

Assessing Serviceability and Reliability to Affect Customer Satisfaction of Internet Banking

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Abstract—The purpose of the research is to analyze factors of serviceability and reliability that could influence internet banking customer satisfaction in China. Moreover, the paper also tries to explain the relationship among serviceability, reliability and customer satisfaction, and to find some major variables for keeping high level internet banking customer satisfaction. The data demonstrated that serviceability and reliability have direct and significant effect to online banking customer satisfaction in the Chinese banking sector. Finally, it is observed that convenience, comfortable, empathy, privacy, security and assurance are key factors to affect customer satisfaction in the internet banking sector. After the validation of measurement scales, the hypotheses are contrasted through structural modeling. The authors validate the hypotheses and a measurement model. The paper proposes a model for analyzing empirically the link among serviceability, reliability and customer satisfaction in Chinese internet banking industry.

Index Terms—serviceability, reliability, customer satisfaction, internet banking

I. INTRODUCTION

Since the first online banking services were provided to customers in USA on October 1994, online banking service is spread rapidly all over the world. Because it's the convenience, speed, low cost, round-the-clock availability of internet banking services, and etc. [1]. In 1997, Industrial and Commercial Bank of China was the first bank to launch an internet payment system in China; thereafter, online banking service is developing rapidly in China. Most commercial banks now provide internet banking service in China [2]. In 2008, the number of internet banking customers in China was 58 million, and annual growth rate is 76%. In China, the internet banking users occupied 19.3% of the internet users in 2008 (China Internet Network Information Center, 2009). And IDC predicted that internet banking in China would increase rapidly from 2008 to 2012, with a compound annual growth rate (CAGRs) of 23.1% (International Data Corporation, 2008).

With the rapid growth of Internet technology, online banking has played an important and central role in the e-payment area which provides an online transaction platform to support many e-commerce applications such as online shopping, online auction, internet stock trading and so on. However, despite the fact that online banking provides many advantages, such as faster transaction

speed and lower handling fees, there are still a large group of customers who refuse to adopt such services due to uncertainty and security concerns. Therefore, understanding the reasons for this resistance would be useful for bank managers in formulating strategies aimed at increasing online banking use.

During the past several years, a growing number of researchers from the fields of marketing and information systems focus on how the Internet influences the perceptions, attitudes and behaviors of online banking consumers. The need of online banking providers to differentiate themselves from their competitors fuels this growing interest, since it is hard to reproduce personal encounters between customers and providers within the online environment. From reading a mass of academic articles, the author could get that customer satisfaction is important drivers of business profits. Casaló etc. [3] have found that customer satisfaction with previous online banking interactions have had a positive effect on both customer loyalty and positive word-of-mouth. One survey investigation [4] concluded that highly satisfied online banking customers were nearly 39% more likely to purchase additional products and services from their banks than dissatisfied online banking customers. But low level customer satisfaction is a big problem in China (China Internet Network Information Center, 2009).

Accordingly, the purpose of this study is to investigate the relationship among serviceability, reliability and customer satisfaction; and try to improve the level of customer satisfaction in China. To attain the objectives of this study: firstly, authors carry out a deep review of the relevant literature concerning the variables included in the study; secondly, authors formalize the hypotheses; thirdly, authors explain the processes of data collection and measures validation; fourthly, authors present the results and conclusions of the study. Finally, authors mentioned potential future study and research limitation.

II. LITERATURE REVIEW

In this section, authors review the relevant literature and the focus-group discussions with banks' managers, authors summarize the variables included in the study: serviceability (convenience, comfortable and empathy), reliability (privacy, security and assurance) and customer satisfaction (number of complaints and overall service quality).

Serviceability (SA)

Follow the level of service increasing, bank customers want to use bank service at more convenience way. This is differs from a marketing use of the term, which involves the factor of service satisfaction. Internet banks empower their customers to perform their needs whenever, wherever, and however; even novice users have immediate access to vital internet banking functions, 24 h a day, 7 days a week [5]. Banks also can benefit from much lower operating costs by offering internet banking services, which require less staff and fewer physical branches. Internet banking has changed the business of retail banks significantly in increased convenience for the customer [6]. Customer satisfaction refers to the degree to which customers are satisfied and pleased with their online banking experience. Previous scholars' studies suggest that customer satisfaction can be significantly predicted by the factor of convenience. So, in the study convenience is factor that should be taken account of when measuring serviceability.

