banks' eCRM and its impact on the illustrated components under investigation.

A structured questionnaire designed to capture demographic information as well as information on the five constructs such as e-CRM strategy, IT infrastructure, data quality, banking culture, and eCRM implementation successes. The five constructs were measured using a 5-point Likert-type scale question that was marked by 1 for strongly disagree and 5 for strongly agree to express the degree of agreement. For the final run of data analysis, a total of 187 usable questionnaires were qualified.

**5. Data Presentation and Discussion**

**5.1 Descriptive Analysis**

Banks have changed the concept of depositing and dispensing money and now it can conveniently be done through a Cash Deposit Machine (CDM) and Automated Teller Machine (ATM). This is one of the significant developments in the banking sector to provide better services to customers. The summary of the interview findings has been shown under the relevant headings in the following subsections.

*Objectives of E-CRM*

The majority of managers agreed that the prime objectives of eCRM would be to provide excellent customer services and to create and retain customers profitably. Their entire option towards the Objectives of e-CRM is in table 1.

**Table 1. Objective of E-CRM**

<b>Agreeability towards Objectives of e-CRM</b>	
To provide excellent customer service	To discover new customers
To enhance customer loyalty/retention	To help sales staff close deals faster
To simplify marketing and sales processes	To reduce the costs (eg. administrative)
To increase profitability	To increasing customer satisfaction

*Techniques of E-CRM used by the banks*

The managers rated the following techniques and also agreed that all the listed techniques immensely contributed to the banks in retaining the existing customers, attracting new customers and providing enhanced services.

**Table 2. E-CRM services**

<b>Agreeability towards Use of Technology in Banking services</b>	
Automated Teller Machines (ATMs)	Mobile Banking
Phone banking/ Tele banking	Total Branch Mechanization (TBM)
Internet banking - E-Banking	Electronic Funds Transfer (EFT)
Society for Worldwide Inter Bank Financial Tele Communication (SWIFT)	INFINET and VAST Network
Wireless Banking Services	Electronic Clearing Services

Point of Sale Terminal

Data Warehousing and Data Mining

*Factors Favouring e-CRM*

The table 3 details out the agreeability of the employees towards the various factors favoring eCRM in banks. In the competitive era CRM necessitates great importance and it is the need of the present hour. The general CRM functionalities which were implemented in the past years have been transformed to eCRM. The various technological services which were deployed have increased the efficiency of the banks and the operation. The following statements have been rated by the respondents.

**Table 3. Factors Favouring e-CRM**

<b>Agreeability Towards Factors Favouring e-CRM</b>		
Time taken for Operation	Consistency of service	Quality of maintenance
Convenient bank operating hours	Employee interest in solving customer problem	Modern Equipment and fixtures and ATM
Employee professional appearance	Understand specific needs of Customer	Quality and appearance of material
Employee' Courtesy	Employee's Knowledge	Confidence and Safety
Employee's Behaviour	Employee's willingness	Information and guidance
Employee's promptness	Employee's attitude	Time schedule for operations
Employee's Personal relation	Physical facilities	Customer best interest
Individual Attention		

5.2 Reliability of Measurement Scales

The reliability test is done to measure the internal consistency between the items used to measure each construct. The results of reliability analysis showed that eCRM strategy ( $\alpha = 0.903$ ), IT infrastructure ( $\alpha = 0.914$ ), data quality ( $\alpha = 0.932$ ), banking culture ( $\alpha = 0.957$ ), and successful eCRM ( $\alpha = 0.915$ ). This study assessed the reliability of Cronbach's alpha and accepted all the values since the alpha coefficient exceeded the minimum acceptable value of 0.70 suggested by Hair et al. (2012).

