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An Empirical Investigation of Factors Influencing Customer Service Delivery of ATM Users in Malaysia: Kano’s Model Approach

1Tasmin Rosmaini, 1Alhaji Abubakar Aliyu, 1Mudashir Gafar, 1Musa Alkali Abubakar, 1Sulaiman Mohammed Lame and 2Josu Takala

1Department of Technology Management, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, 86400, Parit Raja, Batu Pahat, Darul Ta’zim, Johor, Malaysia
2Department of Production, University of Vassa, City of Vassa, Finland

Abstract

Over the last few years, Malaysian banks spent millions of Ringgit on the introduction of Automatic Teller Machine (ATM). The adoption of these services is still quite low at the urban areas. Thus, identifying basic factors to improve the level of ATM adoption around Malaysia is crucial. This paper is concerned with an empirical investigation of behavioural factors that could predict the successful implementation of ATM in Malaysian Banking Industry through the applications of Kano’s Model. This study modified the concept of Kano’s Model within the context of ATM. In consequence, the research was able to identify the factors that enhance service delivery via ATM in Malaysia. Structural Equation Modelling (SEM) was used in order to examine and analyse the fitness of the model such as specification, estimation, evaluation of fitness, modification and interpretation. Security, Convenience and Cost were the main concerns reported by the respondents which influence service delivery in ATM banking. Pursuant to the above, it can be concluded that behavioural factors such as security, convenience and cost are the main drivers of service delivery in using ATM. Hence, the implications of this research are further explored.

Key words: Mobile banking, Banks, Behavioural Factors, Customer Satisfaction and Kano’s Model

Introduction

Malaysian banking industry has been consistently growing in terms of capital base, size and retail banking products such as electronic banking services. Today, Malaysian banks were able to transform from a relatively closed system based on traditional banking activities to a more open, effective, and competitive system that is able to offer an extensive range of retail products and services (Ramayah et al., 2003). Extensive competition, globalization and deregulation have enticed the banking industry in Malaysia through improving its service infrastructure, within which banks play a very important role by introducing a new product/service, strategic marketing and research techniques (Poon, 2008). Nowadays, banks consistently innovate and improve their current services so as to achieve greater success and wider coverage in order to achieve service delivery to their customers and to improve their business performance.

Customer service delivery has become a critical component in running a successful electronic banking services in today’s banking industry (Akinlolu & Oyesola, 2008; Kaleem & Ahmad, 2008). Thus, the provision of high-quality service delivery will go a long way in enhancing customer retention, attracting new customers, increases productivity, market share, and financial performance. electronic banking service such as ATM, mobile banking and online banking are becoming a highly favourable distribution channel among bank customers in Malaysia (Kadir et al., 2011; Kumar et al., 2010; Poon, 2008). This means that, customer service delivery is becoming a catalyst for survival and the necessity for banks to provide world class service delivery, so as to build ongoing and successful relationships with their customers. Base on the above, this paper aims at identifying some behavioural factors that enhance service delivery for ATM services. The research was intended to examine the extent to which customer service delivery enhances customer relationships on the ATM users in Malaysia. Also, this study attempts to bridge the gap left by existing body of literatures by coming up with a

Corresponding Author: Alhaji Abubakar Aliyu, Department of Technology Management, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, 86400, Parit Raja, Batu Pahat, Darul Ta’zim, Johor, Malaysia
E-mail: dogoalhaji@yahoo.com
unique model that will stress the importance of customer service delivery in sustaining a strong relationship with ATM customers within the context of Malaysian banking industry.

Literature Review:

The research framework of this study is based on the adaptation of Kano’s Model, first developed by Professor Kano in 1984 (see figure 1). Professor Kano suggests three key beliefs (the must be or basic needs, the one dimensional or performance needs and the attractive or excitement needs) that could influence and satisfy customer need.

Fig. 1: Slightly Modified Kano’s Model (Source: Tasmin, 2012).

