The Moderating Role of Customer Knowledge on the Relationship between Customer Satisfaction and Loyalty

Chu-Ching Wang, Yu-Min Wang , and Wei-Heng Chieh

Abstract—**Although some researchers recently which touched on the relationships among service quality, customer satisfaction, and customer loyalty, the service quality was measured based on the five dimensions of PZB and single overall accumulated index. However, this study will re-define service quality based on the core element of service construct "service is a process" — service evidence including 3P (People, Process, and Physical Evidence) — to specify and simplify effectively the quality of service dimensions and to measure and analyze the three evidences of service individually. In addition, the "knowledge" will be regarded as the moderator in this study for exploring whether it influences customer loyalty directly or indirectly.**

This is a quantitative empirical study which collects data from the customers of the banking industry by survey. The Structured Equation Model (SEM) and regression model are used to analyze the 407 effective questionnaires. Some important findings are: 1) customers' perceived qualities of both service people and service process have positive influence significantly on whole customer satisfaction, 2) although the customers' perceived quality of physical evidence has positive influence on whole customer satisfaction, it is not significant, 3) as the results in much of the previous research, the impact of customer satisfaction on loyalty is significantly positive, and 4) not only does the knowledge of customer have significantly positive relationship with loyalty, it has also a moderating effect between both satisfaction and loyalty.

Index Terms—**Customer satisfaction, customer loyalty, customer knowledge, service quality, service evidence.**

I. INTRODUCTION

Since the 21st century, the retail service sector is becoming more and more competitive in the international market, coupled with domestic and international mergers and acquisitions (M&A) as well as the diverse and demanding needs of customers, so that service providers should try to meet rising customer expectations [1]. Therefore, service providers must continue to provide innovative and differentiated services to meet customer needs, improve customer satisfaction, and provide a higher quality of service than competitors [2]. The retail services sector has long been the most developed, the highest output and most competitive service category (type) in Taiwan, of which the financial and banking industries play more representative roles. Therefore, this paper aims to conduct research for the banking sector.

There are many factors which influence customer's assessment on service value, including service quality, product quality, price, and other personal factors and situational factors, of which the "quality of service" is the most critical factor in customer satisfaction [3]. In short, the "quality of service" refers to the gap between customers' service expectations and service perceptions". If the cognition that the customer accepts after service delivery is greater than or equal to expectations, that will come to a satisfaction and even surprise; and vice versa.

Service is a process, which is often invisible, abstract and difficult to clearly describe [3]. Therefore, for service providers to fully design and effectively manage entire service process is not easy. Some researchers have actively explored how to strengthen the service process (design) in order to improve efficiency and create differentiated characteristics of service [4], [5]. Since the quality of service process design will determine the follow-up of the entire service process performance, and thus affect customer perception of service quality; therefore, how to develop and design the entire service process objectively and systematically will be critical [6]. Moreover, applying a service blueprint to carry out the service process design should be an effective method [7]. Three elements of the service blueprint 3P is unique in the service sector. 3P means Personnel (personnel include service staff and customers), Process, and Physical Evidence. The 3P is the most important indicator used to recall and identify the service sector, so it is also known as "service evidence" [3]. The service construct in this research is "service is a process ", and the three service evidences may be sufficient to explain the entire quality in the service process. Therefore, this study suggests that using the 3P of services evidence as a measure of the perceived quality on customer service provided by service providers will be more appropriate and suitable. In addition, it seems to be easy to carry out the quality improvement and service innovation in practice through systematic and logical process of services blueprint.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A. The Relationship between the Perceived Quality of Service Evidence Dimensions and Customer Satisfaction

Much research has reported the perception of overall service quality is an antecedent of customer satisfaction [8], [9], i.e. the overall perception of service quality and customer satisfaction does exist causality [10]. However, few have investigated the link between each of the service quality dimensions and satisfaction and have reported some mixed

results. In all, the three dimensions of service evidence should be important predictive factors of customer satisfaction. In view of this, this study presents the following three hypotheses:

H1. As customer perceptions of the personnel dimension of service evidence become more favorable, customers will feel more satisfied towards the bank.

H2. As customer perceptions of the process dimension of service evidence become more favorable, customers will feel more satisfied towards the bank.

H3. As customer perceptions of the physical evidence dimension of service evidence become more favorable, customers will feel more satisfied towards the bank.