In spite of the recent proliferation of internet banking, customers have a tendency to be reluctant to provide sensitive personal information to online banking website [7]. Customers are generally comfortable providing websites with general information such as preferences. They are, however, very uncomfortable when asked to provide more sensitive information such as credit card numbers. Banks' customers need to be made aware of internet banking services, and feel secure and comfortable with using such services as the new internet banking operating procedures are radically different from those they are used to [8]. Banks should also consider how to let customers feel comfortable to use internet banking service. They should pass multiple methods to tell customers that the online banking functions and design is very kind for customer to use. So it is clear to know the comfortable is very important for serviceability in internet banking service. Thus, comfortable should play an important role in measuring serviceability.

Devaraj et al. [9] examined the consumer satisfaction in e-service channel and they found that among the five dimensions of SERVQUAL, only assurance and empathy are significant determinants in explaining e-service channel satisfaction. Empathy focuses on the care and individual attention to the customers. Providing consumer customized information over the website helps ensure the information provided is concise and relevant. Luo etc. [10] pointed out that customization of the information helps match consumer interest to the products or services, and thus gives the customer a value-added experience and enhances their satisfaction to the website. Madu and Madu [11] further contended that offering customized services would provide customers the "maximum" empathy. Many scholars' study already proved empathy is a key factor to affect customer service quality. So the empathy of internet banking may have a positive influence on customers' satisfaction.

Through a mass of research, the author found that convenience, comfortable and empathy are the most important factors influence serviceability in internet

banking service area. So the author used these three factors to demonstrate serviceability in customer satisfaction of internet banking service.

Reliability (RA)

Security is the freedom from danger, risks or doubts. It involves physical safety, financial security and confidentiality. It is one important dimension that may affect users' intention to adopt online banking services. And online banking service is based on the Internet, which is an open network; security is an important issue for online banking applications. Despite various technical advancements is used in Internet security such as a password, mother's maiden name, a memorable date; in certain cases, a few minutes of inactivity will automatically log a user off the account. Besides, the "secure socket layer," a widely-used protocol for online credit card payments, is designed to provide a private and reliable channel between two communicating entities. Such a channel may also be ensured via the use of Java Applet that runs within the user's browser, the use of a personal identification number as well as an integrated digital signature and digital certificate associated with a smart card system. But consumers are still concerned about the security of monetary transactions when using the online banking service [12]. Monetary transactions over the Internet are the main part of internet banking service. Therefore, if the security concern of internet banking is removed, customers' satisfaction with online banking may increase. Several studies [13] also argued that security was a significant determinant of internet banking. To summarize, the security of internet banking may have a positive influence on customer satisfaction.

Privacy refers to the degree to which a website is safe, and customer information protected. This dimension holds an important position in e-service. In the virtual environment of e-service, customers often perceive significant risks stemming from the possibility of improper use of their financial and personal data. Raganathan and Ganapathy found that one dimension of an effective website was privacy. And most customers perceived fears of divulging personal information to websites might be misused by others over the internet, especially for financial transactions [14]. Obviously, banks' customers have doubts about the trust of the online bank's privacy policies [15]. Privacy has striking influence on user's willingness to engage in online exchanges of money and personal sensitive information [16]. Privacy is an important dimension that may affect customers' intention to adopt online banking service. Hence, it is privacy have a positive effect on customer satisfaction of online banking.

Assurance refers to the ability the online banking convey trust and confidence to their consumers. Madu and Madu [11] argued that the online banking must ensure that their employees are knowledgeable about their operation, and courteous in their responses to the customers. Schneider and Perry [17] suggested some web features that help promote the assurance to consumers. For instances, providing detailed banks information (e.g. background, mission statement, announcement, banks

news), stating regulations or rules of the transactions, and including the third party trust assurances (e.g. consumer union assurance, computer industry assurance). Lee et al. [18] also recommended several guidelines for building assurance, including affiliation with an objective third party, stating the guarantee policy and statement on the website, and maintaining a professional appearance of the website. Many scholars' study already proved assurance is a key factor to affect reliability of online banking. Thus, assurance should play an important role in measuring reliability.

