TAM Analysis of College Students’ Online Banking Brand Selection Factors

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Abstract:
In this paper, technology acceptance model is applied to analyze college students’ online banking brand selection factors from the perspective of the feeling of service differentiation of the consumers. It is found that security and perceived ease of use are the two major factors directly affecting consumers’ choice and that the use attitude is the media for perceived usefulness to act on the use intent.

Keywords:
Online Banking; Technology Acceptance Model; Brand Selection

1. INTRODUCTION

With the development of Internet technology and opening of global financial market, the banking industry is facing tremendous competitive pressure. As a result, online banking appears, taking consideration into both low cost and innovation. There is no systematic and specified definition for this newly emerging product, and some financial institutions give a qualitative concept. In this paper, it is believed that online banking is a non-entity bank which provides customers with thorough and meticulous traditional and innovative banking services via Internet technology. The service differs in the security, convenience, practicality and brand building provided by different banks. College students are an important group of customers for current and future online banking. The sooner it is to cultivate the brand loyalty of the college students, the better it is for banks. Based on service differentiation, this paper focuses on the factors affecting college students’ selection of online banking brand.

2. RESEARCH METHODS

2.1 Model Selection

There are mainly three types of research models for online banking selection: First, technology acceptance model (TAM). Second, American Customer Satisfaction Index (ACSI) model. Third, SERVQUAL Model. Through comparison of such three types of models, TAM model, which is advanced in less impact factors, wide application range and ease of obtaining directional conclusions, is applied in this paper.
2.2 Description of Data Collection Methods and Results

2.2.1 Data Collection through Questionnaire

The data in this paper is based on TAM model, wherein Likert five-point scale questionnaire is designed for the college students to get attitude scores of each dimension. Totally 200 questionnaires are distributed and 184 valid questionnaires are returned, of which 167 are online banking users and 17 are non-online banking users.

2.2.2 Basic Description of Sample Data

Table 1. Descriptive analysis of the questionnaire.

<table>
<thead>
<tr>
<th>Items</th>
<th>The top three items with the highest scores for the multiple selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank brand</td>
<td>China Construction Bank (138), Postal Savings Bank of country-regionChina (41), Industrial and Commercial Bank of place country-regionChina (17)</td>
</tr>
<tr>
<td>Way of awareness</td>
<td>Bank outlet publicity (116), friends (90), network information (64)</td>
</tr>
<tr>
<td>Common business</td>
<td>online payment (170), transfer (96), self-service payment (85)</td>
</tr>
<tr>
<td>Reasons for use</td>
<td>Convenient online shopping (154), save time (97), required by some business (70)</td>
</tr>
<tr>
<td>Key factors</td>
<td>Transaction security (142), easy operation (126), low commission charge (52)</td>
</tr>
</tbody>
</table>

Table 1 shows that: First, the majority of respondents have started using online banking; Second, the respondents intend to select state-owned banks as a service provider; Third, the majority of respondents use the basic services; Fourth, the respondents believe online banking promotional channel is single; Fifth, the majority of respondents emphasize on security and ease of transaction in terms of selection of bank brand.

2.3 Assumption of Model Variables

The intention of use is the precedent variable for the use behavior for TAM model, namely the explained variable; and the use attitude, perceived ease of use and other factors are external variables, namely the explanatory variables. The specific meaning of the relevant variables are as follows: the use of intention reflects the wishes of the customers to use online banking; use attitude refers to positive or negative feeling of the customers to use online banking; perceived usefulness refers to whether the customers’ quality of life or work is more efficient after use of online banking; perceived ease of use means whether the customers feel the online banking technology is easy to accept and use; security refers to whether the customers feel risk and the extent of risk during service and transaction process provided by the online banking; bank brand refers to the brand for which a financial entity is familiar to the customers in the process of providing services and different from other companies significantly in terms of logo. Specific hypothetical models are shown in Table 2:

3. EMPIRICAL ANALYSIS
### 3.1 Data Reliability and Validity Analysis

In terms of application questionnaire method, in order to ensure the collected data can adapt to models and theoretical requirements, the research data should subject to verification of the reliability and validity. Common reliability evaluation indicator is CITC values and $C'$ coefficient, wherein the former reflects the consistency between the individual and overall, and generally in case of greater than 0.5 it means the questions can truly reflect the questionnaire; and the latter represents the individual variable systematicness, and the higher the value, the better the systematicness (full value of 1). The common validity evaluation method is Kaiser-Meyer-Olkin (KMO) measure of sample adequacy and CityplaceBartlett sphericity test significant probability Sig., to test whether the data is suitable for factor analysis.

Specific test data tables are omitted. According to the results, after reliability test for 24 measurable variables of six factors, it is found that the question No. 1, 8 and 14 fail to pass the test. After deletion, it is found reliability is better and it does not affect further analysis so that it is deleted. The rest variables pass the test, indicating that the scale reliability is good.

KMO measure of sample shows that all variables can subject to factor analysis, and the data and model fit well; Bartlett sphericity test significant probability is 0.000 < 0.010, indicating that the data is relevant.

