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Application of Kano’s Model Approach in Mobile Banking and Customer Service Delivery in Malaysia: An Empirical Investigation

Tasmin, R, Alhaji Abubakar Aliyu, Sulaiman Mohammed Lame, Mudashir Gafar and Josu Takala

Department of Technology Management, Faculty of Technology Management and Business, University Tun Hussein Onn Malaysia, 86400, Parit Raja, Batu Pahat, Darul Ta’zim, Johor, Malaysia

Department of Production, University of Vassa, City of Vassa, Finland

ABSTRACT

The purpose of this study is to identify factors that are influencing customer service delivery of mobile banking services in Malaysian banking industry. The study also aimed at coming up with a new model describing customer service delivery. This study modified the concept of Kano’s Model within the context of mobile banking. In consequence, the study was able to identify the factors that enhance service delivery via Mobile banking in Malaysia. The study employed some hypotheses in order to guide the research in achieving the overall aim of the research as well as testing the stated hypotheses by using Structural Equation Modelling (SEM). Behavioural factors such as “security, convenience and cost” were the main concern of the respondents towards customer service delivery. In other words, the study reveals that “convenience and cost” are the major drivers of customer service delivery of mobile banking in Malaysia. In addition, using the mobile banking service context, the study discovered that there is a strong empirical evidence for measuring customer satisfaction with electronic banking services.

Key word: banks, behavioural factors, mobile banking, customer satisfaction and Kano’s model

Introduction

An advent of information and communication technology, deregulation and extensive competition within the banking industry have drastically transformed the landscape of the banking industry (John & Kaka, 2011; Aliyu et al., 2012a; Dutta & Mia, 2010). Thus, banks are even more interested to enhance their understanding of consumer behavioural factors that influence customer’s satisfaction, for them to meet up with the current challenges (Sathy, 1996; Services, 2010). It has been documented that most studies in electronic banking services in Malaysia have largely been conducted in the context of Internet banking (Rouibah et al., 2011; Ndubisi & Sinti, 2006). However, this study contributes to this research area by exploring the factors that influence customer service delivery on mobile banking delivery channel. The primary objective of this paper is to examine the factors that enhance customer satisfaction by using factors such as security, convenience and cost of the mobile banking services in Malaysia. The research implications will assist the banking industry in understanding consumers better and making justified marketing decisions, which will lead to more loyal customer and hence loyalty leads to attracting more customer, expansion of business and increase in net profit (Al-hashash & Bahzadi, 2008; Amoah-mensah, 2011; Floh & Treiblmaier, 2006; Penang & Kheng, 2010). In addition, the research findings will make a contribution to the theoretical consumer behaviour modelling by modifying Kano’s model to a new application area that may give new insights into the model. Thus, the study contributes both to practice and theory.

Customer Service Delivery:

Customer service delivery has been defined in different context and has divergent views, some scholars are of the view that customer service delivery is the quality of services render to the customer, while others were of the view that customer satisfaction should be on the quality of the goods or product (Aliyu et al., 2012b; Joseph & Mcclure, 1999; Kadir, et al, 2011; Kumar et al, 2010; Musiime & Biyaki, 2010; Peggy & Johne, 2007). Customer service delivery relies on the ability of the organization to determine customers’ requirements and then meet these requirements. The quality of services performed can only be assessed during or after...
consumption (Amoah-mensah, 2011; Ganguli & Roy, 2011; Zhengwei, 2012). Research has shown that the more comprehensive and personal the electronic services are, the more loyal to patronise or repeat transaction by the customers (Al-sukkar, 2005; Floh & Treiblmaier, 2006). This development has led to the rise of service development in the past few decades. Thus, different models attributed to service delivery are developed by various scholars, such as Kano’s model.

Research Framework (Kano’s Model):

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). The Kano’s model of customer satisfaction seeks to explain how assigning priorities to operational objectives may result in lasting improvements in customer service delivery (Saeidipour et al., 2012; Shen, et al., 2009). Essentially, the Kano’s model is used for the classification of product and services based on understanding wishes and the way it affects customer’s satisfaction (Xu et al., 2009). Kano (1984) suggests a model that helps researchers distinguish between three types of product/service requirements which influence customer satisfaction in different ways when met (Matzler & Hinterhuber, 1998). Thus, the Kano’s model is viewed in the perspective of mobile banking service via customer service delivery (see figure 1).

In addition, Professor Kano established that for effective customer satisfaction, organisations should make sure that the level of satisfaction of all the three types of product/service should meet the customers’ requirements and not only what the customer states (Alroaia & Ardekani, 2012; Matzler et al., 2010). The essence of choosing the Kano’s model in this study is because, the model could provide a unique opportunity for understanding the impact of mobile banking on customer service delivery and identify the categories of behavioural factors to be managed. Hence, this model shows the best way for putting the fundamental principles of good behavioural factors in place and continually expanding and enriching that set of principles which makes it easy to apply in different situations. The study considers mobile banking as one of the major tools of interaction with customers, while behavioural factors such as security, convenience and cost are classified as banking capabilities at the root of effective customer service delivery.