Through a mass of research, the author found that privacy, security and assurance are the most important factors influence reliability in internet banking service area. So the author used these three factors to demonstrate reliability in customer satisfaction of internet banking service.

Customer Satisfaction (CS)

Lee et al. [18] found that customer complaints had a direct effect on customer satisfaction. They reported that as one-dimensional attributes increased, the level of overall customer satisfaction also increased. Ahmed et al. [19] discovered that major gains in customer satisfaction were likely to come from an alleviation of complaints. These researchers, overall, concur that the number of complains is an index of customer satisfaction. This is why, in the present study, the number of complains were used to measure customer satisfaction.

Service quality is defined as a long-term cognitive judgment [20] regarding an organization's "excellence or superiority" [21]. Two main streams of research into the dimensions of service quality exist: the Nordic school, which tends to incorporate the process and outcome dimensions [22], and the North American school, which draws on SERVQUAL [21, 23]. A customer-oriented quality strategy is critical to service firms as it drives customers' behavioral intention with, for instance, highly perceived service quality leading to repeat patronage and customer loyalty [24, 25]. Accordingly, substandard service quality will lead to negative word-of-mouth, which may result in a loss of sales and profits as the customers migrate to competitors [26, 27]. These factors stress the importance of delivering high-level services, especially within an electronic environment, where customers can readily compare service firms and where switching costs are low [25].

China Financial Certification Authority (CFCA) was established by 12 national banks in China. It is the authority agency to monitor online banking services in China. CFCA uses two indexes to measure quality of online banking: percentage of increase in the number of users and the frequency of online banking service use. These measurement criteria were adopted in the present study to verify the overall online banking quality.

III. CONSTRUCTS FOR THE PRESENT STUDY AND HYPOTHESIS

According to the possible connection among serviceability, reliability and customer satisfaction in

handling private data, a direct relationship might be established among the three concepts. And follow the prior study; one construct is addressed in the present study: serviceability, reliability and customer satisfaction, all of which are elaborated in prior paragraphs. The relationships among serviceability, reliability and customer satisfaction, as embedded in the hypotheses, are now illustrated in Figure 1.

Taking into account the previous considerations, the relationship among serviceability, reliability and customer satisfaction are evident in personal data handling and should be examined in greater detail. With the aim of testing these connections in the internet banking customer satisfaction, the following hypotheses are proposed:

H1. There will be a positive relationship between serviceability and customer satisfaction.

H2. There will be a positive relationship between serviceability and reliability.

H3. There will be a positive relationship between reliability and customer satisfaction.

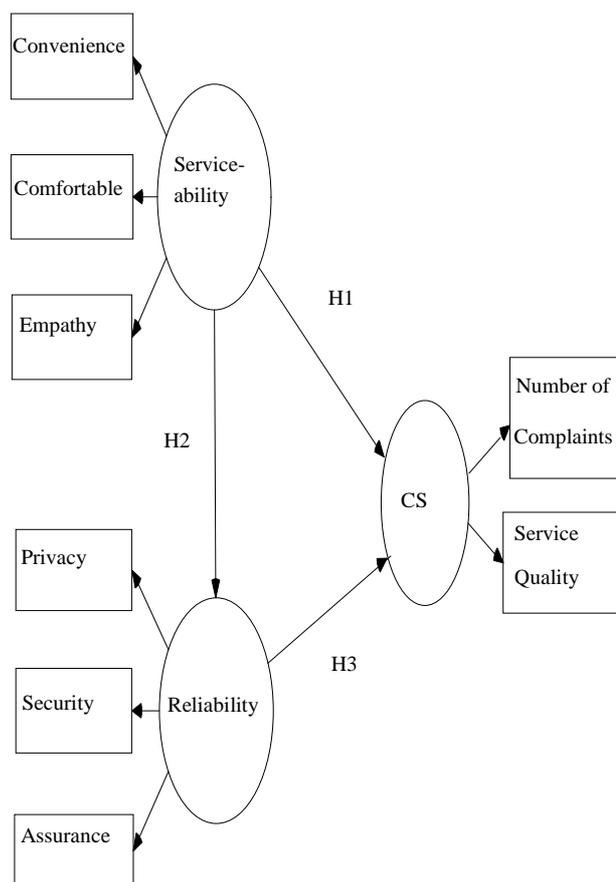


Figure 1. Research Factors and Hypotheses in the Present Study

IV. DATA COLLECTION

The generation of the initial questionnaire was ascertained by experts and managers interviews at banks as well as through in-depth discussions with online banking users. Pre-tests of the initial 24-item questionnaire were carried out with 30 online users to

