Factors Affecting Customer Satisfaction in Online Banking Service

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The Internet has become a vital part of people's daily lives. It has changed consumer behaviour in many ways, including financial transactions formerly requiring a visit to a bank branch to achieve. Commercial banks have been in the forefront in utilizing this to meet customer needs for on-demand financial services. This study focuses on factors that affect customer satisfaction with the use of online banking services provided by commercial banks. The American Customer Satisfaction Index Model and the Thailand Customer Satisfaction Index Model are applied to evaluate customer satisfaction. The findings can be used as guidelines to improve the quality of the online banking system.

INTRODUCTION

Today, an enormous variety of things can be done online depending on the user's goal, from access to information, entertainment and shopping to financial transactions that formerly required a visit to the bank. According to the Use of Information Technology and Communication in Households Survey conducted by the National Statistical Office, the number of internet users has been increasing constantly. A survey conducted in 2011 showed that of the approximately 62.4 million population aged 6 years and above, 14.8 million or 23.7% were internet users compared to 12% in 2005, the first year the survey was conducted (Thailand National Statistical Office, 2011). Thus, the internet can be considered an important channel by which to access information from all areas, including commercial transactions. This channel also has the benefit of convenience, as anyone can access it from any place and at any time they have an internet connection.

Thailand's banks are increasingly aware of the importance of the internet as seen in the rapid growth of internet users and also the desire of the populace to gain access to what they want when they want. This has led Thai banks to offer financial services via the internet or "internet banking" or "online banking" as they respond to the needs of bank customers. These platforms allow customers to perform financial transactions and use other services offered by the bank much as they could if they visited the bank in person. The great convenience has seen the number of internet users to increase exponentially.

As there are a variety of online banking systems offered by banks in Thailand, each bank needs to take into account customer satisfaction by measuring and evaluating their opinions and use this data to improve the quality of the system. This will help to bring clients back repeatedly to the bank's site and by implication increase the number of financial transactions with it.

This study was conducted to examine factors that may affect customer satisfaction in the use of online banking provided by banks in Thailand by applying the American Customer Satisfaction Index (ACSI) Model and the Thailand Customer Satisfaction Index (TCSI) Model and use the data obtained to develop a quality measurement tool and improvement in the online banking system.

The study focuses on the commercial banking sector in Thailand, as this sector is the engine of growth for the country's economy. Financial transactions are a part of daily life - whether done through a bank branch or by way of other online channels. The scope of the study is limited to top six commercial banks in Thailand with the highest transaction fees. The respondents need to do transactions through online channels including fund transfers between accounts both within the bank and different banks, bill payment, credit card payment, utilities payment and also configuring the initial set up for access to such services.

Benefits expected to be received from this research include the development of a quality measurement tool to evaluate the online banking system of commercial banks in Thailand to see whether it is consistent with factors that affect customer satisfaction and how it could be improved to make it align with these factors. Additionally, guidelines will be developed to improve the online banking system of commercial banks in Thailand by focusing on customer satisfaction, which will lead to an effective and efficient use of the system. Finally the results from this study will assist in competitiveness in the online banking service of commercial banks in Thailand to be able to compete with commercial banks from foreign countries and thus lead to loyalty to the bank.

LITERATURE REVIEWS

The American Customer Satisfaction Index Model (ACSI Model) was developed in 1994 by Dr. Claes Fornell as a director of the National Quality Research Center, a research unit within the University of Michigan, in cooperation with the American Society for Quality (ASQ) and the Customer Feedback Insights Group (CFI Group) in the United States of America (Fornell et al. 1996). The ACSI was based on the Swedish Customer Satisfaction Barometer (SCSB), a model designed for a measurement of the Swedish economy by measuring consumer satisfaction (Fornell, 1992). The ACSI is aimed at the United States economy and can be applied to economics at both the macro and micro levels. As the model can measure customer satisfaction based on their actual experiences, therefore it is used to measure product and service quality at organisation and industry levels. It also can be applied to marketing to enable it to reach more consumers. It is also applied in public sectors (Fornell, 2001)

