

## A Study on the affecting factors of Kakao Bank usage in terms of service types\*

Jun Byoungho\*\*

서비스 유형에 따른 카카오펁크 이용 영향 요인에 관한 연구  
전 병 호

### 〈Abstract〉

The purpose of this study is to analyze the adoption of Kakao Bank in terms of benefits (functional, social, experiential, economic benefits) and differentiated services (customization and service diversity) considering service types. Benefits are personal value consumers attach to the product or service attributes and, therefore, more important than attributes of service itself when using Kakao Bank in the internet based environment. Data was collected using an online and offline survey of 131 Kakao Bank users and analyzed the data using structural equation model (SEM). The results of empirical analysis using SmartPLS show that functional benefit, experiential benefit, and customization are significantly related to the user's satisfaction, but economic benefits, social benefit, and service variety are not. Customer's satisfaction are also showed significantly to be related to the all types of Kakao Bank usage(balance check, transfer, and other services).

This study has the significance in that it examines the user's satisfaction and usage of Kakao Bank in terms of benefits and differentiated services while other studies analyzed banking services focusing on the attributes of banking channel itself.

Key Words : Internet-only Bank, Kakao Bank, Benefits, Differentiated Service, Satisfaction

### I. Introduction

With the advent of internet banking, a large part of the services that are offered by banks can be

provided online as well and many banks are closing offline branches and concentrating on improving online channels[1]. Even more banks that use internet as the only channel of banking services has come to exist, which called 'internet-only bank'. Internet-only Bank do not have any physical infrastructure resulting in costs savings. Instead, they invest in high end computer infrastructure that

\* This paper is revised and expanded version of a paper which was presented at ISTE, Praha, 7, 2019.

본 연구는 2019년도 서울여자대학교 교내학술연구비의 지원을 받았음.

\*\* 서울여자대학교 기초교육원 부교수

allows them to serve their customers in better and faster ways[2]. Internet-only Bank is a kind of self-service bank targeting small-scaled retail finance. Internet-only Bank is providing services only through the internet and limited call center services are provided without face-to-face channel. As a mean to encourage development of fintech Internet-only Bank has emerged in Korea[3]. Two Internet-only Banks in Korea, KaKao Bank and K-Bank have started their operation in 2007. The introduction of Internet-only Banks in Korea has decreased the market price of financial products and banking services resulting in causing healthy competition in banking industry.

As of September 2019, the users of K-Bank has recorded only 1.1 million but the users of Kakao Bank has exceed 10 million[4]. It is said that Kakao Bank is more easier to use and provides much fun marketing events using Kakao talk application than K-Bank. Especially Kakao Bank is in good odor with the young generation by providing fun and social relationship. More than 80% of users are 20's(46.4%) and 30's(42.8%). This study, therefore, targets on the users of Kakao Bank.

Kakao Bank creates customer value by providing time optimization, immediate and customized information, fun and instant connectivity, great convenience and interactivity[3]. That is, customer use Kakao Bank due to the various benefits compared with internet banking and mobile banking which are provided by traditional banks. Benefits are the personal values consumers attach to the product or service attributes and they are often linked to fairly basic motivations of purchasing[5]. However, prior banking-related studies have

focused on the attributes of banking channel itself by adopting traditional IT adoption models such as TAM (Technology Acceptance Model), IDT (Innovation Diffusion Theory) and UTAT (Unified Theory of Acceptance and Use of Technology). Those studies have focused on the attributes of banking channel itself rather than customer's benefits[1, 6].

While prior banking-related studies have focused on the attributes of banking channel itself, this study intends to examine the adoption of Kakao Bank in terms of benefits (functional, social, experiential, economic benefits) and differentiated services (customization and service diversity) as well considering service types.

## II. Theoretical background

According to the result of meta analysis which examined the acceptance of mobile banking service targeting international journals between 2013 and 2016, the most frequent predictors of mobile banking service adoption are cost, risk, facilitating conditions, technology characteristics which are all about the channel attributes[7].