improve the questionnaire. The resulting modified 8-item pool was presented to Chinese users of online banking in drop in survey. Respondents were asked to refer to their own online banking service (the one they use regularly) when answering the questionnaire. Non-random method of collecting the data (volunteer sampling) generated 198 fully usable questionnaires. The questionnaires of collection are non-random samples. So authors compared some of the survey results with available information about the population. The results are very similar and as a consequence, authors may conclude that our sample represents the profile of the average Chinese online banking users.

V. MEASURES VALIDATION AND RESULTS

To ensure research rigor and validity of the results, we followed the procedures proposed by Koufteros in applying Structural Equation Modeling (SEM) to analyze the data. First, we developed an instrument for the measurement scale by following a systematic approach and incorporating a pre-test and a pilot test to ensure the appropriateness of the instrument. Second, we adopted an effective approach for data collection. Third, we performed an evaluation at the item level using the tests for convergent validity and item reliability. Fourth, as a satisfactory model was derived, we carried out the analysis with an assessment of the model fit and unidimensionality. Fifth, we evaluated the diagnostics and tests for discriminant validity, composite reliability and variance extracted to gain confidence in the measurement scales. Finally, we tested the structural model by means of Confirmatory Factor Analysis (CFA).

Exploratory Factor Analysis

An exploratory factor analysis using SPSS 17 was conducted on all the data. The rotated factor matrix, resulting from an Equamax rotated principal axis factor extraction of the independent variables using the 1.0 eigenvalue cut-off criterion (see table I), which indicates that eleven factors emerged and reports their factor loadings.

The data were tested using the SPSS 17 Exploratory Factor Analysis to evaluate the Cronbach alpha. The Cronbach alpha indicator is the most frequently used test for assessing reliability. Some scholars consider that it underestimates reliability [28]. Consequently, the use of composite reliability has been suggested [29], using a cut-off value of 0.7 [30]. The results show the value for serviceability’s Cronbach alpha is 0.871; reliability’s Cronbach alpha is 0.903; and the value for customer satisfaction’s Cronbach alpha is 0.832. This is satisfactory. And all factor loadings were larger than 0.5, representing an acceptable significant level of internal validity. The factor loadings ranged from 0.759 to 0.819 for customer satisfaction; from 0.601 to 0.823 for serviceability; and from 0.737 to 0.806 for reliability. All factor loadings were of an acceptable significant level, all 8 items were retained for further analysis (see table I).

TABLE I. FACTOR LOADING

Factors	Factor loading	Cronbach alpha	Variance explained (%)	Construct Reliability (CR)	AVE
CS		0.832	29.448	0.832	0.7124
CS 1	0.759				
CS 2	0.819				
SA		0.871	27.639	0.8743	0.6987
SA 1	0.798				
SA 2	0.823				
SA 3	0.601				
RA		0.903	26.244	0.9031	0.7566
RA1	0.799				
RA2	0.806				
RA3	0.737				

Used SPSS Principal Axis Factoring extraction with Equamax rotation method

Confirmatory Factor Analysis

Authors developed a structural equations model (SEM), which the objective of testing is the proposed hypotheses (Figure 2). Authors observed that the hypothesis was supported at the 0.01 level and, in a similar way. Model fit was acceptable (Chi-square =29.982 df, p <0.001, normed Chi-Square = 1.764) From calculating, the author obtained structural equations model (SEM) model fit indexes, and listed these processes in the coming paragraphs.