The structure of the economy has changed over time. The organisations within each industry previously competed in terms of manufacturing, i.e. emphasizing large-scale production or services that resulted in economies of scale or production efficiency. This led to a higher profit margin without much consideration of the needs of the market or consumers since the manufacturer was the one who controlled the market. However, after the market began change and communication technology allowed consumers to have better access to information, the decision-making involved in purchasing goods or receiving services became far more complicated. Industries that formerly focused solely on manufacturing have had to change to meet consumers' desires. As a result, markets that once were manufacturer-centric have become consumer-centric. This has created the need to study and measure customer satisfaction in order to adapt to the changing market and create competitiveness within industry.

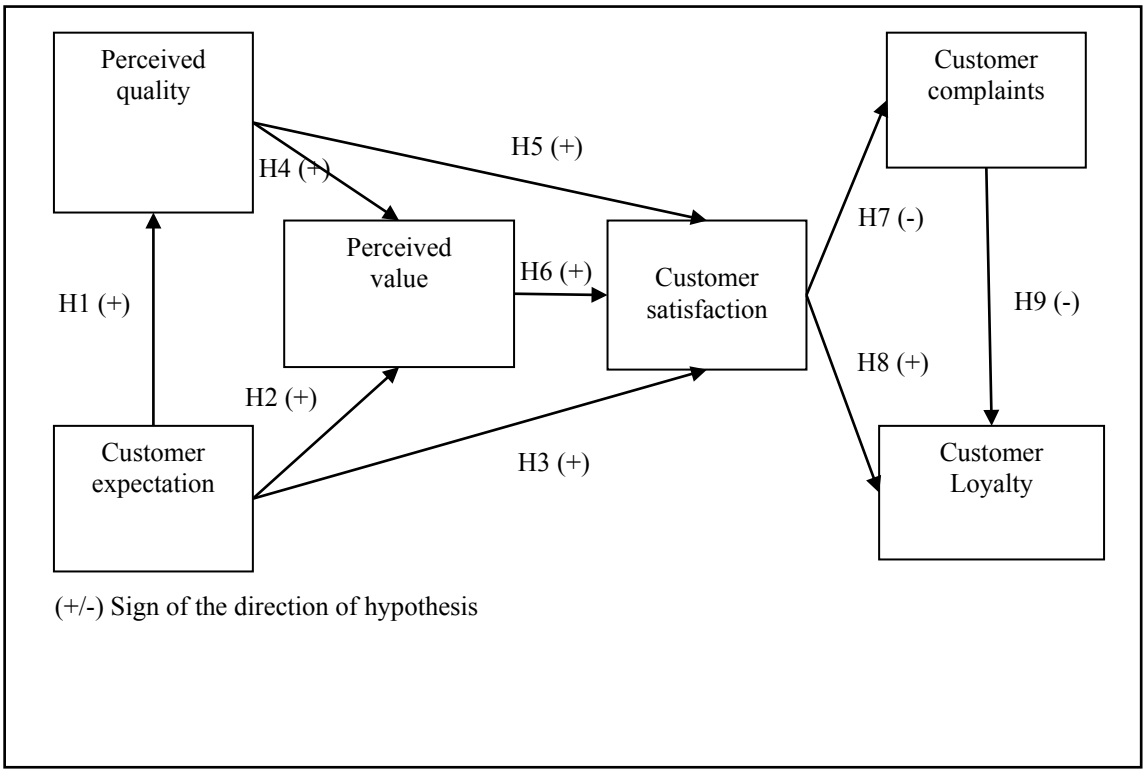
Many organisations have applied the ACSI model in their marketing in order to assess customer satisfaction towards their products and services. A key point of the model is the ability to use similar types of questions to measure customer satisfaction towards a variety of products and services as well as the ability to compare the results. This means the results can be applied at the micro level in order to ascertain customer satisfaction and as a resource to create the ability to compete, as well as at macro level - from industry sectors to encompass the country as a whole. The model can also be used to analyse factors affecting consumer behaviours, which can be applied to develop and improve the effectiveness of an organisation.