Furthermore, quality dimensions of behavioural factors such as security, convenience and cost were found to be significant predictors of customer satisfaction (Aliyu et al., 2012a; Aliyu, et al. 2012b; Tasmin, et al., 2012) Various studies have been conducted in similar area, where electronic banking services have been tested as predictors of customer service delivery (Ganguli & Roy, 2011; Kamal, et al., 2009). Conversely, mobile banking service has been found to affect customer service delivery (Nick, 2011).
Mobile Banking:

The mobile phone is however turned into an electronic wallet, where transactions can be done through SMS, and according to experts, usage volume is steadily increasing with a good number of customers with electronic money accounts (Gill et al., 2011). In fact, the new functionalities of mobile banking will make it distinct from other forms of electronic banking (Consulting, 2010). Today, customers turn to their mobile phones rather than their personal computers for banking services.

![Fig. 2: Mobile Banking Functions (Source: Literature Survey, 2013)](image)

**Conceptual Model And Hypotheses:**

For the purpose of understanding the factors influencing mobile banking services towards customer service delivery, this paper proposes a conceptual model (see Figure 3). This conceptual model is developed based on several previous studies related to electronic banking and customer service delivery. Hence, the study proposes the following hypotheses:

![Fig. 3: Conceptual Research Model (Source: Literature Survey, 2013)](image)

The following hypotheses are developed based on the conceptual model and literature review discussed:

- **H01:** There is a significant relationship between cost and mobile banking in Malaysian banking industry.
- **H02:** There is a significant relationship between convenience and mobile banking in Malaysian banking industry.
- **H03:** There is a significant relationship between security and mobile banking in Malaysian banking industry.
- **H04:** There is a significant relationship between customer service delivery and mobile banking in Malaysian banking industry.
Methodology And Data Collection:

The survey instrument was developed based on literature review, while the variables included in the study have been adapted from the existing literature. Data were collected through an online questionnaire from three Malaysian Universities, namely: Tun Hussein Onn University of Malaysia (UTHM), University of Science Malaysia (USM) and University of Technology Malaysia (UTM). Respondents were randomly chosen from the list of both undergraduate and postgraduate students. The students’ sample was chosen because they are heavy users of electronic banking as most of them are staying in the campus far away from the city. Research shows that students are the lead users of technology, such as undergraduate and postgraduate students are not different from other tech-savvy customers in terms of psychological processes (Ganguli & Roy, 2011).

Interestingly, 360 students filled up the questionnaires online and all the 360 survey are usable, because the system is configured in such a way that one cannot continue with the survey without filling all the survey questions. This means that the respondents are more than reasonable for this survey. Equally, respondents were the customers of different banks, in which they were asked to state their level of agreement with the series of statements stated using a five-point Likert scale ranging from “strongly disagree” to “strongly agree.”

Data Analysis And Results:

Confirmatory factor analysis was conducted in the entire construct to determine the remaining measures which indicated the validity, unidimensionality 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). According to Zainudin (2012), the discriminate validity failed if the correlations are above 0.85, while in this case all the correlations are below 0.85 as it can be seen from figure 4, which means the discriminate validity is achieved. Furthermore, the CFAs of constructs produced a relatively good fit as indicated by the goodness of fit indices, such as a CMIN / def ratio (< 5); p-value (> 0.05); Goodness of Fit Index (GFI) of > 0.95; and root mean square error of approximation (RMSEA) values of less than .08 (< 0.08) (Al-majali, 2011). The construct validity is achieved when the Cronbach’s alpha values is 0.6 or higher for all components and the fitness indexes GFI is 0.90 or higher, CFI is 0.90 or higher, RMSEA is 0.80 or less and CMIN is less than 5.0 (Zainudin, 2012).

This means that validity is achieved as it can be seen from table 1 and 2. This is a reflection that the measuring items provide a reliable measure of internal consistency. The factor loading is newly developed scales and some scholars are of the view that for newly developed scale, the factor loading of an item should be 0.5 or higher (Zainudin, 2012). Therefore, after removing the items with factor loading less than 0.5, there are 5 items usable to measure the significance of cost on mobile banking, five items to measure the significance of security (SECRTY) on mobile banking, while items like convenience (CONV), mobile banking (MOBILE BK) and customer service delivery (SERV DELV) remains on change because the factor loadings are above 0.5 as it can be seen from figure 4.