The GFI (goodness of fit index) was devised by Jöreskog and Sörbom [31] for MI and UI is estimation, and generalized to other estimation criteria by Tanaka and Huba [32]. The GFI is given by where

$$GFI = 1 - \frac{\hat{F}}{\hat{F}_b} \tag{1}$$

\hat{F} is the minimum value of the discrepancy function and \hat{F}_b is obtained by evaluating F with $\sum^{(g)} = 0$, $g = 1, 2, \dots, G$. An exception has to be made for maximum likelihood estimation, since (D2) is not defined for $\sum^{(g)} = 0$. For the purpose of computing GFI in the case of maximum likelihood estimation, $\hat{F}(\sum^{(g)}; S^{(g)})$ is calculated as:

$$f(\Sigma^{(\beta)}; S^{(\beta)}) = \frac{1}{2} \text{tr} [K^{(\beta)-1} (S^{(\beta)} - \Sigma^{(\beta)})^2] \quad (2)$$

with $K^{(\beta)} = \Sigma^{(\beta)}(\hat{\gamma}_{ML})$, where $\hat{\gamma}_{ML}$ is the maximum likelihood estimate of γ . From used the formula (1) and (2), the author calculated that the Model's GFI is 0.962.

The AGFI (adjusted goodness of fit index) takes into account the degrees of freedom available for testing the model. It is given by

$$AGFI = 1 - (1 - GFI) \frac{d_b}{d} \quad (3)$$

Where

$$d_b = \sum_{g=1}^G p^{*(g)} \quad (4)$$

From used the formula (3) and (4), the author got that the model's AGFI value is 0.920.

The Bentler-Bonett normed [33] fit index (NFI), or Δ_1 in the notation of Bollen [34] can be written

$$NFI = \Delta_1 = 1 - \frac{\hat{C}}{\hat{C}_b} = 1 - \frac{\hat{F}}{\hat{F}_b} \quad (5)$$

Where $\hat{C} = n\hat{F}$ is the minimum discrepancy of the model being evaluated and $\hat{C}_b = n\hat{F}_b$ is the minimum discrepancy of the baseline model. From used the formula (5), the author calculated that the Model's NFI is 0.975.

The comparative fit index [35] is given by

$$CFI = 1 - \frac{\max(\hat{C} - d, 0)}{\max(\hat{C}_b - d_b, 0)} = 1 - \frac{NCP}{NCP_b} \quad (6)$$

where \hat{C} , d , and NCP are the discrepancy, the degrees of freedom and the noncentrality parameter estimate for the model being evaluated, and \hat{C}_b , d_b and NCP_b are the discrepancy, the degrees of freedom and the noncentrality parameter estimate for the baseline model. From used the formula (6), the author calculated that the Model of the study's CFI is 0.989.

F_0 incorporates no penalty for model complexity and will tend to favor models with many parameters. In comparing two nested models, F_0 will never favor the simpler model. Steiger and Lind [36] suggested compensating for the effect of model complexity by dividing F_0 by the number of degrees of freedom for testing the model. Taking the square root of the resulting ratio gives the population "root mean square error of approximation", called RMS by Steiger and Lind, and RMSEA by Browne and Cudeck [37].

$$\text{Population RMSEA} = \sqrt{\frac{F_0}{d}} \quad (7)$$

$$\text{Estimated RMSEA} = \sqrt{\frac{\hat{F}_0}{d}} \quad (8)$$

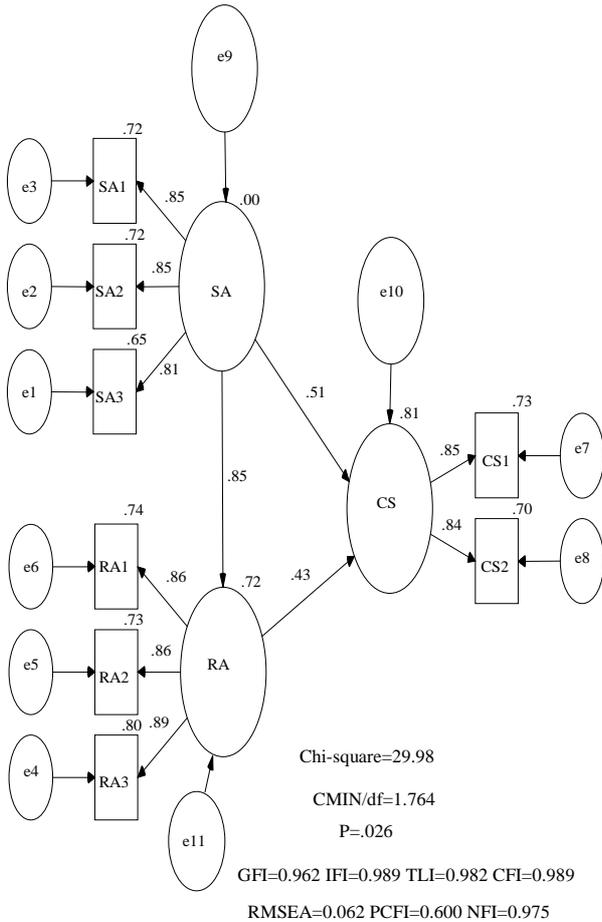
The results show that the RMSEA index is 0.062.