Another ability of this model is the ability to predict business outcomes (Fornell et al., 1996; Johnson et al. 1995). Many studies have shown a correlation between results from application of the model and business outcomes (see for examples, Fornell et al, 1995; Ittner and Larcker, 1996; Martin, 1998; Mazvancheryl et al, 1999)

Many countries around the world have started paying more attention to measuring customer or consumer satisfaction at the national level, including Africa, America, Asia and Europe. Countries that have adopted the ACSI model and developed it to suit the context of their own country include New Zealand and Taiwan (Fornell et al., 1996), Austria (Hackl et al. 1996), Norway (Andreassen and Lervik, 1999; Andreassen and Lindestad, 1998) and Thailand (TCSI) (Thailand Productivity Institute, 2012).

The current study used ACSI and TCSI as a model for analysis. Therefore, an important question for the current study is whether the ACSI and TCSI model can explain customer behaviour in the use of online banking as provided by Thai commercial banks in the same way as it has for other countries that have used the ACSI model. Thus, the researcher came up with a conceptual model comprised of nine hypotheses in order to find the answer, as shown in Figure 1. The hypotheses are as follows.

FIGURE 1
CONCEPTUAL MODEL



Hypothesis 1 (H1): *There is a positive relationship between customer expectation and perceived quality on the use of online banking service offered by the commercial banks.*

Hypothesis 2 (H2): *There is a positive relationship between customer expectation and perceived value on the use of online banking service offered by the commercial banks.*

Hypothesis 3 (H3): *There is a positive relationship between customer expectation and customer satisfaction on the use of online banking service offered by the commercial banks.*

Hypothesis 4 (H4): *There is a positive relationship between perceived quality of the service and perceived value on the use of online banking service offered by the commercial banks.*

Hypothesis 5 (H5): *There is a positive relationship between perceived quality of the service and customer satisfaction on the use of online banking service offered by the commercial banks.*

Hypothesis 6 (H6): *There is a positive relationship between perceived value of the service and customer satisfaction on the use of online banking service offered by commercial banks.*

Hypothesis 7 (H7): *There is a negative relationship between customer satisfaction and customer complaint on the use of online banking service offered by the commercial banks.*

Hypothesis 8 (H8): *There is a positive relationship between customer satisfaction and customer loyalty on the use of online banking service offered by the commercial banks.*

Hypothesis 9 (H9): *There is a negative relationship between customer complaints and customer loyalty on the use of online banking service offered by the commercial banks.*

If the TCSI model, which was adjusted from the ACSI model, can explain consumer behaviour as hypothesized previously then we can use the TCSI model in calculating customer satisfaction level on the use of online banking of the commercial banks in Thailand.

RESEARCH METHODOLOGY

This study was limited to the use of services via the internet through various devices such as smartphone, personal computer, laptop and tablet PC. As each commercial bank in Thailand has its own online banking system, in order to select the banks to represent commercial banks in Thailand, non-interest income will be considered. This non-interest income will exclude income from Acceptance, Aval, and Guarantee since these incomes are generated from customers taking loans from the bank, not from using the online service. In 2011, there were 32 commercial banks in Thailand including foreign commercial banks with branches in Thailand with total non-interest income of 109,856 million baht (Bank of Thailand, 2012). When calculating the non-interest income in the form of market share and selecting the bank with the highest market share to be used on the customer satisfaction survey on online banking, it was found that six major banks held the largest market share: Siam Commercial Bank, Kasikorn Thai Bank, Bangkok Bank, Krung Thai Bank, Bank of Ayudhya, and Thai Military Bank, in that order. Together, these banks hold 83.22% of the market, which makes them good representatives of commercial banks in Thailand for this study.

After selecting the commercial banks that would be included in the study, the sample size to be used in the study was determined, using as a foundation a survey conducted by the Thailand Productivity Institute (Thailand Productivity Institute, 2012), which in turn based its study on similar surveys conducted in the United States and South Korea where the sample size was 278 samples per product brand. The Thailand Productivity Institute set its sample size at 300 samples per bank, as its study was a pilot project that drew population samples from the greater Bangkok Metropolitan Area, as well as surrounding provinces Pathum Thani, Nonthaburi and Samut Prakan.