**Table 4. Reliability Test**

	<b>Factor</b>	<b>Reliability (<math>\alpha</math>)</b>
CS	eCRM Strategy	0.903
IT	IT infrastructure	0.914
DQ	Data Quality	0.932
BC	Banking Culture	0.957
SC	Successful eCRM	0.915

5.3 Exploratory Factor Analysis (EFA)

The factors influencing the success of eCRM system (SC) were measured. Having evaluated the measurement scale by Cronbach Alpha, an Exploratory Factor analysis (EFA) was used to ascertain the extent of convergence of the observed variables by the components. The study checked KMO and Bartlett's test that showed a high KMO coefficient ( $= 0.787 > 0.5$ ) and significant value of Bartlett's test (Sig.  $= 0.000 < 0.05$ ) indicating that factors are suitable. The factors extracted at the eigenvalues greater than 1 using Principal Axis Factoring (PAF) and non-perpendicular rotations Promax, contributing to 57.435% of the total variance (i.e., greater than 50%) satisfy the requirement.

**Table 5. Results of EFA**

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.787
	Approx. Chi-Square	3543.165
Bartlett's Test of Sphericity	Sig.	.000

**5.4 Confirmatory Factor Analysis (CFA) and Structural Equation Model (SEM)**

The initial measurement model was developed with the combination of all the items related to the final CFA results, and then the measurement model was tested as indicated by the significant chi-square fit, CMIN/df = 1.480. By observing the absolute fit indices and incremental fit indices, the values of RMR and RMSEA values are 0.054<0.08 and 0.042<0.06 respectively; on the other hand, all the indices, GFI=1.989, TLI=.956 and CFI= 0.971, were greater than the standard cutoff values. The components of eCRM strategy, IT infrastructure of the bank, banking data quality, and banking culture have no correlation between the error of observed variables. Thus, the initial measurement model is a valid.

**5.5 Structural Model and Hypotheses Testing**

The results of the structural model and hypotheses testing were illustrated in table 6 and table 7. The exploratory power of the regression model with the result obtained using structural equation modelling (SEM) demonstrates the relationship between exogenous and endogenous variables. Accordingly, all the independent variables (CRM strategy, IT infrastructure, data quality, and banking culture) have a significant effect on successful eCRM.

**Table 6. Summary of Structural Model**

Path	Unstd. Estimate	S.E.	C.R.	P	Std. Estimate
SC. ← CS.	.245	.072	3.385	***	.245
SC. ← IT.	.462	.135	3.427	***	.258
SC. ← DQ.	.020	.090	3.614	***	.246
SC. ← BC.	.205	.057	3.424	***	.198