The must be or Basic Needs:

These are the king of needs that customers become dissatisfied when performances of such service are low. Conversely, even with the high performance of the must be or basic needs, customer satisfaction does not rise above the neutral level of satisfaction. A very good example in the context of ATM is the security level, meaning that having secured ATM banking transaction in terms of location, systems and other related issues do not raise the level of customer satisfaction. Whereas, absence of it will cause customer dissatisfaction (Tan & Pawitra, 2005).

The One Dimensional or Performance Needs:

These are the kind of needs that if fulfil, they lead to high customer satisfaction. Conversely, if these needs are not satisfied, customers become dissatisfied due to cost (bank charges). Electronic banking is likely to be the performance need, whereas low bank charges in terms of cost related may result in high customer satisfaction (Amoah-mensah, 2011).

The Attractive or Excitement Needs:

These are the kind of needs that customer has satisfaction simultaneously with the increase of those products/services. However, the attractive or excitement needs do not decrease in customer satisfaction, because of the decrease in attributes needs. For example, with the convenience of electronic banking, customer may feel dissatisfied if the ATM does not have some attribute of conveniences in terms of extra function keys, 24/7 service and cash deposition. Conversely, if the ATM does provide such additional service customers will be highly delighted and satisfied (Xu et al., 2009).

This means that in a competitive environment, satisfying basic needs and performance needs of an organization (banks) could not only satisfy the needs of customers. As such organization have to streamline their
strategy towards enhancing service delivery that will excite and over satisfy the customer’s need (Baytollah et al., 2012; Ankit, 2011; Musiime & Biyaki, 2010). Hence, this vindicated the need of choosing Kano’s Model for this kind of research. In essence, factors that greatly influence customer satisfaction can easily be identified and can also lead to designing various retail bank products/service that might suit customer needs by simply examine the major factors that influence customer satisfaction.

Research Framework:

As discussed above, the research framework proposed for this study is not exactly the same as the Kano’s model (see figure 2 below). This study modified the concept of the Kano’s Model within the context of ATM banking. In consequence, the research was able to identify the factors that enhance service delivery via ATM in Malaysia. The following framework explains each linkages and gaps further identified in the review of literature.

**Fig. 2:** Conceptual Research Model (Source: Literature Survey, 2013).

**Cost (Bank Charges):**

A cost is considered to be one of the factors that influence the consumer service delivery towards brand switching and adoption of innovation (Adesina et al., 2010; Aliyu, 2012; and Tasmin et al., 2012). Also, the Wallis Report in 1997 states that for consumers to use new technologies, the technologies must be reasonably priced relative to alternatives. Otherwise, the acceptance of the new technology may not be viable from the standpoint of the consumer. Thus, the following hypothesis is proposed.

**H1:** Cost (Bank Charges) has a significant and positive influence on ATM Banking.

**Convenience:**

Convenience has been identified by several studies as an important adopting factor of electronic banking services (Alam et al., 2010). Thus, ATM service provides a higher degree of convenience that enables customers to have access to their banking transaction at all times around the globe. Nevertheless, the ease of access to electronic banking is perceived as a measure of relative advantage (Al-hawari et al., 2005; Khan, 2010). Today, convenience is considered to be one of the influential factors of the customer service delivery of ATM services. As such, it could be perceived that convenience has a significant influence on customer service delivery via ATM. As such the following hypothesis is proposed:

**H2:** Convenience has significant and positive influence on ATM Banking.

**Security:**

Security is one of the very important factors in determining the decision of consumers to use ATM services (Tafadzwa et al., 2012; Olatokun, 2009). Cooper (1997) identifies the level of risk as an important characteristic from a consumer's perspective on the adoption of innovation. Aliyu et al., 2012 are of the view that security concern among customers is the top ranking obstacle for the non adoption of electronic banking. This means that ATM services will not entice and satisfy the need of customers in Malaysia unless it is considered to be safe and secure by the customers. Hence, the following hypothesis is proposed:

**H3:** Security has a significant and positive influence on ATM Banking.
ATM:

Automated Teller Machine (ATM) is a computerized telecommunications device that provides the customers with access to financial transactions in a public space without the need for a human clerk or bank teller. ATM services can be performed 24 hours a day, 7 days a week and on most modern ATM’s the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smartcard with a chip that contains a unique card number and some security information, such as an expiration date and serial number (Khan, 2010; Olatokun, 2009).