Given the limitations of time and budget, this study will utilize a total of 400 samples. The samples were apportioned to be representative of the Thai population as a whole, using data from the National Statistical Office based on a population survey (Thailand National Statistics Office, 2012). This provided

the researcher with the proportionate population in Thailand's various regions to use as a criterion in the survey sample.

The survey developed by Thailand Productivity Instituted formed the basis for this study. The original survey used by the Institute was developed by the United States, with some changes made to reflect the context of Thailand and some questions added in order to supplement future analysis. The survey was undertaken via direct interview with users at service counters of six selected financial institutions. This research, however, conducted the survey via both an interview and an online questionnaire. The general guidelines required that the respondent had used the services in question within the past three months, must be between 18-59 years of age and not employed by a financial institution, or a marketing research or advertising firm. The age selection was done to allow the survey to reflect Thailand's population structure as of 2011, using population information from the Thailand National Statistics Office (Thailand National Statistics Office, 2012).

This study has adapted questions from TCSI, which is originally based on ACSI model. The ten-level Likert scale is used to measure customer satisfaction, ranging from the least likely (1) to the most likely (10). An exception is the variable on customer complaints, where a ratio scale is used. The questions are based on questions in the TCSI model by Thailand Productivity Institute, adjusted to make it applicable to this survey. Details are shown in Table 1.

TABLE 1
VARIABLES AND QUESTIONS USED IN THE SURVEY ADAPTED FROM TCSI

Variable	Question
Customer Expectation	How do you perceive the overall quality of the bank's online banking service?
	How well do you expect the bank's online banking service to respond to your personal needs?
	How often do you expect the bank's online banking service to have an error or defect in the service?
Perceived Quality	Which level of quality did you think you receive from the overall service of online banking?
	How well did the bank's onling banking service respond to your personal needs?
	How often did the bank's online banking service produce errors or defects?
Perceived Value	When compared with the quality of the service that you received, do you think that the service fees or transaction fees for online banking is appropriate?
	When compared with the cost, do you think that the quality of online banking service that you received is appropriate?
Customer Satisfaction	Level of overall satisfaction with using the bank's online banking service.
	Do you think that the overall service of online banking you received is better or worse than your expectation?
	How does the level of service you received compare with what you expected from online banking?
Customer Complaint	How many times have you ever officially complained or expressed dissatisfaction regarding the bank's online banking service?
	How many times have you ever unofficially complained or expressed dissatisfaction regarding the bank's online banking service?
Customer Loyalty	Would you recommend other people to use the online banking service offered by the bank?
	Will you continue using the online banking service from the bank?

This study used questionnaires given both in person and online. The 10-point Likert scale is generally used to measure satisfaction, both in the ACSI and the TCSI, the latter of which this study used as a prototype. The questions and measurement scale are standard and accuracy and reliability have been tested.

After data collection, descriptive statistics was used to describe the demographic characteristics of the sample. Later Structural Equation Model (SEM) technique was used to test the model. This method was also previously applied in ACSI and TCSI model.

RESULTS

Out of 310 returned questionnaires, only 305 responses were able to be used in the analysis. Those responding were 48.06% male, with 14.84% single, 32.51% married and 0.71% divorced. 51.94% were female, of whom 39.22% were single, 21.37% were married and 0.35% were divorced.

In terms of age, within the range of 18-59 years of age, the majority of respondents who used online banking were 30 to 39 years of age, accounting for 39.99%, with 29.17% aged between 25 to 29 years.

Regarding educational level, majority of respondents had a bachelor's degree (56.82%) while 39.99% had a master's degree. By employment, 43.94% were employees in private companies, 18.94% were business owners and 13.64% were government and or state enterprise employees.