Several studies analyzed banking services and associated factors that influence consumers' adoption of it using a specific adoption theory or an extension of it, such as TAM, IDT, and UTAUT [6]. They usually also focused only on the attributes of banking channel and neglected the customer's subjective perception of benefits which banking services provide[1]. Those research trend has been experienced in the filed of Ssmart Bank and

Internet-only Bank[8-9].

However, it is necessary to investigate the relationship between the attitude and the usage in terms of user's subjective value, which are user's benefits, because customer has a tendency to use any service to get desirable benefits rather than to get attributes.

Benefits are the desirable consequences consumers seek when they buying and using products or services. Consumers don't buy and use products or services to get attributes; rather they think about products or services in terms of desirable and undesirable consequences – benefits[10].

Benefits can be distinguished into several categories according to the underlying motivations to which they relate[5, 10]. In the field of banking industry area, benefits have been adopted as utility benefit [11], perceived benefit [12, 14], and convenience value [13]. In this study benefits are categorized into 4; functional benefit, experiential benefit, social benefit, and economic benefit by adapting Jun's study[1, 17]. Functional benefit refers to non-monetary value experienced such as time and effort saving. Experiential benefit relates to what it feels like to use the product or service such as sensory pleasure. Social benefit is the more extrinsic advantages of product or service consumption such as social approval and personal expression. Economic benefit refers to Cheaper price and cost compared with other channels.

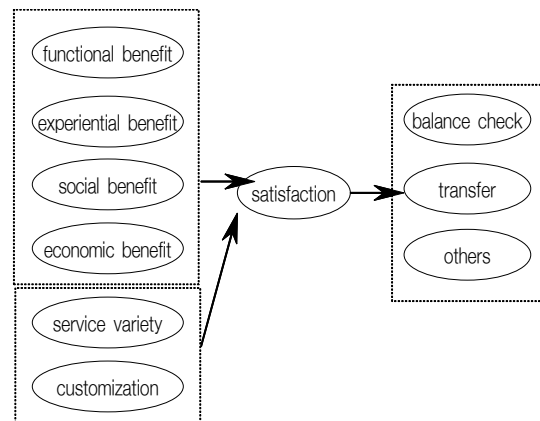
Benefits have been adopted by some studies on the adoption and use of smartphone and mobile applications[5, 14, 15, 16]. Functional benefit and experiential benefit, especially, were found to be

related to the customer's satisfaction using smart banking service[1].

Service variety and customization are also important factors of consumer's satisfaction. Broad range of products and services is one of significant predictor of consumer's motivations[18] and customized services are significantly related to the consumer's satisfaction[19].

### III. Research model and hypotheses

The primary purpose of this paper is to investigate the affecting factors of satisfaction, and usage of Kakao Bank in terms of service types as Figure 1.



<Figure 1> Research model

This study extended the prior research model of Jun's study[17] by categorizing the usage into three types; balance check, transfer and other services. Based on prior studies which are mentioned in theoretical background, benefits(functional, social, experiential, economic benefit) and differentiated

services(customization and service diversity) are identified as affecting factors of customer's satisfaction and usage and following hypotheses are established as follows.

- H1. Functional benefit will have a positive effect on customer's satisfaction of Kakao Bank
- H2. Experiential benefit will have a positive effect on customer's satisfaction of Kakao Bank
- H3. Social benefit will have a positive effect on customer's satisfaction of Kakao Bank
- H4. Economic benefit will have a positive effect on customer's satisfaction of Kakao Bank
- H5. Service variety will have a positive effect on customer's satisfaction of Kakao Bank
- H6. Customization will have a positive effect on customer's satisfaction of Kakao Bank
- H7. Customer's satisfaction will have a positive effect on usage of Kakao Bank in terms of service types.

The instruments measuring the constructs were adapted from the extant literature and revised considering the context of this research. The items were measured on a 5-point Likert scale using form 1(strongly disagree) to 5(strongly agree).

Service types are measured by the degree of frequency and regularity in terms of balance check, transfer, and other services[19].