Today, ATMs are placed not only near or inside the premises of banks, but also in locations such as shopping malls, airports, grocery stores, petrol/gas stations, restaurants, cinemas, club, hotels, churches, Mosques, bus station, train station or any place where large number of people may gather. Hence, the below hypothesis was proposed.

H₄. ATM services have significant and positive influence on customer service delivery.

Research Methodology:

A quantitative study using a paper-based questionnaire was conducted in order to measure empirically and then test the relationships between variables identified through a comprehensive literature review of ATM and behavioural factors such as cost, convenience and security. The 32 items were divided into four parts, (ATM, cost, convenience and security). The study’s main items were measured using a Five Point Likert Scales, ranging from 5—strongly agree to 1—strongly disagree. The questionnaire also included a fifth part containing demographic data related to customers’ gender, education and age. This study involves convenience sample of people from the students of University Tun Hussein Onn Malaysia who are customers of various banks were chosen as research subjects. A total of 500 questionnaires were distributed, of which 335 questionnaires were usable after the cases with missing data were eliminated, yielding a response rate of 67 percent. The survey instrument consisted of measuring five factors (cost, convenience, security, ATM and customer service delivery) that were identified from the literature.

Findings and Discussion:

Confirmatory factor analysis was conducted on the entire construct to determine the remaining measures which indicated the validity, un-dimensionality and reliability of the measurement model prior to modelling the structural equation model. The measurement of correlation indicates the strength of the relationship between the exogenous construct, mediating construct and endogenous construct (Ganguli & Roy, 2011; Al-majali, 2011).

Fig. 3: Factor Loading and Correlations for all Items of the Respective Construct.
Table 1: Summary of Fitness Index for the Measurement Model CMIN.

<table>
<thead>
<tr>
<th>Model</th>
<th>CMIN</th>
<th>DF</th>
<th>P</th>
<th>CMIN/DF</th>
<th>GFI</th>
<th>NFI Delta</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>658.675</td>
<td>353</td>
<td>.000</td>
<td>1.866</td>
<td>.860</td>
<td>.929</td>
<td>.55</td>
<td>.055</td>
</tr>
<tr>
<td>Saturated model</td>
<td>.000</td>
<td>0</td>
<td>.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence model</td>
<td>4741.537</td>
<td>406</td>
<td>.000</td>
<td>11.679</td>
<td>.175</td>
<td>.000</td>
<td>.195</td>
<td></td>
</tr>
</tbody>
</table>

The fitness indexes for the model are assessed in Table 1. The discriminate validity failed if the correlations are above 0.85, while in this case all the correlations are below 0.85 as it could be seen from Figure 3, which means the discriminate validity is achieved. The CFA constructs (Table 1) produced a relatively good fit as indicated by the goodness of fit indices, such as a CMIN / def ratio (<5); p-value (>0.05) and Goodness of Fit Index (GFI) are all approaching 1, while the root mean square error of approximation (RMSEA) values of less than .08 (< .08); the Cranach’s alpha values are all above of 0.6 which means validity is achieved. The factor loading are newly developed scales, meaning that the factor loading of an item should be 0.5 or higher (Al-majali, 2011; Zainudin, 2012).

Therefore, after removing the items with factor loading less than 0.5, there are 4 items usable to measure the significance of COST on ATM Banking. There are also 7 items to measure the significance of Customer Service Delivery (ACSD) on ATM, while items like Security (SEC), Convenience (CONV) and ATM (ATMS) remains on change because the factor loadings are above 0.5 as it could be seen from Figure 3. This is a reflection that the measuring items provide a reliable measure of internal consistency. The factor loading for all items in Figure 3 are above 0.5. Thus, no more item deletion is required for this measurement model (Zainudin, 2012 & Schreiber, 2006).

Fig. 4: The Standardise Factor Loading for Each Component of Mobile Banking Construct.