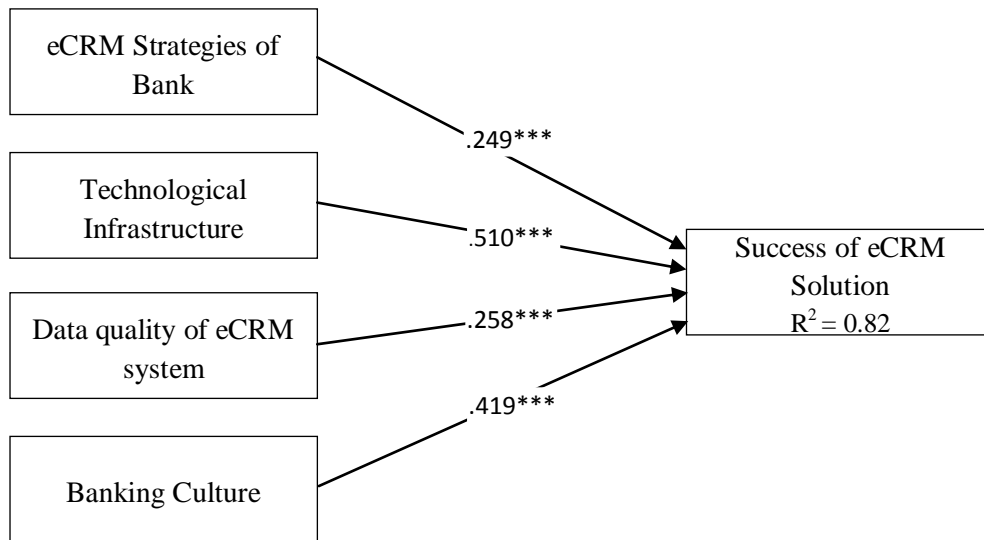


Figure 2.Path Analysis

Note: \*\*\*Significant at p< 0.001

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The table 7 indicates that all the hypotheses were accepted since all the variables have significant influence on success of eCRM solution. This result is supported by the previous findings of Henri et al., (2015). The results obtained using the structural equation modelling (SEM) reasonably explained the explanatory power of the regression models. A total of 82% of the variance of the success of eCRM solution is demonstrated by eCRM strategy, IT infrastructure of the bank, banking data quality, and banking culture.

Table 7.Hypothesis Testing - Direct Effect

Standard Regression Weight	Hypothesis	Beta	P-Value	Conclusion
eCRM Strategy → Successful eCRM	H1	.249	***	Supported
IT infrastructure → Successful eCRM	H2	.510	***	Supported

Data Quality	→Successful eCRM	H3	.258	***	Supported
Banking Culture	→Successful eCRM	H4	.419	***	Supported

**6 Conclusion and Recommendation**

E-CRM, if implemented in banks, can help banks become ubiquitous globally. These platforms facilitate banks to understand the needs and wants of the customers by providing them with a variety of services that ultimately make customers loyal and happy. The eCRM brings benefits to both banks and customers by improving the speed of information dissemination and reducing operational subjectivity. But the fundamental drawback found in implementing eCRM solution has been inadequate success. Ignoring the essential factors in the implementation of the system may be a reason for a poor success rate. Therefore, essential factors such as the eCRM strategy, IT infrastructure of the bank, banking data quality, and banking culture must be taken into serious consideration when implementing eCRM projects.

The findings confirm that eCRM management strategy has a strong impact on the successful implementation of eCRM in commercial banks. A collective culture found in commercial banks in Sri Lanka may have different consequences when implementing eCRM, because the study also confirms that the banking culture has a significant effect on the success of eCRM. The technological infrastructure and data quality also have a substantial impact on the success of the eCRM solution. Technology infrastructure and data quality were also found to be the dominant factors of the success of eCRM solution.

The formulation of the eCRM strategy is the first step in the implementation of the CRM. Banks should build a customer-centric approach in which customer requirements direct all operations of the bank. The eCRM strategy with clear objectives, based on the bank's general strategic development, will support the implementation process of the eCRM as much as possible. Communicating the eCRM strategy with all parts of the bank will make all staff understand the meaning, goals and benefit of eCRM that subsequently facilitate the successful implementation of eCRM.

IT infrastructure and data quality play a significant role in the successful deployment of eCRM solutions at commercial banks. Together with the robust development of IT, the Internet, social networks and smart mobile devices, the IT infrastructure creates significant changes in the behavior and habits of the customers who demand efficient banking services. The basic eCRM system includes advanced consumer data warehouse and data processing applications to provide enhanced and personalized customer experience in relation to the banking products and services. In order to implementation of eCRM successfully, the banks should have a stable and reliable IT system with the facilities to improve and expand the IT infrastructure securely.

The quality of input data ensures that eCRM provides quality output information to ensure the system's success. The banking data is generated from different sources, ex: data obtained from ATM transactions, internet banking, mobile banking, and so on. The stable and secure systems that consolidate data to get complete information ensure the quality of data, which is a vital input to the success of the eCRM solution.

The successful implementation of the eCRM in a bank is also dependent on its culture. Banking culture is embedded in the ethical behaviour, attitude, habit of the staff of the bank. Consequently, the culture inside will be reflected in various activities that will help create goodwill about the bank and develop very good customer relationships. Therefore, a collaborative and sharing culture is important to expedite the process of eCRM implementation.

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