#### IV. Empirical analysis

A questionnaire was used to collect data for this study targeting Kakao Bank users by on line survey randomly(1st qt, 2019). 131 responses were used as

a basis for the findings of this study. 76% of respondents use Kakao Bank more than 1 time in a week. 89% of respondents are 20's and 30's, which reflects real age specific rate of Kakao Bank in Korea.

<Table 1> Respondent's profile

		Frequency	Percentage
Age	20's	114	87.0
	30's	3	2.3
	40's	12	9.2
	50's	2	1.5
Frequency of usage	1/1 month	7	5.3
	2-3/1 month	24	18.3
	1/1week	28	21.4
	2-3/1week	23	17.6
	1/1day	22	16.8
	often	27	20.6
Degree of usage	low	20	15.3
	medium	19	14.5
	high	92	70.2
Device	Android	52	40
	IOS	79	60
Total		131	100

SEM (Structural Equation Model) was used for empirical test using SmartPLS. PLS is an extremely powerful multivariate analysis technique that is ideal for testing structural models with latent variables. This is a convenient and powerful statistical technique considered appropriate for many research situations[20], suitable for studying complex models with numerous constructs[21].

The measurement model was assessed for construct reliability, indicator reliability, convergence validity, and discriminant validity. Table 2, 3 lists the average variance extracted

(AVE), composite reliability (CR), factor loadings, and variable correlations. As shown in the table, the measurement model results indicate that the model has acceptable construct reliability[22], indicator reliability[23], convergence validity[21, 24], and discriminant validity[24], ensuring that the constructs are statistically distinct and can be used to test the structural model.

The analysis of hypotheses and constructs' relationships were based on the examination of standardized paths using the bootstrap resampling method[20, 21]. The results are summarized in Table 4. Functional benefit, experiential benefit, and customization were found to be significantly related to consumer's satisfaction, but social benefit, economic benefit, and service variety were not.

<Table 2> Confirmatory factor analysis

Construct	Items (Using Kakao Bank...)	Factor loadings (0.5)	Composite reliability (0.7)	AVE (0.5)	References
Functional benefit	is easy.	0.825	0.889	0.619	[1, 14, 16, 17, 18, 19]
	makes me save time in banking service.	0.800			
	has a value because it is easy.	0.783			
	make me easy for banking service.	0.861			
Experiential benefit	provides me enjoyment.	0.649	0.955	0.876	
	makes me pleasant.	0.908			
	makes me comfortable.	0.956			
Social benefit	makes me feel a community friendship.	0.942	0.776	0.551	
	makes my favorable impression to other people.	0.534			
	provides me steeze.	0.679			
Economic benefit	has an economic value compared with other channels.	0.950	0.806	0.677	
	The price is reasonable.	0.747			
	is economic.	0.893			
Service variety	is possible to get various banking service	0.722	0.860	0.674	
	is possible to get various events/promotions.	0.887			
	is possible to get alliance services with other on/off-line companies.	0.844			
Customization	is possible to get customized services.	0.865	0.925	0.805	
	is possible to get services what I need.	0.911			
	is possible to get services considering my situation.	0.914			
Satisfaction	was satisfied.	0.833	0.905	0.760	
	let me have positive evaluation.	0.927			
	let me think it was good.	0.852			
Balance check	I use balance check service a lot.	0.955	0.958	0.919	
	I use balance check service regularly.	0.962			
Transfer	I use transfer service a lot.	0.917	0.927	0.865	
	I use transfer service regularly.	0.942			
Others	I use other services a lot.	0.977	0.968	0.939	
	I use other services regularly.	0.960			

