

## Technology Trust and E-Banking Adoption: The Mediating Effect of Customer Relationship Management Performance

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### ABSTRACT

*The electronic revolution in the Malaysian banking sector has started in the 1970's. The first visible form of electronic innovation in the Malaysian banking industry was the introduction of Automated Teller Machines in 1981. Finally, on June 1, 2000, the Malaysian Central Bank gave the green light for locally owned commercial banks to offer Internet banking services. Due to the drastic changes in the business environment, it leads financial institutions to revise their marketing strategies to stress long-lasting relationships with customers. Relationships is important criteria in the selection of private bank. In many conditions, customer satisfaction mediates the relationship between antecedent's factors and marketing performance. Hence, CRM performance is about maintaining good relationship and repurchases behavior, word-of-mouth and customer retention. Trust has been studied in traditional physical commercial environments. In the marketing and management literatures, trust is strongly associated with attitudes toward products, services, and purchasing behaviors. So that, the main objective of this research paper is to investigate the role of CRM performance as the mediator in the relationship between trust and E-Banking adoption. Hence, this empirical paper confirmed the role of customer relationship management performance as the mediators in the relationship between trust and electronic banking adoption.*

*Key words: Trust, Customer Relationship Management Performance, E-Banking Adoption*

### 1. Introduction

CRM practices have since become the in-thing of marketing strategies but unfortunately many people are still confused about the actual domain of CRM that perceives customers and service providers act as the major players. Under the concept of fair benefits for both customer and organization the definition of

basic CRM principles by original authors were adapted to the rational marketing environment. Still the emphasis is on increasing customer value and satisfaction and for those reasons this paper intends to suffuse the organizational factors as a major tool for the CRM success. Many studies relate the concept of customer satisfaction on adopting electronic banking service provided by the banks. Past study by Trust is the cornerstone for a successful and

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lasting relationship with the customer it largely determines the customer's future behavior and loyalty towards the business (Berry and Parasuraman, (1991). Hence, this paper will draw attention to trust as the main antecedent for e-banking adoption mediates by CRM performance.

## **2. Customer Relationship Management Performance**

It is very important to measure the performance of CRM in our organization. Not many researches have been done to measure the performance of CRM in the organization. Previous researcher believe that CRM performance should be measured ultimately in terms of customer behaviors since they are the underlying sources of value of current customers of a firm and have the potential to increase the future revenue streams associated with them and those prospective customers (Wang, Lo, Chi, & Yang, 2004). Their argument was support by Grant & Schkesinger (1995) by saying that the fundamental of CRM is to ensure steady streams of revenue and maximization of customer lifetime value or customer equity, in this case customer behaviors become strategically significant.

Based on such literature, the propose of customer relationship strength, sales effectiveness, and marketing efficiency as relevant CRM performance evaluation metrics (Kim, Choi, Qualls, & Park, 2004). In their study, Kim et al., (2004) define CRM performance as the amount of improvement that retailers achieve in customer relationship strength, sales effectiveness, and marketing efficiency – achieved after implementing CRM technology.

As the requirement of this study, the concept of CRM performance will be based on the concept that introduced by the previous researcher which are base on the customer since they are the underlying sources of value of current customers of a firm. Customer

retention, repurchase decision and word of mouth will be choose as a main indicators for CRM performance, as proposed by Wang et al., (2004). This concept was chosen due to the propose definition of CRM, so that the performance of CRM means the success of creating value for customer through organization for the objective of increasing the retention, repurchase and word of mouth for the purpose of achieving and improvement of and relationship quality.

Previous studies found that customer values have a significant impact on CRM performance (Wang et al., 2004). In the study, Wang et al. (2004) categorized the customer values to four categories of specification; functional value, social value, emotional value and perceived sacrifices. Their research have found that only functional value have a positive relationship to the customer behavior-based CRM performance. Wang et al. (2004) and many other researchers like Woodruff (1997), Slater (1997), and Day (1994) stress on customer value in term of benefit and sacrifice components. However this study will explore the organizational factors or values as a main contribution for CRM performance beside customer value.