It was also found that 40.15% of respondents had an income level of above 45,000 Thai Baht, the income of 24.62% of respondents was between 15,000–25,000 Thai Baht and 14.02% had income of less than 15,000 Thai Baht.

The questionnaires also showed that the top three banks used by the respondents most often in the prior three months were Siam Commercial Bank (31.32%), Kasikorn Thai Bank (30.60%), and Bangkok Bank (17.44%).

As for official complaints, there were 140 official complaints; it was found that 52.86% had made no complaint on the official complaint channel. The top three channels used to make official complaints were bank call centres (19.53%), employees at bank branches (12.12%), and email (7.41%).

There were 271 unofficial complaints, with 52.86% of the respondents making no official complaints. Of the respondents, 16.61% voiced their complaints to employees at bank branches; 8.49% made their complaints on social networks.

The respondents were asked to rank the features of online banking services from the services they used the most to those used the least. The greatest number of respondents (51.60%) used the online service to check their balances, with 33.45% using the service to transfer funds within the bank and 28.11% using the services to pay their bills.

Test of Model

The model has two estimation models: the measurement model and the structural model. The measurement model estimates the loading values of the observed variables in order to investigate how well each observed variable represents the latent variable. The structural model on the other hand estimates the path coefficients of the latent variables and shows the causal relationship between the latent variables.

Measurement Model

Loading values were obtained through an analysis of the data. Most of loading value of an observed variable are greater than 0.7, reflecting well on what it will measure. Loading values are shown in Table 2 below.

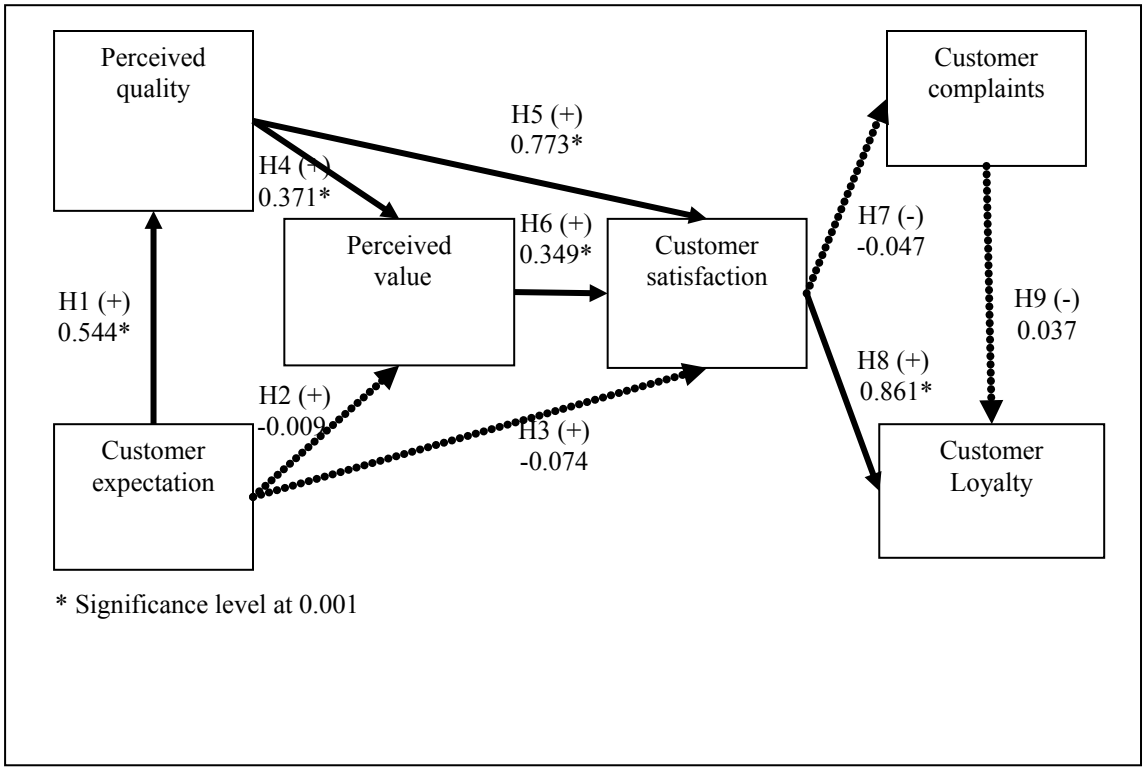
TABLE 2
LOADING VALUES OF MEASUREMENT MODEL