B. Effect of Customer Satisfaction on Customer Loyalty

Lots of researches have confirmed that satisfaction is an important determinant of customer loyalty [11]-[13]. we also expect satisfaction to be related to customer loyalty; under these circumstances, this study presents the following hypothesis:

H4. The greater the satisfaction with the bank, the greater will be loyalty towards the bank.

C. Effect of Customer Knowledge on Customer Loyalty

Wirtz and Mattila [14] argued that customers often consider loyalty to be an effective risk reduction strategy, and then they proposed that individuals with higher levels of knowledge and expertise would have lower risk perceptions and switching costs, and hence, would exhibit decreased loyalty levels. Therefore, knowledge was highly negatively associated with loyalty, leading to our next hypothesis:

H5. The greater the level of knowledge, the lower will be the loyalty towards the bank.

D. Moderating Effects of Knowledge

Experts tend to base their liking of a service provider on a wide range of information obtained from many sources, whereas novices tend to rely more on their evaluation of past experiences with the service provider [15]. Homburg, Wieseke, and Bornemann proposed that to improve the performance, a company has to identify the knowledge of customer's hierarchy of needs [16]. Therefore, the link between satisfaction and loyalty is likely to be weaker for customers with knowledge, hence leading our last hypothesis:

H6. The greater the level of knowledge, the weaker the relationship will be between customer satisfaction and loyalty.
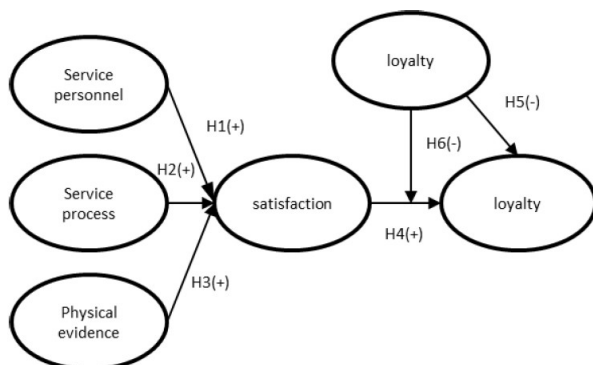

Fig. 1. Conceptual framework.

III. RESEARCH METHOD

A. Conceptual Framework

The main purpose of this study was to investigate the customers' perception of service evidence of service process 3 dimensions provided by banks, and its impact on overall service, followed by discussing the relationship among satisfaction, loyalty and knowledge. The conceptual framework of this study is presented in Fig. 1.

B. Data Collection

Subjects were invited to fill in questionnaires from May 10th, 2014 to June 10th, 2014, and total 500 questionnaires were distributed and resulted in 425 completed questionnaires with a response rate of 85%. After deducting the 18 invalid questionnaires, a total of 407 was the sample analyzed in this study.

C. Data Analysis Methods

This study is a quantitative empirical research, and the main purpose is to explore the causal relationship among service evidence, satisfaction and loyalty. In other words, to effectively test the six hypotheses, this study used the following statistical analysis method:(1)Focus group discussion(2) Factor analysis(3)Pearson's product-moment correlation analysis(4) The structural equation model (SEM) analysis(5) Regression Analysis.

D. Data Analysis and Findings

It can be seen from Table I that service personnel (parameter estimate = 0.523, t-value = 6.282) and service process (parameter estimate = 0.472, t-value = 5.976) were significantly related to customer satisfaction. However, physical evidence was not significantly related to customer satisfaction. Therefore, while H1, H2 are accepted, H3 is rejected. Furthermore, satisfaction was significantly and positively related to customer loyalty (parameter estimate = 0.175, t-value = 2.234), whereas knowledge was significantly but negatively related to customer loyalty. Therefore, both H4 and H5 are accepted.

TABLE I: STRUCTURAL MODEL ESTIMATES

	Estimates	Standard error	CR	P value	Standardised estimates
Service personnel→ Satisfaction	0.523	0.108	6.282	0.006	0.455
Service process→ Satisfaction	0.472	0.098	5.976	0.000	0.438
Physical evidence→ Satisfaction	0.175	0.026	2.234	0.351	0.273
Satisfaction→Loyalty	0.688	0.123	7.287	0.000	0.589
Knowledge→Loyalty	-0.178	0.156	-2.523	0.004	-0.221

Notes: χ^2_{407} = 456.18 （p=0.000）, GFI=0.86, AGFI=0.83, CFI=0.95, IFI=0.93, RMSEA=0.053.

