

Perception on Credit Cards for E-Payments in E-Government Service in Sri Lanka

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Abstract— *In competitive and complicated context, people look for quick, short and quality services. Government as well needs to provide competitive services by integrating new technologies. In an e-government, a solid and trusted environment is a pre-requisite to ensure the trustworthiness of the payee for the paying bills especially utilities, in foster payment especially through electronic media. The expansion of the Internet has facilitated the attractiveness of this payment instrument. E-commerce and e-government have created new financial needs that in many cases cannot be effectively fulfilled by traditional payment systems. There are plenty of electronic payment systems. Among them, credit card has popularized for paying bills in Sri Lanka.*

further improvements of e-government concept in Sri Lanka.

Keywords— *Credit card, e-government, e-payment, perception*

I. INTRODUCTION

Technology is advancing swiftly, especially in the field of Information and Communication Technology (ICT). This technological advancement has changed the way people live, life pattern and customs such as work, behaviour, talk and all (Gunawardana, 2007; Christos *et al.* 2013; Syamsuddin, 2011). In this kind of competitive and complicated context, people look for quick, short and quality services.

In such a context, government as well needs to provide competitive services by integrating new technologies. When a government uses ICT related applications including World Wide Web applications to offer its services to people, the government becomes to an e-government (Yildiz, 2007). In an e-government, a solid and trusted environment is a pre-requisite to ensure the trustworthiness of the payee for paying bills especially utilities such as electricity, water, rates, telephone etc., in fostering payment especially through electronic media.

The expansion of the Internet has facilitated the attractiveness of this payment instrument, for instance electronic commerce (e-commerce) and e-government have created new financial needs that in many cases cannot be effectively fulfilled by traditional payment systems (Sumanjeet, 2009; Ozkan *et al.* 2010). Teoh *et al.* (2013) and Muhayiddin *et al.* (2011) highlighted that electronic payment means are much safe than traditional means. Electronic payment can be defined as the method used to pay for the purchases of goods and services over the Internet (Amiirah, 2013). Pasupathinathan (2013) noted that electronic payment instruments can be categorized into main

The research question is 'Are there any potential to use these trends as an imperative means for e-payments in an e-government services in Sri Lanka?' The paper aims to examine perception of credit cardholders on using credit cards for e-payment in e-government services through an exploratory inquiry. The literature related to the present investigation is used to develop a framework for the study. Data was collected from a sample of 150 credit card holders in Colombo district and used quantitative method. Result reveals that behavioural elements of credit card holder's perception on credit card for e-payment have significant influence on their perception about e-payment through credit cards. Sri Lanka is moving toward greater e-government adoption interestingly. Accordingly e-payment means also should be taken into consideration, majority of online population in Sri Lanka is yet considered "infants" with a shallow level of Internet knowledge, and this builds up fear of using e-payment. Results of the present study evident that there is a positive trend towards the perception of using credit cards as a mean for e-payment in e-government services. There are substantial potentials to encourage and

three parts namely cash, cheque and card. Credit cards are fallen to card payment mechanism. There are plenty of electronic payment systems such as Payment Service Provider (PSP), Square, Google Wallet, Dwolla, Amazon Payments, 2Checkout, PayPal, Skrill (before Moneybookers), WePay, V.me by Visa, Intuit GoPayment, Serve from American Express, Samurai by Feefighters, Authorize.Net, Worldpay, Eway, Icpay, Braintree, Stripe, Credit card, Charge card, Debit card, e-money, e-cheque. Among them, credit card has popularized for paying bills in Sri Lanka, at the same time credit card has become imperative means of payments among the public in an e-government services (Teoh *et al.* 2013). Central Bank of Sri Lanka (2013) has emphasized that usage of credit card has increased gradually in last decades.

At the end of 2013 total number of card holders in Sri Lanka was 926,949. Total value of transactions was 30,694 Million. At the same time the number of transactions has increased by 10.7 percent and value of credit card transactions recorded a growth 9.4 percent in 2013 in compared with 2012. Accordingly, Central Bank (2013) revealed that the use of credit cards in Sri Lanka has increased due to rapid lifestyle changes and the soaring cost of living, the demand for credit cards and the number of transactions has increased gradually.

This growth will be largely attributing to the improving credit card payment infrastructure in the country, with most of the merchants accepting credit card payments at POS terminals. These cards are positioned in a manner which gives an impression that the cards can be acquired by people from not only the upper class but also the middle income categories. Today credit card industry is highly competitive and almost all the banks are offering credit cards along with Visa International or Master Card.