## **3. The Antecedent of CRM Performance**

### **3.1 Trust**

Trust can be defined as "a generalized expectancy... that the word, promise, oral or written statement of another individual, or group can be relied upon" (Rotter, 1980). Also trust can be defined as users' thoughts, feelings, emotions, or behaviors that occur when they feel that an agent can be relied upon to act in their best interest when they give up direct control (Patrick, 2002). Many studies have proved the significant relationship between trust and electronic banking or any e-commerce adoption. For example, pass empirical study found that trust significantly

important on online purchasing intention (Chen and Barner, 2007), web site loyalty (Flavian and Guinaliu, 2006), online banking commitment (Mukherjee and Nath, 2003), electronic banking adoption (Rexha et al., 2003) and behavior intention to adopt online information service (Chen and Corkindale, 2008).

On-line trust also found to be important for CRM performance regarding to e-banking services. When CRM performance represents the customer intention to repurchase or reuse of e-banking services, there is an evident that trust is one antecedent of behavior intention in electronic services. For example, previous study by Chen and Barner (2007) proved the important of initial trust becoming important components on purchase intention towards online shopping. Chen and Barner (2007) found both online initial trust and familiarity with online purchasing have a positive impact on purchase intention. Their empirical research found positive influence of perceived initial online trust on purchase intention among the online books shoppers; however the familiarity with online purchasing rise up the influence of online trust towards the purchase intention. The context of their study is among the online customers in Taiwan. The customer intention to maintain with same providers are considered as repurchase intention which presenting the concept of customer relationship management performance in the current study. The familiarity of using online purchasing was not considered in the present study because all the respondents have electronic banking experience at least ATMs machine. Nowadays, the Wi-Fi and Wi-Max technologies provide wireless internet access, removing the need for physical connections. This enables the market to be extended to areas without the conventional telephone or cable networks. Although these new technologies are set to generate new business opportunities, they also represent a particular challenge to consumer trust (Flavia'n and Guinali'u, 2006).

Flavia'n and Guinali'u (2006) conducted an empirical survey on web site loyalty; their study reveals that an individual's loyalty to a web site is closely linked to the levels of trust. Thus, the development of trust not only affects the intention to buy, but it also directly affects the effective purchasing behavior, in terms of preference, cost and frequency of visits. For instance, recent research has indicated that "trust" has a striking influence on users' willingness to engage in online exchanges of money and sensitive personal information (Hoffman, Novak & Peralta 1999). The present study investigate the influence of perceived trust on customer relationship management performance that also have an appearance of behavior-based intention to loyal, word of mouth and repurchase the services.

Mukherjee and Nath (2003), conduct a survey in India to investigate the model of trust in online relationship banking. The main finding from their research confirms the positive relationship between perceived trust and customers' commitment in online banking transaction. They strongly established that that the future commitment of the customers to online banking depends on perceived trust. According to them, perceived trust is one of the important factors for customer intention.

In the same year, Rexha et al. (2003) conduct the study on the impact of the relational plan on adoption of electronic banking. It was found that trust was the key factor influencing the adoption of electronic banking. Perceived customer satisfaction with the bank only impacted indirectly on the adoption of electronic banking.

The lack of trust is a critical issue that needs addressing pertaining to the internet and E-commerce adoption (CommerceNet, 1997). Evidently, Gummerus et al, (2004) mentioned that lack of trust has been one of the most significant reasons for customer not adopting online services involving financial exchanges. Researchers have suggested that online customers generally stay away from vendors

whom they do not trust (Reichheld and Schefter, 2000). Researchers warn that a lack of trust may be the most significant long-term barrier for realizing the full potential of electronic commerce (Keen 1997; Hoffman et al. 1999). Trust is a dynamic process that must be built over time. Since business-to-consumer electronic commerce is still in its infancy, trust in this new market is still relatively scarce. However, various approaches have been suggested to help accelerate the trust building process for the online consumer. Literatures have proven that trust is even more difficult to be built in an online environment (Hoffman et al. 1999).