Table 2: The Summary of Fitness Index for the Measurement Model CMIN.

<table>
<thead>
<tr>
<th>Model</th>
<th>CMIN</th>
<th>DF</th>
<th>P</th>
<th>CMIN/DF</th>
<th>GFI</th>
<th>NFI Delta</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>819.140</td>
<td>389</td>
<td>.000</td>
<td>2.106</td>
<td>.838</td>
<td>.832</td>
<td>.903</td>
<td>.063</td>
</tr>
<tr>
<td>Saturated model</td>
<td>.000</td>
<td>0</td>
<td>.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independence model</td>
<td>4875.978</td>
<td>433</td>
<td>.000</td>
<td>11.209</td>
<td>.174</td>
<td>.000</td>
<td>.000</td>
<td>.190</td>
</tr>
</tbody>
</table>

The values for the level of acceptance of fitness indexes assessment in table 2 below show that RMSEA < 0.77, GFI is approaching 1, CFI is approaching 1, and Cmin/DF < 3, which are within the acceptable level. Therefore, ATM Banking Standardized Model (figure 4) is considered as appropriate and has a good fit. The path analysis summary shows that the regression coefficient of Cost and ATM values on customer service delivery are significant for the sample, where the p - value for ATM banking is 0.00. Meaning that, Cost factor is a significant predictor for customer service delivery via ATM banking as the mediator of customer service.
delivery. This finding conforms with the studies done by Kadir et al., 2011. Table 2 shows the goodness of fit of generated or re-specified structural model which is better compared to the hypothesized model.

**Hypotheses Testing:**

Hypotheses 1 and 4 are supported, while hypotheses 2 and 3 are not supported, which indicated that security and convenience have no direct effect on ATM banking on customer service delivery. Instead, customers attach more value to the cost factors which have a direct effect on ATM banking, while on the same vein, ATM banking has a direct effect on customer service delivery. Thus, from the result of the hypotheses testing, the study has proven that the constructs cost has a strong evidence of customer satisfaction via ATM banking as the mediator linking the relationship between ATM banking and customer satisfaction.

### Table 3: Hypothesis Testing for the Casual Effect of the Entire Construct.

<table>
<thead>
<tr>
<th>Hypothesis testing</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMBANK &lt;--- COST</td>
<td>.755</td>
<td>.169</td>
<td>4.475</td>
<td>***</td>
<td>Supported</td>
</tr>
<tr>
<td>ATMBANK &lt;--- CONVNT</td>
<td>.188</td>
<td>.096</td>
<td>1.954</td>
<td>.051</td>
<td>Not Supported</td>
</tr>
<tr>
<td>ATMBANK &lt;--- SECRTY</td>
<td>.227</td>
<td>.104</td>
<td>2.183</td>
<td>.029</td>
<td>Not Supported</td>
</tr>
<tr>
<td>SERDELIV &lt;--- ATMBANK</td>
<td>.871</td>
<td>.116</td>
<td>7.373</td>
<td>***</td>
<td>Supported</td>
</tr>
</tbody>
</table>

***Indicate a highly significance at< 0.001

**Conclusions and Recommendation:**

This paper proposed a conceptual model that was empirically validated by perceptual data collected from the customers of Malaysian banks. The results of the survey provided strong empirical support for two hypotheses of the relationships between the constructs as it can be seen from table 3, while the final model highlights the significant relationships in bold (see figure 3). The research provides empirical evidence about the relationships between cost, convenience, security, ATM and customer service delivery, which had been speculated upon, but about which there has been either no or limited empirical evidence found in previous researches. This research provides the first investigation into conceptualizing such relationships in the ATM service within the context of Malaysian banks. Essentially, this study systematically developed a model of customer service delivery that are mentioned in the literature and then empirically tested the model in the context of ATM banking in Malaysia. Evidence about the relationships between ATM, cost, convenience, security and service delivery was produced. The findings of this paper confirm the literature on the importance of ATM to customer service delivery and show that one of the behavioural factors positively influences service delivery.

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