Sari and Rofaida (2011) state that the respondents for their study have shown a positive attitude towards credit card usage. Perception means the way people think about or understand someone or something and it has several aspects (Schiffman *et al.* 2006). So that customer perception is a main aspect of demand of credit card. A negative perception leads to reduce the card demand. The positive attitudes can help to influence the intention to use (Davis, 1989). Recent studies have suggested that various factors impact over perception about credit card payment for e-

government services. However, such an investigation in Sri Lanka is yet very limited and in its infancy. Thus, this paper aims to examine the perception of credit cardholders on credit cards for e-payment in e-government services through an exploratory inquiry. More specially, following objectives frames the present inquiry.

1. To identify the antecedent conditions to the perception on credit card for e-payment in an e-government environment.
2. To provide some motivating and encouraging factors for policy makers to go further enhancements towards the concept of e-government in Sri Lanka.

This paper is organized into six sections, including the foregoing introduction. Section II explores relevant literature support. Section III presents research methodology. Section IV is devoted to explain result and discussion. Conclusion is offered in section V and finally section VI focuses to limitations and future research directions.

II. LITERATURE AND HYPOTHESES

"On February 28, 1950 A Diners club card, the first multiuse credit card was issued. This marked the beginning of the era of plastic money" (Sudhagar, 2012). As markets mature, credit cards tend to replace cash and checks as the most common payment mechanism. For the first time credit card was introduced to Sri Lanka by commercial banks in 1989. A credit card is a plastic card with a magnetic strip containing data, and is a financial instrument allowing the holder to pay for goods or services on credit and in lieu of cash. Dwarkadas (2011) has defined credit card like "plastic money". It is a convenient solution for money. Ausubel (1991) emphasized that "Credit cards, including store cards and bankcards, serve two distinct functions for consumers: a means of payment and a source of credit". Danes and Hira (2009) described that credit cards should be used for convenience reasons. The importance of credit cards, both as a payment and short-term financing medium to today's consumers is no longer debatable, because of the convenience (Chakravorti *et al.* 2001).

Wickramasinghe and Gurugamage (2009) attempted to understand the credit card use patterns in Sri Lanka. Wickramasinghe and Gurugamage (2012) attempted to identify and assess the effects of credit card users' demographic

about credit cards, and perceived lifestyle outcomes of the credit card usage on credit card usage practices. In their study, they have not discussed about the perception. According to the Technology Acceptance Model (TAM), presented by Davis et al. (1989), they identified that there is a significant relationship between attitudes and intention to use. Thus based on that theory it was able to identify other scholars who have proven the same association. Lin and Wang (2013) have proven that there is a positive association between attitudes and behavioural intentions. Sari and Rofaida (2011) emphasize that there is a positive attitude towards credit cards usage, with high influence of subjective norm, high behaviour control, high intention to use credit cards and card holders used credit cards wisely. So that cardholders' positive attitudes are highly related with cardholder perception. Hence there is a positive and significant effect between behavioural attitudes toward the intention to use credit card. Mansfield et al. (2013); Sudhagar (2012) have mentioned that there is a positive relationship with attitude and perception towards the credit card use. Afakli (2007) also has proven the same relationship. Grounded on the aforementioned arguments, the following hypotheses can be proposed.

H₁ - there is a positive relationship between cardholder's attitudes and credit card holder's perception towards e-payment.

Afakli (2007) in his study states that credit card demand and its usage are depended on consumer perception. According to Clyde (2008), cardholder perception basically determines demand for credit card. At the same time he noted that perception can be altered by providing extra facilities and benefits. So that, most of institutions tend to provide more facilities to their customers. Moreover, popularity of brand name is one of major factors that determine the demand. Interest rates applied for credit cards also affect to change the card holder demand. Huang and Tan (2007) stated that the interest rate and demand for credit card are positively correlated. However Ausubel (1991) suggests that consumers may not even consider the interest rate when making purchases because they do not intend to borrow for an extended period when they make purchases. However interest rate highly affects to change of credit card demand. Amin (2007) suggests that perceived usefulness, perceived ease of use, perceived credibility and the

important determinants to make demand and those encourage customers' intentions to use mobile credit card for e-payments. On a basis of the above evidences, this study proposes:

H₂ - there is a positive relationship between cardholder's demand and credit cardholder's perception towards e-payment.

