



## **ELECTRONIC TRANSACTION PLATFORMS AND THEIR SUPPORT FOR SMALL SCALE TRANSACTIONS: REVIEW, SURVEY AND SUGGESTIONS**

*S. Krishanthan\**

*Faculty of Engineering, The University of Ruhuna, Sri Lanka*

### **INTRODUCTION**

With the emergence of information technology, electronic transaction systems are increasingly used in businesses. Compared to traditional transaction platforms, e-transactions systems provide more flexibility with improved cash flow, reduced cost and improved security. In this covid-19 pandemic era, most people rely on e-transaction platforms. There are different e- transaction platforms with their own advantages and disadvantages. There are many e-transactions available in Sri Lanka. Famously used platforms are debit cards, credit cards, mobile cash, E- wallets, UPI apps and coupons. Some of these platforms have been used for decades and some of them have been introduced in recent years. These platforms can be different from each other in flexibility, reliability, efficiency, accessibility and ease of use.

The advancement of e- transactions has enabled people to use these systems for every level of transactions varying from small scale to large scale. However, the support for each level starting from small to large does not seem to vary sufficiently in these systems. This study focuses on the feasibility of these e-transaction systems to support small-scale transactions. Small level transactions are increasingly performed in recent times. However, it is identified that these transactions are not cost justified while it is hard to perform them. This study is based on a review and a survey carried out to identify the feasibility of these transactions in the Sri Lankan context. The study aims to identify the factors mostly associated with the small-scale transactions in e-transaction systems and the consumer perception on them. This study also provides a suggestion to simplify small scale e-transactions.

### **METHODOLOGY**

Researchers have carried out comprehensive reviews on multiple e-transaction methods and their features based on infrastructure, regulatory and legal issues, social and cultural challenges and security. This review mainly incorporated research articles, internet sources and conference papers to evaluate different aspects of debit cards, credit cards, E-cash, E-wallet, mobile cash and coupons. The review also incorporated relevant secondary sources. The research compared different e-transaction platforms based on previous research findings.

The study also involved a survey focusing on consumer perceptions on the small-scale electronic transactions. The survey was carried out using an electronic questionnaire and the questions were prepared using 5-point Likert scale. The target population included the people who use e-transaction platforms in Sri Lanka. The sample which was 174 in size was selected using the convenient sampling approach. The questionnaire included questions to evaluate the flexibility, ease of use, security and overall satisfaction associated with small scale transactions. After cleaning and preprocessing the collected data, a detailed descriptive analysis was carried out. Relevant demographic data were collected from the first set of questions. Next, they were inquired whether they perform online transactions or not. The contributors who perform online transactions were requested to answer the rest of the questions. The questionnaire checked the frequency of the online transactions performed by the user. Next, the modes of online transactions were identified. The next set of questions were related to the nature of the small-scale transactions they performed. Initially, the small transactions they had performed were investigated along with the modes used to perform such transactions. A set of 5-point Likert scale questions were used to examine the flexibility of the present online transaction modes of small-scale transactions.



Subsequently, the contributors' view on the charges charged by the vendors was inquired. Next, the contributors' perspectives on registration formalities, security level expectations, and the requirement of an alternative methodology were checked. Finally, they were given an example of a small-scale transaction and asked whether they liked to perform the transaction.

**RESULTS AND DISCUSSION**

The features of the e-transaction systems can be discussed under 7 major areas namely flexibility, reliability, security, privacy, efficiency and future expansion. There is a large number of research done on these aspects. Flexibility is a critical component that decides whether a customer would use the relevant e-commerce system. Also, the system should always be reliable. Security of electronic transactions is also a major concern among the consumers. Therefore, we can see that different approaches like the implementation of two-way authentication, biometric integration, etc. are followed to increase the security level of the system. Moreover, there should be privacy in an e-transaction system where the customer details should be encrypted and protected. Efficiency is another important fact that a customer takes into consideration. If the e-transaction system is not efficient it could lead to the dissatisfaction of the customer. Integrating scalability could help expand the operations of the system when the customer base increases. User friendliness and shorter learning curve always enhance the usability of an e-transaction system. A comparison of these aspects of different e-transaction systems is summarized below.

Table 1: Comparison of electronic transaction approaches

	<b>Reliability</b>	<b>Efficiency</b>	<b>Security</b>	<b>Privacy</b>	<b>Flexibility for small transactions</b>	<b>Expansion</b>	<b>Ease of use</b>
<b>Debit card</b>	Good	Good	Fair	Fair	Fair	Good	Poor
<b>Credit card</b>	Good	Fair	Fair	Fair	Poor	Good	Poor
<b>E-cash</b>	Poor	Poor	Fair	Good	Poor	Poor	Fair
<b>E-Wallet</b>	Fair	Fair	fair	Fair	Poor	Good	Poor
<b>Mobile-Wallet</b>	Fair	Fair	Fair	Fair	Poor	Good	Poor
<b>Coupons</b>	Poor	Poor	Poor	Fair	Poor	Poor	Fair

Many studies have been conducted regarding electronic transaction systems in recent times. Many of them are surveys meant to identify the challenges and adoption practices in e-transaction systems.