Variables	Loading values
Customer Expectation	
How high are your expectations of the overall quality of the bank's online banking service?	0.875
How well do you expect the online banking service to respond to your personal needs?	0.900
How often do you expect the online banking service to have errors or defects?	-0.234
Perceived Quality	
What level of quality do you receive overall from the online banking services?	0.859
How well does the online banking service respond to your personal needs?	0.881
How often does the online banking service produce errors or defects?	-0.143
Perceived Value	
When compared with the quality of services received, do you think that the service fees or transaction fees of online banking are appropriate?	0.842
When compared with the cost, do you think the quality of online banking services that you receive is appropriate?	0.911
Customer Satisfaction	
Level of overall satisfaction from using the online banking service provided by the bank	0.910
Is the overall service of online banking better or worse than your expectation?	0.818
How good is the bank's online banking service compared to what you expect from online banking?	0.813
Customer Complaint	
How many times have you made an official complaint to the bank or expressed dissatisfaction regarding its online banking services?	0.646
How many times have you made an unofficial complaint to the bank or expressed dissatisfaction regarding its online banking service?	0.561
Customer Loyalty	
Would you recommend the bank's online banking service to others?	0.702
Will you continue using the online banking service from the bank?	0.793

Structural Model

Relationship between latent variables can be measured by path coefficients as shown in Figure 2 below.

FIGURE 2
RELATIONSHIP BETWEEN LATENT VARIABLES



Data from the respondents supports the model created for this study. The model has chi-square/df value = 2.942, GFI = 0.923, NFI = 0937 and RMSEA = 0.08. These values fall within an acceptable range (Byrne, 2010), indicating that this model is suitable for the data received from the study.
In the analysis of the structural model, four hypotheses (2, 3, 7 and 9) are rejected and the remaining five (1, 4, 5, 6 and 8) are accepted. Details are as follows.

Hypothesis 1 (H1): There is a positive relationship between customer expectation and perceived quality on the use of online banking service offered by the commercial banks.
The model test found that the regression coefficient between customer expectation and perceived quality of the service is 0.544, a positive relationship and statistically significant. This is consistent with the hypothesis that indicates that customer expectations are positively correlated with the perceived quality of the service. Those who have high expectation in online banking service tend to be those who gain more perceived quality of the service.

Hypothesis 2 (H2): There is a positive relationship between customer expectation and perceived value on the use of online banking service offered by the commercial banks.
The regression coefficient between customer expectations and perceived value of online banking services is not statistically significant. This is contrary to the previous hypothesis. It means that customer expectations had no influence on the perceived value of the services. Respondents with either high or low expectation perceived the value of service in the same way.

Hypothesis 3 (H3): There is a positive relationship between customer expectation and customer satisfaction on the use of online banking service offered by the commercial banks.

The relationship between customer expectations and customer satisfaction is not statistically significant. This is inconsistent with the hypothesis that customer expectation is related to customer satisfaction. However, when estimating the total effect, it was found that there is an indirect effect through variables of perceived quality and perceived value of the services provided. This total effect is similar to a study of customer satisfaction on financial and insurance institutions in the United States that applied the ACSI model (Fornell et al, 1996), which found that customer expectations do not have a direct effect on customer satisfaction.

Hypothesis 4 (H4): There is a positive relationship between perceived quality of the service and perceived value on the use of online banking service offered by the commercial banks.
The regression weight between perceived quality and perceived value of the service is 0.371, which is a positive and statistically significant. This indicates that perceived quality is related to perceived value of the service. This suggests that commercial banks need to improve their online banking service quality as this will impact the perceived value of their services.