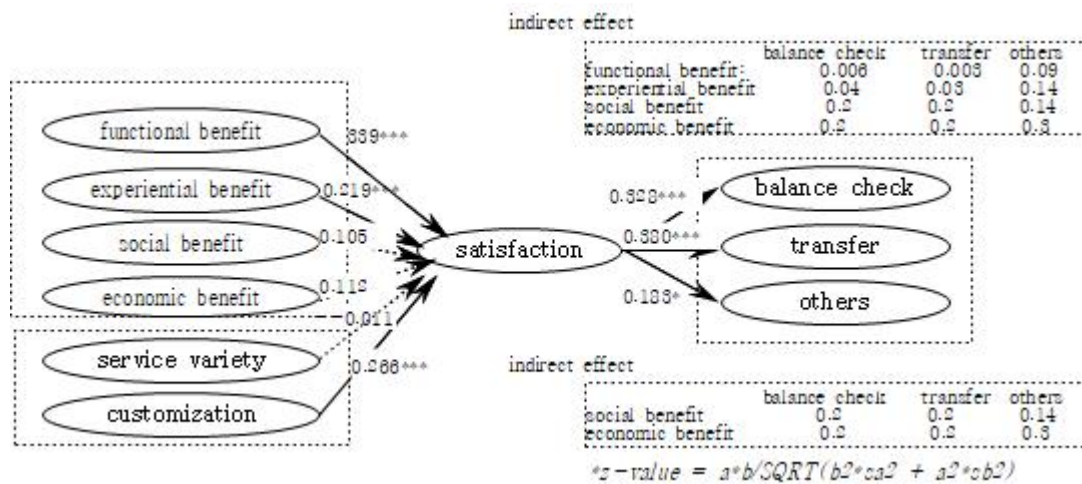
<Table 3> Correlation matrix and discriminate validity (AVE)

Factor	1	2	3	4	5	6	7	8	9	10
Functional benefit(1)	<b>(0.619)</b>									
Experiential benefit(2)	0.519	<b>(0.876)</b>								
Social Benefit(3)	0.301	0.345	<b>(0.551)</b>							
Economic benefit(4)	0.520	0.310	0.263	<b>(0.677)</b>						
Service variety(5)	0.193	0.379	0.228	0.184	<b>(0.674)</b>					
Customization(6)	0.395	0.391	0.289	0.445	0.339	<b>(0.805)</b>				
Satisfaction(7)	0.647	0.567	0.387	0.501	0.272	0.563	<b>(0.760)</b>			
Balance check(8)	0.266	0.143	0.154	0.154	0.177	0.224	0.328	<b>(0.919)</b>		
Transfer(9)	0.391	0.251	0.038	0.285	0.180	0.364	0.380	0.531	<b>(0.865)</b>	
Others(10)	0.244	0.325	0.131	0.123	0.278	0.183	0.183	0.320	0.228	<b>(0.939)</b>

<Table 4> Results of hypotheses testing

Hypotheses	Path	Estimate	t-value	Results	
H 1	Functional benefit → Satisfaction	0.339	4.458***	Accept	
H 2	Experiential benefit → Satisfaction	0.219	2.389**	Accept	
H 3	Social benefit → Satisfaction	0.105	1.249	Reject	
H 4	Economic benefit → Satisfaction	0.112	1.302	Reject	
H 5	Service variety → Satisfaction	-0.011	0.137	Reject	
H 6	Customization → Satisfaction	0.266	2.935***	Accept	
H 7	Satisfaction →	Balance check	0.328	3.485***	Accept
		Transfer	0.380	4.233***	Accept
		Others	0.183	1.675*	Accept

\*\*<0.1, \*\*<0.05, \*\*\*<0.001



<Figure 2> Research result

Consumer's satisfaction also has positive effect on balance check and transfer service. According to the values given in Table 4, hypotheses 1, 2, 6, are supported but hypotheses 3, 4, 5 are not supported. Hypothesis 7 were partially supported.

Mediating effect was examined using Sobel test(<http://quantpsy.org/sobel/sobel.htm>)[25]. The indirect effects were found only in functional benefit, experiential benefit, and customization same as direct effects. Mediating effects between those variables and balance check and transfer was significant at  $p < 0.05$  level. It implicates that the relationship between those variables(functional benefit, experiential benefit, and customization) and Kakao Bank usage by service types is supported by customer's satisfaction. Therefore, it is necessary to strengthen the customer's satisfaction for higher degree of Kakao Bank usage.