#### **4. The Consequence of CRM Performance**

##### **4.1 Customer Relationship Management Performance and E-Banking Adoption.**

CRM performances explain the process of value creation which ends with the customer behavior intention (to retain, repurchase, positive word of mouth), customer satisfaction and loyalty towards the brand. Value creations become new strategies for the firms to increase their relationship with the customer, regarding to this Khalifa (2004) was highlighted that the move of firms' strategy from transactional to relational can meet the customer needs. This strategy also will change the way of the firms looking at their customer from the general perspective to more personal. According to the marketing literatures, a basic ways to satisfy the customers is through fulfilling the customer's need and expectation.

This research will choose the electronic technology usage by the bank customers as the consequence of CRM performance. Since the theory selected in this study is the Technology Acceptance Model 2 (Venkatesh and Davis, 2000), overall framework will design to have attitude tributes, intention and behaviors. In this study electronic banking adoption has been

choose as the behavior of customers using electronic banking service.

Among the variables in customer requirement are machine availability, convenient service, friendly interface, openness, security and information updated. The researchers add that the increase in customer involvement through frequent contacts and feedback can influence customer satisfaction and keeping the customer retain with online bank services. Rexha et al., (2003) investigate the impact of the relational plan on adoption of electronic banking. Respondents in the study are individual from selected firms included accountants, financial managers, chief financial officers, financial controllers, and financial directors, as they represent key informants in company-bank dealings. They found that perceived customer satisfaction with the bank only impacted indirectly on the adoption of electronic banking.

Other study in Portugal found that electronic banking customer satisfactions are depending upon on performance of the channel used. Besides that the customer characteristics, and the type of financial operation, are also identified as important factors influencing this process acceptance (Petrico L., Fisk R.P. and Cunha, T.F., 2003). A survey among more than 2,000 customers of an Austrian online bank was conducted to gain important insights into how customer retention in the online banking business can be ensured. The empirical survey by Floh and Treiblmaier (2006) identified that trust and satisfaction are important antecedents of customer loyalty towards electronic banking services. According to Griffin J (1995), loyalty is geared more on behavior and when a customer is loyal, he or she exhibits purchase behavior. However, in e-service scenario, loyalty towards the services is enough to be defined as electronic technology adoption such in electronic banking services.

The study by Methlie and Nysveen (1999) investigate the ways of bank in Norway retaining their electronic banking customers.

Their finding indicates that the adoption behavior or loyalties in online banking environment are similar to those in the physical market-place. However, customer satisfaction is found to have the most significant impact, followed by brand reputation, while switching costs and search costs, although significant, have minor explanatory power (Methlie and Nysveen, 1999). This study also proves that customer satisfaction which represents CRM performance is very important attributes for e-banking adoption. Study by Sathye (1999) empirically investigates the adoption of Internet banking by Australian consumers. The purpose is to quantify the factors affecting the adoption of internet banking by Australian consumers. The sample for this survey was drawn from individual residents and business firms in Australia. They finding shows that security concerns and lack of awareness about Internet banking and its benefits stand out as being the obstacles to the adoption of Internet banking in Australia. If we compare this finding with the concept of customer satisfaction, it shows that security and benefits issues are very important factors for the satisfaction. The customers tend to be less satisfied if the service appear less security and benefits to them. This situation indirectly gives a negative impact on the e-service adoption.