Khalid et al. (2013) emphasize that the adoption and usage of credit cards is found to be significantly influenced by demographic factors and leads to holder's perception. Gan et al. (2005) has also noted the same. Their research found that the higher income earners, the better educated, older adults, females, married, have more intention to have and use credit card than the other groups. They have considered demographic characteristics. Jusoh et al. (2012) analysis the demographic variables which affect to credit cards perception and attitudes. According to their study the result of t-test has shown that there are no significant differences in credit card practices between male and female working adults. Furthermore one-way ANOVA revealed that there is significant difference in credit card practices with education levels. Arias et al. (2010) described that women, in general, understand credit and know the interest rates of their credit cards with much greater frequency than men and this leads to perception to use credit cards. Drawing a conclusion from the above arguments, this study proposes the following hypothesis.

H₃ - there is a positive relationship between cardholder's demographic characteristics and credit card holder's perception towards e-payment.

Based on the previous studies, it can be identified that there is a significant relationship between satisfaction and perception of credit cardholders. According to Sudhagar (2012) indicates that the facilities offered by card issuing organizations highly impact to cardholders' satisfaction and this satisfaction influence the cardholders' perception for e-payments. Teoh et al. (2013) highlighted the benefits gained by using cards make more satisfaction. Similarly, Dwarkadas (2011) mentioned that services like wider acceptability, discount on purchase and quick processing, popularity and convenience services of bill payments opting have to be increased for further satisfaction. Holder satisfaction affects the card holder's perception for e-payments. If credit card holders have experience

on credit cards, they tend to use credit cards more often without hesitation and fear, so that this again encourages cardholder's perception (Sudhagar, 2012). Based on the above evidences, followings hypotheses are proposed:

H₄ - there is a positive relationship between cardholder's satisfaction and credit cardholder's perception towards e-payment.

H₅ - there is a positive relationship between cardholder's experience and credit cardholder's perception towards e-payment.

III. METHODOLOGY

An extensive review of the literature dealing with the present investigation suggests that demographics factors, credit card experience, satisfaction, attitudes and demand towards the services have a significant influence over the perception on credit card for e-payment. As an outcome of this review, the conceptual framework and five hypotheses was derived. Figure 01 illustrates the hypothesized relationships between the variables. 150 credit cardholders who were selected from ten commercial banks in Sri Lanka provided the data for the specific structure questionnaire used in the survey. The questionnaire basically contains questions relating demographic information as well as five point likert type questions which focused on key research variables.

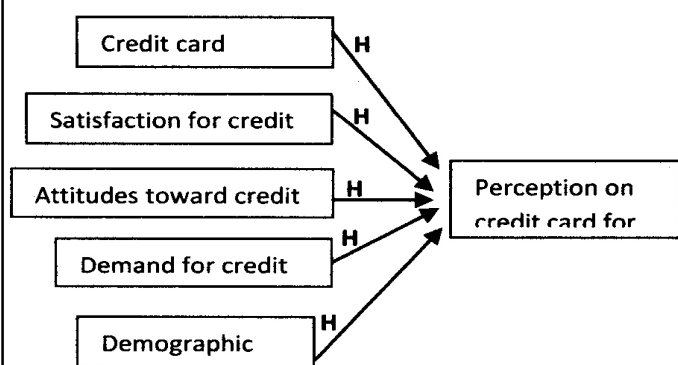


Figure 01 – Conceptual framework

The total number of commercial banks located in Colombo District is 24 as on February 2013 (Central Bank of Sri Lanka, 2013). There are 554 commercial bank branches belongs to various banks. Out of 554 bank branches, 10 were selected for the study by using convenient sampling method. Then 15 respondents were taken from each selected 10 branches (15*10=150), so that sample size was 150. Following Table 01 shows the sample framework.

Table 01 – Sample framework

Bank	Ownership	
	State	Private
BOC	2	-
Peoples Bank	2	-
Commercial Bank	-	1
Sampath Bank	-	1
HNB	-	1
NDB	-	1
Nation Trust Bank	-	1
HSBC	-	1
Total	4	6

Of 150 respondents, 77 were male and 73 were female. With respect to the age of the respondents, the majority (30.7 percent) is in 25-30 age groups. Each category, however, includes considerable number of respondents and it makes favourable ground for analysing the main research variables on the different age groups. The respondents were identified according to their occupation. Accordingly, the majority was Government employees (34 percents) while only 9.3 percent were professional. The highest formal qualification acquired by the respondent's shows that 39.3 percent have studied up to high school while 32 percent, 5.3 percent and 3 percent have acquired higher qualifications, basic degree, post graduate qualification and PhD respectively.