## V. Conclusion

Internet-only Bank means a bank that utilizes internet as the primary sales channel instead of establishing offline branches for face-to-face respond as the traditional bank does. In 2017, two Internet-only banks in Korea, Kakao Bank and K-Bank have started their operation and Kakao Bank has predominates over the users.

The launch of internet-only banks has brought many changes. As the existing commercial banks and internet-only banks have started the infinite competition, the maintenance of relationships with customers or the creation of new customers is important[2]. For this, it is meaningful to

understand the consumer's satisfaction and usage of Internet-only Bank. Therefore, this study examined the effecting factors of internet-only bank, especially Kakao Bank, in terms of benefits and differentiated services.

The results of empirical analysis show that functional benefit( $\beta = 0.339$ ,  $t\text{-value} = 4.458$ ), experiential benefit( $\beta = 0.219$ ,  $t\text{-value} = 2.389$ ), and customization( $\beta = 0.266$ ,  $t\text{-value} = 2.935$ ) are significantly related to the consumer's satisfaction, but social benefit( $\beta = 0.105$ ,  $t\text{-value} = 1.249$ ), economic benefit( $\beta = 0.112$ ,  $t\text{-value} = 1.302$ ), and service variety( $\beta = -0.011$ ,  $t\text{-value} = 0.137$ ) are not.

First of all, functional benefit such as quickness, easiness, trust, and effectiveness was found to be the most important factor for consumers to use Kakao Bank. It implicates that consumers appreciate Kakao Bank as easier and convenient banking channel with trust. As Kakao Bank which use smart-phone becomes a routine service in daily life, social benefit and economic benefit are not important factors for consumers any more. Social influence and economic value are not important for customers any more as in initial stage of Internet-only Bank. Instead, personalized and customized services play a great role in consumer's attitude toward Kakao Bank. Customized services which make fun and useful to consumers affect the consumer's banking behavior positively. That's why experiential benefit and customization were found to be related to the consumer's satisfaction. For example, Kakao Bank provide many customized fun marketing events and promotions which connect Kakao pay and Kakao card using Kakao friends. As the main users of Kakao Bank are 20's and 30's

who put value on fun and functionality, banking service provider, therefore, should consider this results when they make marketing strategies. It implicates that Internet-only Bank should be much easier and quickly with trust and fun to consumers and provide more useful customized services with consumers.

When it comes to the usage of Kakao Bank in terms of service types, consumer's satisfaction has effect on all service types positively. It implicates not only basic service but also other services are used variously as well in Kakao Bank.

This paper has the originality in that it examines the affecting factors of Kakao Bank in terms of benefits and differentiated services while prior studies have focused on the attributes of banking channels. Also this paper investigate the usage of Kakao Bank by categorizing service types into balance check, transfer, and other services instead whole service. Further study should consider the difference among devices which use Kakao Bank and degree of use among users by enlarging samples.

## References

- [1] Jun B.H., "An Empirical Study on the Adoption of Smart Banking in Korea," *INFORMATION*, 20(5B), 2017, pp.3471-3478.
- [2] Kim S.J. & Kim C.B., "The Effects of the Mobile-banking Characteristics and Internet-only bank Benefits on the Switching Value and the Use Intention," *Journal of the Korea Contents Association*, 18(8), 2018, pp.109-117.
- [3] Park M.H., "Influences of Character Marketing on Usage Intention of Internet-only Banks: Case of Kakao bank," Doctoral Dissertation, Yonsei University, 2017.
- [5] Keller, *Strategic Brand Management: Building, Measuring and Managing Brand Equity*, Prentice Hall, New Jersey, 2017.
- [6] Aijaz A. Shaikh and Heikki Karjalainen, "Mobile banking adoption: A literature review," *Telematics and Informatics*, 32, 2015, pp.129-142.
- [7] Gonçalo Baptista and Tiago Oliveira, "A weight and a meta-analysis on mobile banking acceptance research," *Computers in Human Behavior*, 63, 2016, pp.480-489.
- [8] Bae J.K., "A Study on the Determinant Factors of Innovation Resistance and Innovation Acceptance on Internet Primary Bank Services : Combining the Theories of Innovation Diffusion and Innovation Resistance," *The e-Business Studies*, 19(2), 2018, pp.91-104.
- [9] Jang E.G. and Lee J.M., "A Study on Consumer Usage Pattern, Satisfaction, and Continuous Use Intention for Internet-only Banks: Application of Use-diffusion Model," *Journal of Korean Consumption Culture Association*, 22(1), 2019, pp.69-94.
- [10] Peter J.P. & Olson J., *Consumer behavior: Marketing strategy perspectives*, Irwin, 1987.
- [11] Young-Mo Kwon, "A Study on the Affecting the Intention to Use of Smart-Phone Mobile Banking," *Review of business & economics*, 28, 2015, pp.529-549.
- [12] Seong Ok Hong and Hag Min Kim, "Behavior analysis of mobile banking user with smart phone," *International Commerce and*