Overall, our model exhibited a reasonable fit with the data collected. We assessed the model fit using other common fit indices: goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), normed fit index (NFI), comparative fit index (CFI), root mean square error of approximation (RMSEA). The model exhibited a fit value exceeding or close to the commonly recommended threshold for the respective indices, the commonly suggested valued be list in table II.

TABLE II
FIT STATISTICS OF FINAL MODEL

Fit statistic	Suggested	Obtained
Chi-square		29.982
Df		17
Chi-square significance	P < or = 0.05	0.026
Chi-square/df	< 5	1.764
GFI	> 0.90	0.962
AGFI	> 0.90	0.920
NFI	> 0.90	0.975
CFI	> 0.90	0.989
RMSEA	< 0.08	0.062

It was also notable that this model has allowed authors to explain at a very high level serviceability and reliability in customer satisfaction of online banking service. Besides, according to the standardized estimates, authors may say that customer satisfaction is clearly and positively influenced by serviceability and reliability in handling personal data ($\beta_1 = 0.51$ and $\beta_2 = 0.43$), and reliability is clearly and positively influenced by serviceability ($\beta_3 = 0.85$) in Figure 2. Compare with empathy, convenience and comfortable have larger effect for reliability and customer satisfaction. And authors found that privacy, security and assurance have larger effect than empathy, convenience and comfortable for customer satisfaction ($\beta > 0.86$) in Figure 2.



Construct Reliability Analysis

The construct reliability of the latent variables is an evaluation standard for the inner quality in a structural equation model [38]. If the construct reliability is higher than 0.7, the inner quality of the model is considered acceptable [39]. The author will use the model standardized regression weights to calculate the Construct reliability, presented as ρ_c . Construct reliability of customer satisfaction and website quality were calculated at a suggested lower limit of 0.70 with equation (9). The results show in the Table I.

$$\rho_{c1} = \left[\frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum \theta_i} \right] \tag{9}$$

Another index, similar to construct reliability, is “average variance extracted (AVE),” presented as ρ_v . This index can explain how much variance explained in the latent variable comes from the observed variables.

The higher the average variance extracted, the better the observed variables could explain the latent variable. Generally speaking, the model’s inner quality is considered good when the average variance extracted is higher than 0.5 [40]. The average variance extracted from customer satisfaction and website quality was calculated at a suggested lower limit of 0.50 with equation (10). The results show in the Table I.

$$\rho_{v1} = \left[\frac{(\sum \lambda_i^2)}{(\sum \lambda_i^2) + \sum \theta_i} \right] \tag{10}$$

Discriminant validity assesses the extent to which a concept and its indicators differ from another concept and its indicators. Fornell and Larcker’s study showed that the correlations between items in any two constructs should be lower than the square root of the average variance shared by items within a construct. From the Table III, the result proved that the square root of the variance shared between a construct and its items was greater than the correlations between the construct and any other construct in the study model, satisfying the Fornell and Larckers’ study. All diagonal values exceeded the inter-construct correlations. Therefore, the results confirmed that our instrument had satisfactory construct validity.