Table 02 – Demographics Characteristics

Demographic	Categories	Frequency	Total
Gender	Male	77	150
	Female	73	
Age	18-25	25	150
	25-30	46	
	30-40	42	
	40-50	18	
	Above 50	19	
Occupation	Govt. employed	51	150
	Private	46	
	Self employed	21	
	Student	18	
	Professional	14	
Education	High School	59	150
	Graduate	48	
	Post Graduate	8	
	Diploma	30	
	PhD	5	

To ensure the internal consistency of the survey questionnaire, reliability test was performed with Cronbach's alpha. As Table 03 shows, each variable

has received alpha value well over the general cut-off value of 0.7 (Hair et al. 2006).

Table 03 – Reliability statistics

Antecedent	Cronbach's alpha
Attitudes toward credit cards	0.710
Demand for credit cards	0.849
Satisfaction for credit cards	0.853
Credit card Experience	0.724
perception on credit card	0.755

In data analysis, descriptive statistics, independent samples t-test and ANOVA, correlation analysis and multiple regression analysis were employed. All analysis was carried out through Statistical Package for Social Sciences (SPSSv16).

V. RESULT AND DISCUSSION

Correlation analysis which was performed to examine the relationship between credit card experience, satisfaction, attitudes and demand with the perception reveals that each of predictor variables positively relates the perception ($r_1=0.69$, $p_1<0.01$; $r_2=0.80$, $p_2<0.01$; $r_3=0.80$, $p_3<0.01$; $r_4=0.83$, $p_4<0.01$). Thus, first four hypotheses of the study are supported and accepted. To test the demographic factors effect on perception, independent t-test and ANOVA were utilized. Result of t-test suggests that there is no significant difference between male and female on the perception of credit cards on e-payments ($t = 0.61$, $p > 0.05$). Result of ANOVA further revealed that there is no significant impact from age, occupation and education to perception of the cardholders ($F = 1.343$, $p > 0.05$, $F = 2.549$, $p > 0.05$, $F = 1.878$, $p > 0.05$). So that, final hypothesis is not supported. Except the demographic characteristics credit card experience, satisfaction, attitudes and demand are positively correlated with the perception.

Table 04 – Multiple Regression results

Variable	Un standardized Coefficients		Standardized Coefficients	T	Sig.
	Beta	Std. Error	Beta		
Experience	.090	.054	.096	1.676	.096
Satisfaction	.249	.086	.222	2.906	.004
Attitude	.259	.072	.269	3.597	.000
Demand	.354	.062	.403	5.719	.000

Dependent Variable: Perception

Multiple regression analysis was carried out to determine the overall impact of the predictor variables on perception. Results were summarized in Table 04. According to results, predictors of

satisfaction, attitude and demand are positively affected for the dependent variable. Thus the above tested hypotheses are proven with the results of multiple regressions. The predictor, experience is significant at the 10% significant level, so that the hypothesis was accepted and supported to perception. Hence this study revealed that above four antecedents is important and make influence on the perception to use credit cards. The Adjusted R Square value was 0.774 and the used model was significant ($F=64.869$, $P=0.000$). This suggests that the behavioural elements of credit card holder's perception on credit card for e-payment are explained 77.4% of the variance of credit card perception.

V. CONCLUSION

Sri Lanka is moving toward greater e-government adoption interestingly. Accordingly means of e-payment have become an issue. Through this study it could be found that there is a positive perception on credit card use for e-payments in e-government services. Thus e-payment methods should be taken into consideration, at the same time the majority of online population in Sri Lanka is yet considered "infants" with a shallow level of Internet knowledge, and this builds up fears of using e-payment. However, results of the present study evident that there is a positive trend towards the perception of using credit cards as a mean for e-payment in e-government services. Hence it is worth to take hand some promotional campaigns to improve the influencing factors further. Thus, there are substantial potentials to encourage and further improvements of the e-government concept in Sri Lanka.

VI. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The most of the credit card users live in the Colombo district, as it is the commercial capital. Due to this reason, study was limited to one district of the country. It was examined few aspects of the perception on credit cardholders towards e-payment in e-government services in Sri Lanka. So that, it is worthwhile to note that to provide a better generalization, it should consider more aspects of perception and should expand the study area as much as possible.

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