### 3.2 Correlation Analysis

Correlation analysis is done for each variable to get specific degree of mutual influence among the variables, and verify assumptions of TAM model in Table 3.

#### 3.2.1 Correlation Analysis of Use Attitude and other Factors

<table>
<thead>
<tr>
<th>Use attitude</th>
<th>use intent</th>
<th>perceived sefulness</th>
<th>perceived ease of use</th>
<th>Security</th>
<th>Bank brand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.542**</td>
<td>.572**</td>
<td>.472**</td>
<td>.311**</td>
<td>.408**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>164</td>
<td>164</td>
<td>164</td>
<td>164</td>
<td>164</td>
</tr>
</tbody>
</table>
Table 3 shows that the use attitude has significant positive correlation with use intent, perceived usefulness, perceived ease of use, security and bank brand, initially verifying hypothesis H1, H3, H5, H7, H9.

3.2.2 Correlation Analysis of Use Intent and other Factors

The same method is used for correlation analysis of use intent and other factors. The specific data form is omitted. Results show that the use intent has significant positive correlation with perceived usefulness, perceived ease of use, security and bank brand, initially verifying hypothesis H2, H4, H6, H8.

3.3 Regression Analysis

3.3.1 Regression Analysis of Use Attitude and other Factors

Table 4. Regression analysis of use attitude and other factors.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>non-standardized coefficient β</th>
<th>Value of t</th>
<th>Sig.</th>
<th>Linear statistical value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant term</td>
<td>1.003</td>
<td>3.408</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>perceived usefulness</td>
<td>0.227</td>
<td>2.137</td>
<td>0.034</td>
<td>0.294</td>
</tr>
<tr>
<td>perceived ease of use</td>
<td>0.289</td>
<td>2.619</td>
<td>0.100</td>
<td>0.307</td>
</tr>
<tr>
<td>Security</td>
<td>0.061</td>
<td>0.873</td>
<td>0.348</td>
<td>0.648</td>
</tr>
<tr>
<td>Bank brand</td>
<td>0.157</td>
<td>1.942</td>
<td>0.032</td>
<td>0.596</td>
</tr>
<tr>
<td>R2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 shows that there are four impact factors in the equation eventually, namely perceived ease of use, perceived usefulness and bank brand and finally security in order. Such four factors have positive correlation with the use attitude, indicating that customers are likely to select simple, convenient, more useful and more secure and better brand in terms of online banking service. The specific regression equation is:

Use attitude = 1.003 + 0.289 perceived ease of use + 0.227 perceived usefulness + 0.157 bank brand + 0.061 security

The regression equation shows that the hypothesis H3, H5, H7 and H9 are correct.

3.3.2 Regression Analysis of Use Intent and other Factors

The same method is used for regression analysis of use intent and other factors. Results show that the impact factors are perceived ease of use, security, bank brand and perceived usefulness in order of the degree of impact. The first three show that customers are likely to select such bank whose online banking is simple, secure and good in brand. The perceived usefulness and use intent have no direct relationship.
3.3.3 Regression Analysis of Use Intent and Use Attitude

The same method is used for regression analysis of use intent and use attitude. The results show that DW value is 1.969. Excluding the self-relevant issues, the use attitude factor coefficient is 0.577, indicating that the original hypothesis H1 is correct. The method for further testing whether use attitude is an intermediary variable is to input use attitude factor into the regression equation. If other factors $\beta$ coefficient decreases, the use attitude is an intermediary variable.

3.3.4 Regression Analysis of Use Intent and other Factors

The same method is used for regression analysis of use intent and use attitude. The results show that DW value is 1.969. Excluding the self-relevant issues, the tolerance and VIF are within the allowable range, excluding multicollinearity problem. In terms of the overall effect, use intent explains 79.7% of the total variance, $F$ value reaches 124.319, the significant level $\text{Sig.} = 0.000 < 0.010$, illustrating the regression effect is very significant.

After the use attitude factor is included, the $\beta$ coefficients of perceived usefulness, perceived ease of use and other factors are decreased, indicating that the use attitude as an intermediary variable affects the use intent. Based on the above analysis, we can draw the regression equation of online banking brand selection and use intention and various relevant factors:

$$\text{Use intent} = 1.050 \text{ perceived ease of use} + 0.098 \text{ security} + 0.078 \text{ use attitude} + 0.065 \text{ bank brand} - 0.328 \text{ perceived usefulness}$$

The regression equation shows that the original hypothesis H4, H6 and H8 are correct while H2 is incorrect.

4. CONCLUSIONS

Most assumptions of the TAM model are correct. Some assumptions are corrected to get the final conclusions: first, the factors affecting customers to choose online banking brands include perceived usefulness, perceived ease of use, security, bank brand and so on, of which the perceived ease of use and security have the greatest influence; second, factors affecting customers to choose to use online banking comes mainly from the use intent, which is affected by other factors via use attitude; third, perceived ease of use, security and bank brand can act directly on the use intent and use attitude so as to affect the behavior of customers; and fourth, perceived usefulness has no direct effect on the use intent but affects use intent through use attitude.

5. ACKNOWLEDGMENTS

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References