Fig. 4: Factor Loading and Correlations for all Items of the Respective Construct.
Table 1: Summary of Fitness Index for the Measurement Model

<table>
<thead>
<tr>
<th>Model</th>
<th>CMIN</th>
<th>DF</th>
<th>P</th>
<th>CMIN/DF</th>
<th>GFI</th>
<th>NFI</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>714.5</td>
<td>361</td>
<td>.00</td>
<td>1.979</td>
<td>.840</td>
<td>.850</td>
<td>.919</td>
<td>.059</td>
</tr>
<tr>
<td>Saturated model</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Independence model</td>
<td>4761.468</td>
<td>406</td>
<td>.000</td>
<td>11.728</td>
<td>.188</td>
<td>.000</td>
<td>.000</td>
<td>.195</td>
</tr>
</tbody>
</table>

The factor loading for all items is above 0.5, meaning that the CFA (Fig 4) is considered appropriate and has a good fit. Thus, no more item deletion is required for this measurement model. (Schreiber, 2006; Zainudin 2012) The fitness indexes for the model are assessed in table 1.

Fig. 5: Standardized Factor Loading for Each Component of Mobile Banking Construct

Table 2: Summary of Fitness Indexes 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</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default model</td>
<td>990.488</td>
<td>371</td>
<td>.000</td>
<td>2.670</td>
<td>.787</td>
<td>.793</td>
<td>.859</td>
<td>.077</td>
</tr>
<tr>
<td>Saturated model</td>
<td>.000</td>
<td>0</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Independence model</td>
<td>4786.894</td>
<td>406</td>
<td>.000</td>
<td>11.790</td>
<td>.186</td>
<td>.000</td>
<td>.000</td>
<td>.196</td>
</tr>
</tbody>
</table>

The values for the level of acceptance of fitness indexes assessment in table 2 above shows that CMIN/DF < 3, GFI is approaching 1, CFI is approaching 1, and RMSEA < 0.77, which are under the acceptable level (Zainudin, 2012). Therefore, mobile banking standardized model (figure 5) is considered as appropriate and has a good fit. The path analysis summary shows that the regression coefficient of cost and convenient values on mobile banking are significant for the sample, where the p-value of mobile banking is 0.00. Meaning that, cost and convenient factors are significant predictors for customer service delivery via mobile banking as the mediator of customer service delivery. This finding conforms to the studies done by Afrouz (2007) and Nick (2011). However, the regression coefficient of security factors on customer service delivery through mobile banking is not significant. Therefore, construct security is not significant on mobile banking service.

Table 2 shows the goodness of fit of generated or re-specified structural model and it is better compared to the hypothesized model.
Table 3: Hypothesis testing for the Casual Effect of all the Construct

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOBILE BK --- COST</td>
<td>.422</td>
<td>.086</td>
<td>4.887</td>
<td>*** Supported</td>
</tr>
<tr>
<td>MOBILE BK --- CONV</td>
<td>.436</td>
<td>.078</td>
<td>5.560</td>
<td>*** Supported</td>
</tr>
<tr>
<td>MOBILE BK --- SECRTY</td>
<td>-.104</td>
<td>.054</td>
<td>-1.931</td>
<td>.054 Not Supported</td>
</tr>
<tr>
<td>SERVDELV --- MOBILE BK</td>
<td>1.022</td>
<td>.157</td>
<td>6.492</td>
<td>*** Supported</td>
</tr>
</tbody>
</table>

*** Indicating a highly Significance at <0.001

All the hypotheses are supported, except H3 (Mobile Banking Security), which indicated that security has no direct effect to mobile banking on customer service delivery. Instead, customers value conveniences and cost factors which have a direct effect on mobile banking, while on the same vein mobile banking has a direct effect on customer service delivery. Thus, from the result of the hypothesis testing, the study has proven that those two constructs namely convenience and cost have strong evidence of customer satisfaction via mobile banking as the mediator linking the relationship between mobile banking and customer satisfaction.

Conclusion And Recommendation:

All the three exogenous variables in this study (security, convenience and cost) were found to have a significant effect on mobile banking, which could suggest that these could be the key success factors for customer service delivery on Mobile banking services in Malaysia. Moreover, the study shows that behavioural factors such as convenience and cost have a positive significant impact on mobile banking in Malaysian banking industry. It is also highlighted that mobile banking does have significant influence on customer service delivery. Thus, it can be said that customers who have better service on behavioural factors (security, convenience and cost), or who are inclined to electronic banking services would have a higher participation in mobile banking or electronic banking.

Similarly, the main strengths of this study are its derivation of its factors from previous conceptual and empirical research by focusing on factors that have the most significant effects on the mobile banking. Similarly, the study could also be extended to include other factors in different geographical locations in related conditions to see if comparable results could be achieved.

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