Ul, F., Mehraj, Ahmad, and Assad (2017) have conducted a compendious study of online payment systems, their past development, present impact on the business sector and the future considerations of electronic transaction systems. Online payment systems are increasingly used for day-to-day tasks as well as online purchases. However, the adoption and deployment of several rising technologies could challenge the customers to adapt to secure online e-transaction systems at present as well as in near future. The enhancement of different technologies helped to implement secure e-transaction systems, but to yield maximum benefits, integrating these systems into financial and telecommunication infrastructure should be considered. Also, the establishment of a common standard for a variety of service providers and the improvement of compatibility with a large number of customers could facilitate



proper adoption and expansion of these systems (Saxena, Vyas, Kumar, & Gupta, 2019). Masihuddin, Islam Khan, Islam Mattoo, and Olanrewaju (2017) have pointed out in their study that payment gateways still have some security concerns despite their growing popularity and large-scale use in businesses. This could result in vulnerable systems that will diminish customer satisfaction.

Micro-payment systems were not established by any international financial organization. Also, they were not integrated into the existing financial systems or tools in terms of infrastructure. (Zon-Yau Lee, et al.,2001). However, these systems are gradually getting integrated into financial institutions. Moreover, most people are moving to cashless transactions due to better transparency, scalability and accountability. This movement will eventually compel more merchants to accept and integrate e-transaction systems into their businesses (Ramya, Sivasakthi, & Nandhini, 2017).

There are few research studies conducted in the Sri Lankan context under this topic. Benefits, trust and compatibility are the key antecedents for the positive impact on consumer perceptions on e- transaction systems. Furthermore, customer expectations regarding security and self-efficacy of these systems are not that much significant (Kulathunga & Ekanayake, 2019). According to Rajapakse (2017), customer awareness on these systems must be increased focusing on the benefits they receive. User friendliness and the ease of use are not enough to increase the adoption rate of internet banking. However, previous studies have not investigated how the e-transaction systems could support small scale transactions.

The second part of this research evaluated the consumer perception on the small-scale electronic transactions using an electronic survey involving 174 respondents. According to the descriptive statistics, 66.1% respondents are male and 96% of them are aged below 30. Also, 23.6% of them are employed and 59.9% have a monthly income above Rs.10,000. Only 7% use e- transaction systems daily whereas 58.1% use them less frequently and 25.29% have not performed any e- transactions. According to the responses, only 42.3% have done transactions below Rs.100 using e-transaction systems. Also, around 50% believe that debit card is the ideal approach for small scale transactions.

The survey also evaluated the support given by the current e-transaction systems to the small-scale transactions from 6 dimensions namely flexibility (A), consumer satisfaction of vendor and intermediate charges (B), ease of use (C), willingness to adapt (D), level of security (E) and requirement for alternative approaches (F). Results are summarized below.

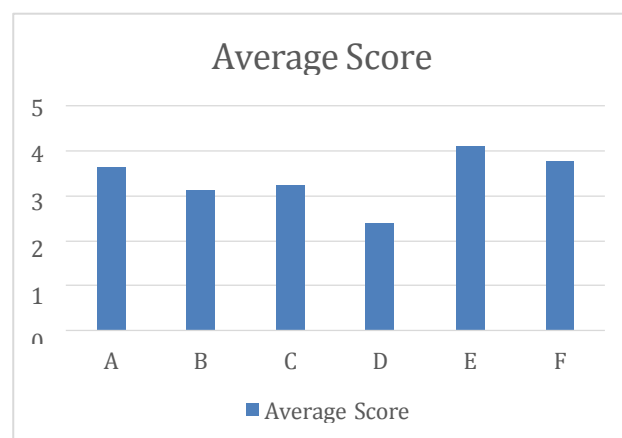


Figure 1: Average score of the dimensions considered in the survey

According to the calculated average scores, majority of the respondents believe there is



adequate flexibility, simplicity, high security and fairness in charges in current systems. However, willingness to adapt these systems are somewhat less compared to other dimensions. Also, the majority of respondents believe there should be an alternative method for the small scale online transactions in addition to the existing transaction methods. Respondents also suggested authority policies for these systems, scaled charges based on the value of transaction, biometric integration (fingerprint, face ID etc.) and integrated centralized systems as further improvements.

### **CONCLUSIONS/RECOMMENDATIONS**

Electronic transaction systems are widely used at present. Due to Covid-19, many people and businesses perform their transactions on these platforms. Usage of e-transaction systems are not limited to medium or large-scale transactions now and they should be extended to support small scale transactions. Even though there are many studies conducted on e-transaction systems, there is little to no research done about the support of these systems for small scale transactions.

The following approach can be suggested to simplify the small-scale e-transaction process. The suggested approach takes place between the website vendor and the customer while there is no bank as the direct mediator. When the customer buys from the website, the website sends an auto generated e-mail to the vendor. Then the relevant amount is debited from the recharge balance of the customer and the vendor stores information regarding the transaction. Then, the initial transaction between the customer and website ends. Since this is a small-scale transaction, the vendor does not credit the amount to the website account immediately. The relevant amount is credited to the website's bank account after it reaches a certain threshold amount. Here, the security is more or less the same as the transactions take place with the bank as the immediate mediator. The initiation of this method gives many advantages to the customer. For instance, transactions can be performed faster and the students below 18 can use this for their educational purposes rather than using their parents e-payment systems. Also, this can be used to make payments on unreliable websites. It is also important for telecommunication industry as it can achieve a considerable income because small amounts are collected from large number of websites. Furthermore, it is advantageous for websites because the number of customers increase as the transaction is done directly with the vendor. This is an added advantage for new websites because this system will increase the user confidence in the website and the number of customers will increase as there is adequate security. This method can also be incorporated as an alternative for small-scale debit cards, credit cards, E-cash, Mobile wallet, and coupon transactions. For these transactions, the consumer makes a payment to the phone number of the seller. When the amount in the consumer phone number account reaches the threshold value, the vendor transfers it to the seller's bank account. This method can be expedited by introducing a vendor app.

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