- Information Review, 16, 2014, pp.35-54.
- [13] Seong Ho Lee, "The Impact of Convenience Value of Mobile Banking Service on Customer Satisfaction and Re-Usage Intention: The Moderator Effect of Technology Anxiety," Journal of Information Technology Services, 14, 2015, pp.1-14.
- [14] Noh M.J & Hwabgbo C., "A Study on Users' Intention to Use Considering Service Quality of Smartphone Banking," Information System Review, 25, 2016, pp.105-134.
- [15] Woo D.S., Moon J.B. & Yoo W.J., "A Study of the Satisfaction on the Social Networking Service Cognition to Personality Traits," The e-Business Studies, 14, 2013, pp.263-285.
- [16] Yim K.H., Kwon J.H. & Quan Z.X., "The Effect of Benefits of Mobile Application Use-Diffusion and Purchase Intention in Service Management," Journal of Digital Convergence, 14, 2016, pp.63-69.
- [17] Jun B.H., "An Analysis of the on-line Shopping Motivation of one-person Households using R," Journal of the Korea Society of Digital Industry and Information Management, 15(1), 2019, pp.123-132.
- [18] Jun B.H., "A Study of Consumer Behavior on Online Shopping Discount Event in Korea," Journal of the Korea Society of Digital Industry and Information Management, 14(2), 2018, pp.107-115.
- [19] Jun B.H., "A Study on the Affecting Factors of Smart banking in terms of user's benefits and personalization," Journal of the Korea Society of Digital Industry and Information Management, 12(4), 2016, pp.135-143.
- [20] Henseler J., Ringle C. M., & Sinkovics R. R., "The use of partial least squares path modeling in international marketing," Advances in International Marketing, 20, 2009, pp.277-319.
- [21] Chin W.W., "Issues and opinion on structural equation modeling," MIS Quarterly, 22, 1998, pp.7-16.
- [22] Straub D., "Validating instruments in MIS research," MIS Quarterly, 13, 1989, pp.147-169.
- [23] Churchill G. A., "A paradigm for developing better measures of marketing constructs," Journal of Marketing Research, 16, 1979, pp.64-73.
- [24] Fornell C. & Lacker D. F., "Structural Equation Models with Unobservable Variables and Measurement Errors," Journal of Marketing Research, 18, 1981, pp.39-50.
- [25] Kim K. S., Easy SEM with SmartPLS, Chungnam, 2013.

■ 저자소개 ■



전 병 호  
Jun, Byoung-ho

2008년 9월-현재  
서울여자대학교 기초교육원  
부교수  
2008년 2월 고려대학교 디지털경영학과  
(경영학박사)  
관심분야 : 전자상거래 전략, 중소기업  
정보화, 표준 및 적합성 평가,  
표준경영, SNS 활용  
E-mail : bojun00@swu.ac.kr

논문접수일 : 2019년 11월 18일  
수 정 일 : 2019년 12월 9일  
게재확정일 : 2019년 12월 12일