In order to test the moderating effects of knowledge between satisfaction and loyalty, we followed the procedure presented by Slater and Narver [30] to conduct regression test, which consists of fitting the regression equation shown below:

$y = \alpha + \beta_1 x + \beta_2 z + \beta_3 x\,z$ in which y is the dependent variable, α is an intercept term, β_1, β_2 and β_3 are regression coefficients, x is an independent variable, z is a moderator variable, and xz is interaction variable (e.g. satisfaction × expertise).

The regression results indicated a positive and significant beta value for satisfaction ($\beta_1=0.605$, $p < 0.001$, t value=11.52), a negative and significant beta value for knowledge ($\beta_2= -0.318$, $p < 0.001$, t value = -6.225) and a positive and significant beta value for the satisfaction/knowledge interaction term ($\beta_3=0.154$, $p < 0.005$, t value =3.37). The results clearly indicate that knowledge moderates the relationship between satisfaction and loyalty, and hence H6 is also accepted (reverse sign).

IV. CONCLUSIONS AND SUGGESTIONS

A. Conclusions

Three service blueprint constructs - 3P (People, Process, Physical Evidence) — is one of the most critical factors affecting service quality and customer satisfaction in marketing and management of the service sector. The purpose of this study is to explore the quality perception of customers towards 3P and consequent generation of overall satisfaction and loyalty. Due to fierce competition in recent years in the banking industry in Taiwan, and for the pursuit of stability and growth, banks not only do their best to improve service quality in order to retain existing customers, but also continue to introduce new variety of products to develop new customers and convince existing customers to repurchase in order to increase market share. Since new financial products continue to be introduced resulting in customer loyalty facing a major challenge, customer knowledge towards financial products is one of the important factors affecting potential customers' decision to buy and existing customers' decision to repurchase. Therefore, this study also explores the impact of knowledge on customer loyalty.

This study was based on 407 effective samples to conduct relevant statistical analysis, which aimed to investigate the role of different dimensions of service evidence (blueprint) on loyalty via satisfaction, and the relationship between customer knowledge and loyalty, and to explore the moderating effects of knowledge on the relationship between satisfaction and loyalty. We found that service personnel and service process have a direct and significant effect on satisfaction. However, our data does not confirm the links from physical evidence to satisfaction. Moreover, as past studies have found, we found satisfaction to be significantly and positively related to loyalty. As for knowledge, we found a negative relationship between knowledge and customer loyalty. In addition, the data revealed a negative moderator effect of knowledge on the relationship between satisfaction and loyalty. We conclude that as knowledge levels increase, customers are more likely to switch service brands rather than continue to retain the same brand.

B. Managerial Implications

This study is a causal empirical research, and findings can be used as a practical prediction function. Accordingly, in order to improve customer satisfaction and loyalty, managers can focus on the related managerial practices that can enhance service personnel and services process performance. For example: enhance service personnel empowerment and EQ; enhance workplace ethics and professional knowledge education and training; and develop new services; improve processes, and innovate, etc.

As the knowledge of the customer will affect their loyalty and would interfere with the relationship between satisfaction and loyalty, banks should therefore pay attention to the management of customer's knowledge. Some specific suggestions are as follows: a) maintain good customer relationship management (CRM), and pay attention to the dynamic context of existing customers, such as changes in demand and demographic variables; b) conduct distinct and clear market segmentation such as segment according to new / old customers ; c) conduct competitive intelligence (CI) analysis and management; d) listen actively to your customers and allow customers to participate, such as the development of new services, improving the proposal and other activities; and e) continue to educate customers so that they have the appropriate knowledge.

Ensuring customer loyalty and retaining existing customers in the highly competitive market is one of the most important strategies. However, because knowledge of the customer is constantly upgrading, therefore some of the more persistent competitive strategic practices such as overall corporate image system (CIS) planning and design, building a professional image brand, word of mouth marketing, and service culture shaping, will be more important.

C. Future Research Suggestions

This study adopted convenience sampling to carry out analysis and selection of samples, and we found that this study should possess a certain degree of generalization effect. However, this study is aimed primarily at customers with a relative rationality and high degree of knowledge to do analysis in Taipei (capital of Taiwan). Moreover, future research could be explored in another cities, counties or townships, etc. for comparative analysis In order to get more objective inferences.

This study used the service blueprint 3P to measure customer perception of service quality, so it is worth exploring the relationship between service blueprint 3P and other measured constructs proposed by other researchers (such as the five service quality dimensions of PZB). Future studies could also search for whether there are other moderators affecting the relationship between satisfaction and loyalty. Additionally, in order to know whether other sectors have same effect, future studies could investigate the effect in different sectors.

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