TABLE III
 DISCRIMINANT VALIDITY

	CS1	CS2	SA1	SA2	SA3	RA1	RA2	RA3
Number of complaints (CS1)	0.759							
Service quality (CS2)	.713**	0.819						
Convenience (SA1)	.636**	.577**	0.798					
Comfortable (SA2)	.620**	.587**	.750**	0.823				
Empathy (SA3)	.655**	.643**	.663**	.672**	0.601			
Privacy (RA1)	.636**	.605**	.648**	.597**	.585**	0.799		
Security (RA2)	.609**	.654**	.609**	.567**	.597**	.749**	0.806	
Assurance (RA3)	.638**	.661**	.634**	.674**	.541**	.762**	.763**	0.737

Note: All correlations significant at $p < 0.05$ except where noted. Diagonal elements are square roots of average variance extracted.

According to Table III, several correlations between constructs are rather high [e.g. between Privacy (RA1) and Assurance (RA3)], hitting 0.7–0.8. To determine whether any multicollinearity effects existed, the author check whether there was any warning message produced by the AMOS output that signaled a problem of multicollinearity. The results showed that there was no evidence of multicollinearity. We do not need worry about the problem of multicollinearity in the study.

VI. DISCUSSION

The results of the study provide support for the research model presented in Figure 1. And the results also proof the hypotheses regarding the directional linkage

among the model's factors. The finding reveals that serviceability ($\beta_3 = 0.51$) has a positive influence on customer satisfaction to adopt internet banking service. This shows that customers care about convenience, comfortable and empathy, when they adopt internet banking service. Regarding these three factors of serviceability, the results indicate convenience (0.85) and comfortable (0.85) have an added significant effect on customer satisfaction. And the empathy (0.81) has slightly significant effect on customer satisfaction. It means that customers care more about convenience and comfortably to adopt internet banking service. In the same time, authors find the serviceability ($\beta_3 = 0.85$) has a strong positive influence on reliability. This implies that online banking users might not adopt the online banking because of serviceability.

Second, the study found the positive influence of reliability on customer satisfaction was significant. Customer satisfaction is clearly and positively influenced by reliability ($\beta_3 = 0.85$) in Figure 2. Compared with privacy, security and assurance, assurance has larger effect than privacy and security. It means that the customers real need banks to give them an assurance that internet banking is safe. So the assurance is more important than privacy and security for internet banking customer.

In conclusion, these results provide several key insights into the determinants of online banking customer satisfaction. First, serviceability can affect both of reliability and customer satisfaction. When limited resources become the barrier to improve all of six factors, banks can improve serviceability first, and reliability to be second. Second, the online customers more care about assurance compare with privacy and security. If banks can give the customers an assurance, it will increase customer satisfaction. For example, Bank of American promises that the bank can compensate customer loss, if the loss happens at using the internet banking service.

VII. LIMITATION

Since this empirical study was performed with a time constraint, as with other cross-sectional studies, it is not without limitations. The internet banking service in China, as well as knowledge about customer behavior in relation to internet banking, is at the infancy stage. At a time when rapid changes in new technologies come to market daily, the results of a cross-sectional study may not be perfectly generalizable.

Also there are other limitations to the present study. First, the sample was China-focused, with all of the respondents living in China. The participants in this survey may have possessed attributes and behaviors that differed from other country in the world. Second, the sample was restricted to the customers of banks and may have possessed attributes and behaviors that differ from those of consumers in other business industries. Next, as mentioned earlier, in the data collection section, since it was impossible to send follow-up surveys, no attempts were made to ascertain the existence of non-response bias by comparing responses to the first-wave surveys with

those to a second wave.

VIII. FUTURE STUDY

This study only covers some factors of serviceability and reliability in customer satisfaction of internet banking area. Future research may follow up the present study in several ways. First, the present study focuses on serviceability, reliability and customer satisfaction as perceived by customers who have conducted on internet transactions. However, a mass of individuals primarily utilize the Internet as information sources and have never conducted commercial transactions over internet banking websites. These customers may have some unique perspectives regarding serviceability and reliability. Thus, future studies should employ a more generalized service quality scale which taps perceptions from both groups. Second, as the e-commerce field becomes increasingly mature, customers will develop distinct expectations for the quality of online services. Accordingly, more and more industry-wide service standards will be set up and implemented. Thus, future studies may utilize the expectation-disconfirmation paradigm to measure existing and new dimensions of internet service quality and customer satisfaction.

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