Hypothesis 5 (H5): There is a positive relationship between perceived quality of the service and customer satisfaction on the use of online banking service offered by the commercial banks.
The regression weight between perceived quality of service and customer satisfaction is 0.773, which is positively related and statistically significant. Thus this finding is consistent with the hypothesis that the perceived quality of the online banking services has a strong effect on customer satisfaction. In addition, not only does the perceived quality of the service have a high direct impact on customer satisfaction, it also has a high indirect impact via the perceived value of the service.

Hypothesis 6 (H6): There is a positive relationship between perceived value of the service and customer satisfaction on the use of online banking service offered by commercial banks.
The results of the model test show a positive and statistically significant relationship between perceived value of the service and customer satisfaction of 0.349. This is consistent with the hypothesis that perceived value of the service has a direct impact on customer satisfaction.

Hypothesis 7 (H7): There is a negative relationship between customer satisfaction and customer complaint on the use of online banking service offered by the commercial banks.
The relationship between customer satisfaction and customer complaints is not statistically significant and thus not consistent with the hypothesis that customer satisfaction affects customer complaints. It also indicates that customers in Thailand are unlikely to file a complaint with the bank even though they perceive the service as unsatisfactory.

Hypothesis 8 (H8): There is a positive relationship between customer satisfaction and customer loyalty on the use of online banking service offered by the commercial banks.
Customer satisfaction and customer loyalty has a regression weight of 0.861, thus positively related and statistically significant. It is consistent with the hypothesis that satisfied customers are loyal customers. They will continue using the service and suggest others use it as well.

Hypothesis 9 (H9): There is a negative relationship between customer complaints and customer loyalty on the use of online banking service offered by the commercial banks.
The final hypothesis, the relationship between customer complaints and customer loyalty, is not statistically significant and thus disproves the hypothesis. That is, customer complaints have no effect on customer loyalty or their use of the bank's online banking service. This is probably due to the ease of access and the difficulty in changing to another bank's online services. Hence, customer complaints do not affect customer loyalty towards the use of online banking services.

DISCUSSIONS AND CONCLUSIONS

The overall findings on the factors affecting customer satisfaction with online banking services show that customer expectations towards the quality and value of the service have an effect on their satisfaction and loyalty. These factors are consistent with the previous findings as well as the related models, i.e. the ACSI and the TCSI models.

The findings also show that the model can help determine the factors that affect other important factors, making it possible to use those factors to develop and improve a bank's online banking services.

The expectation factor suggests that providing information and creating customer awareness – which leads to customer expectations – may not directly affect customer satisfaction but may affect this indirectly through perceived quality and perceived value. This would mean that emphasising service quality, its convenience and ease of fund transfers between accounts in the same bank or even cross-bank transfers, a wide range of bill payment alternatives and guaranteed accuracy with clear help windows, has an impact on the perceived value of the service.

The value given to customers, such as reasonable transaction fees, no charge for transfer of funds within the bank or a lower fee for cross-bank transfers within the same area has a significant effect on customer satisfaction. A more satisfied customer means a more loyal customer, which eventually flows through to the bank's profit (Reichheld and Sasser, 1990). Combined these are key to operating a successful service business. Satisfied customers rarely file complaints and are overall more loyal to the bank.

This study gives a greater understanding of the factors that are important to development of an effective online banking system and meets customer needs and expectations. This will in turn result in customer satisfaction and loyalty.

Using these factors to further develop a bank's online banking system would not be a waste of resources, since commercial banks would see clearly the factors that would lead to meeting customer needs and thus customer satisfaction. Moreover, the study can be used as an indicator to assess whether the existing system meets customer needs and the level of customer satisfaction, leading to greater competitiveness in the online banking service arena.

At the same time, development of the online banking system cannot be limited to just the factors in this study, but needs to consider other items that are correlated with the customer satisfaction model in order to maximize customer benefit and further develop the industry. As a general rule, the model should be run once a year in order to ascertain current customer satisfaction levels on online banking services. The researcher trusts that the findings of this study will be useful for the business sector and aid them to achieving greater success in their business operations.

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