Past research suggested that customer behavior in adopting electronic banking should consider other possible factors derived from literature. An important area is to look more deeply on marketing literature and test acceptance with for instance innovation theory and the TPB (Pikkarainen et al., 2004). The current research have chooses TAM theory from the basis of TRA and TPB believed to be a most acceptable theories that can explain customer acceptance of electronic system. TAM (Davis, 1989) is an extension of the Theory of Reasoned Action (TRA) (Ajzen & Fishbein 1980) and the Theory of Planned Behavior (TPB) (Ajzen 1985, 1991). TAM appears to be the most widely accepted model among information systems researchers (Lallmahamood, 2007). The reviewed of the

literatures shows the possibilities of proposing CRM performance as the preceding factors for e-banking adoption behavior among the bank customer. So that, e-banking adoption was choose as the consequence of CRM performance in this research.

## **5. The Mediating Effect of CRM Performance**

The study by Al-Hawari (2006) investigates the impact of automated service quality on bank financial performance and the mediating role of customer retention. The idea in their study is to propose that the quality of automated services by the bank is important because it can guarantee the bank performance. As we know, bank performance can be achieved when the bank manage to maintain the good relationship with the customer because it ensure that the customer will return. So those in their investigation they have chosen the customer retention as the mediator on the relationship between firm strategies and customer behavior adoption. Their empirical study confirmed the role of customer retention as a mediator in the effect of automated service quality on financial performance. Similar to our study, the main investigation is the role of CRM performance as a mediating factor in the relationship between the technology factors, process factors and customer value factors towards electronic banking adoption. Since the customer retention is constructed as behavior based CRM performance (Wang et al., 2004), we proceed with this mediating effect of CRM performance on the electronic banking adoption.

Other study by Al-Hawari and Ward (2006) also investigate the role of customer satisfaction as the mediator in the relationship between service quality and financial performance. Again, their study confirms the stand of customer satisfaction as the mediating variable in the relationship. Therefore, it is reasonable to proposed CRM performance as mediator variable in the relationship between

technology factors such as trust, usefulness and ease of use towards electronic banking adoption. One of the main dimensions in CRM performance is customer satisfaction (Wang et al, 2004). Research by Lam, et al (2004), hypothesize that customer satisfaction mediates the relationship between customer value and customer loyalty from the basis of the cognition-affect-behavior model. The results support most of the hypotheses and, in particular, confirm the mediating role of customer satisfaction.

In 2001, Robertson et al. conduct a study to investigate the inter-relationship between service value, service quality, satisfaction and behavior intentions. They found that service quality does not have a direct relationship to behavior intentions; rather it indicates that the effect is indirect through the customer satisfaction and customers' service value evaluation. These findings confirm the mediating effect of customer satisfaction in the relationship between service quality and behavior intentions. Their finding was supported the previous research finding by Bagozzi (1992) and Gotlieb et al. (1994).

The study by Colgate and Smith (2005) explores the role of relationship banks towards the success in the customer relationship between the bank and their customer. Their study confirms the role of relationship banks as a mediating factors in creation the successful customer relationship positively in the technology context compared to face-to-face environment. This research finding can be considered in arguing the important of relationship quality in creating successful customer relationship in technology base communication environment.

Regarding to the literatures that has been reviewed, the present empirical paper has proposed CRM performance might mediates the relationship between technology trust and e-banking adoption.

## 6. Research Framework

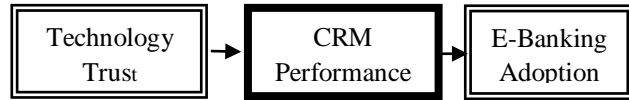


Figure 1: Framework for the relationship between Technology Trust, CRM Performance and E-Banking Adoption

Figure 1 showed the causal relationship between technology trust, CRM performance and e-banking adoption.

## 7. Objectives and Methodology

The main objective of this empirical paper is to investigate the relationship between technology trust and CRM performance, the relationship between CRM performance and e-banking adoption and last but not least to investigate the mediating effect of CRM performance in the relationship between technology trust and e-banking adoption.

675 questionnaires were distributed to the academic staff of three universities in the northern state of Malaysia. Out of this number, 350 were returned, 43 of which were excluded because they contained too many missing values. Thus, a total of 307 questionnaires considered valid and were used for empirical analysis, giving a response rate of 45.5 percent.

## 8. Result

As shown in Table 1, the Cronbach Alphas of the measures were all comfortably above the lower limit of acceptability that is > 0.5. Hence, all the measures were highly reliable.

Table 1. Reliability Coefficients for the Variables in the Study

Variables	Number of Items	Reliability
Electronic banking adoption	6	0.74
Customer relationship management performance	9	0.94
Perceived online trust	9	0.96

Table 2. Regression Analysis on the Influence of Customer Relationship Management on Electronic Banking Adoption

Independent Variable	B	SE B	$\beta$
CRM Performance	0.845	0.049	0.703

Note:  $R^2 = 0.495$ ;  $F = 298.396$ ;  $Sig. F = .00$ ;  $**P < 0.01$

B= Unstandardized coefficient beta; SEB= Standard error of regression coefficient;  $\beta$ = Beta coefficient

With the F value of 298.396 ( $p < .005$ ), indicates that customer relationship management performance is significantly influencing electronic banking adoption. Furthermore, the model is rather strong with customer relationship management performance explaining 49.5 percent of the variation in electronic banking adoption. We also note that the score for  $\beta$  is .70, which confirm that customer relationship management performance makes the highly contribute to the dependent variable (Table 2).

Table 3. Regression Analysis for Factors Influencing Customer Relationship Management Performance (N=307)

Ante- cedents	Standard coefficients Beta ( $\beta$ )	t	Sig.	Colinearity statistics tolerance VIF
Perceived Trust	.408	6.75	.000	.375 2.67

To investigate which antecedents that have the most influence on customer relationship management performance, we used the beta values as showed in the table. Based on the beta values Perceived trust ( $\beta = .41$ ), exercising the influence on customer relationship management performance.

The mediator effect of the customer relationship management performance on the relationship between independent variables and electronic banking adoption were measured based on Baron and Kenny (1986). It shows that the beta coefficients in model 1 are significantly higher than the beta coefficients in model 2. The mediation effects of the customer relationship management performance are also explained by the increase in R square corresponding to the inclusion of the customer relationship management performance into the model. The increase of R square in model 2 explained the increase in the variation in electronic banking adoption by the mediation effect of the customer relationship management performance. With the reference to above table, the results indicate that the relationship between perceived of trust and electronic banking adoption is fully mediated by the customer relationship management performance ( $\beta$  change from 0.395\*\*\* to 0.107).

Table 4. Hierarchical Multiple Regression Analysis on the Mediating Effects of Customer Relationship Management Performance

Dependent Variable	Independent Variables	Std Beta Step 1	Std Beta Step 2
E-Banking Adoption	Perceived of Trust	.395***	.107
	Mediator CRM Performance		.550***
	R2	.38	.52
	R2 Change	.38	.14
	F Change	92.51	86.28
	Sig. F change	.00	.00

Note: Significant levels: \*\*\*p<.00; \*\*p<.01; \*p<.05

(Step 1 refers to regression with the independent of two antecedent factors; whilst Step 2 refers to regression with the mediator variable).

### 9. Conclusion and Recommendation

From the above literature, we can conclude that the technology trust is important for CRM performance and e-banking adoption. Furthermore, CRM performance has a significant impact on e-banking adoption. The analysis result also support the mediating effect of CRM performance on the relationship between technology trust and e-banking adoption.

For the practices, the e-banking services provider must ensure that their online services equipped with trust element for the success of adoption. A cost should be invested to meet the responsibility of the managers and all the staff as required by CRM principles. The management must start thinking about developing brand loyalty, positive word of mouth (WOM) through technological trust

among the customer to support the CRM performance and e-services adoption.

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