

Kim, Daewon; Bae, Jae Kwon

## Article

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## The Effects of Protection Motivation and Perceived Innovation Characteristics on Innovation Resistance and Innovation Acceptance in Internet Primary Bank Services

Daewon Kim<sup>a</sup>, Jae Kwon Bae<sup>b†</sup>

<sup>a</sup>Department of Business Administration, Keimyung University, Republic of Korea

<sup>b</sup>Department of Management Information Systems, Keimyung University, Republic of Korea

### ABSTRACT

**Purpose:** Prior studies on innovation resistance to IT services have mainly focused on the technology acceptance and use diffusion model. To understand the proliferation power of internet primary banks, an analysis of resistance factors is needed. This paper aims to propose a new integrated innovation resistance model (IRM) to explain the intention of innovation acceptance of internet primary bank services.

**Design/methodology/approach:** This study developed an integrated research model (PMT and IRM) to explain the intention to innovation acceptance of internet primary bank services. It collected 398 online survey responses from non-users of internet primary bank services. This study used the Partial Least Squares (PLS) methodology to verify the research model and hypotheses.

**Findings:** The results suggest that perceived vulnerability, perceived severity, perceived self-efficacy, personal innovativeness, perceived relative advantages, perceived compatibility, and perceived complexity affected innovation resistance. Together, these have a negative influence on the intention to accept the innovation of internet primary bank services.

**Research limitations/implications:** It is necessary to carry out exploratory investigations such as in-depth interviews and parallel observation methods to ensure the validity of the research results. Moreover, we analyzed responses from only non-users and discontinued users of internet primary bank services. In future research, we will conduct a study on innovation resistance that differentiates users and non-users of internet primary bank services. It is also necessary to conduct a longitudinal study to see how the personal innovativeness and perceived innovation characteristics of internet primary bank services change with time.

**Originality/value:** This study makes several contributions to the relevant literature as one of the first attempts to empirically validate an integrated research model for the banking domain. By combining the PMT and IRM, this research proposes and validates a model designed to enrich our understanding of innovation acceptance behavior in internet primary bank users.

*Keywords: Internet primary banks, Innovation resistance, Protection motivation theory, Innovation resistance model, Innovation acceptance*

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† Jae Kwon Bae (Corresponding Author)

E-mail: [jkbae99@kmu.ac.kr](mailto:jkbae99@kmu.ac.kr)

## I . Introduction

The banking business environment of the ‘Fourth Industrial Revolution’ has shifted toward the enlargement and globalization of financial institutions. Today, the banking business is developing new revenue models and providing innovative financial services by applying technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and Big Data (Ghosh *et al.*, 2016; Kim *et al.*, 2018). The most representative of these innovative financial services is internet primary bank services. An internet primary bank (sometimes called a direct bank, pure-play internet bank, internet-only bank, online-only bank, or virtual bank) is a bank without any branch network that offers its services remotely via online banking, telephone banking and mobile applications. Internet primary banking is perceived to be easy, fast, convenient, and compatible with users’ existing lifestyles. Internet primary banks reduce the significant cost of maintaining a branch network (DeYoung, 2001). The first pure internet primary bank, Security First Network Bank (SFNB), launched in the United States of America in October 1995. By the end of 2000, more than 40 internet primary banks had been established in the United States due to the activation of the internet and relaxation of financial regulations. Since then, many internet primary banks have emerged in a number of economic jurisdictions, including Europe, Japan, and China (Pyun *et al.*, 2002).

Ever since Korea survived the financial crises of 1997 and 2007-08, the banking business environment has shifted toward the enlargement and globalization of financial institutions. Encouraged by South Korean governmental policy, two internet primary banks (K Bank and Kakao Bank) have obtained licenses to operate. On April 3, 2017, K Bank, the first internet primary bank in Korea, began operations with industrial capital as its principle axis. As of the first week of August 2018, K Bank had some 760,000 subscribers in total. The total amount of deposits with K Bank stands at approximately 1.6 billion dollars and total loans at approximately 800 million dollars. The

second internet primary bank, Kakao Bank, launched on June 27, 2017. Kakao Bank's subscribers exceeded 6 million as of August 2018, that is, nearly eight times more than K Bank. Despite launching nearly three months later, Kakao Bank has outpaced its rival, receiving 5.5 billion dollars in deposits and issuing 4.7 billion dollars in loans. K Bank and Kakao Bank are locked in fierce competition and expected to have a considerable impact on the conservative operating environment of existing banks in Korea (Park and Ryu, 2018).

There are concerns regarding how effectively internet primary banks will be able to provide financial services differentiated from those of existing financial institutions. This is because they are expected to bring innovative changes to the financial industry. New technologies and innovations in the financial industry are not always a commercial success. In the case of internet primary banks, it is inevitable that companies will continue to suffer losses for a considerable period of time after their inception due to fixed costs associated with financial system construction and enormous marketing costs to secure stable customers. In fact, some internet primary banks in the United States and Japan have gone bankrupt. In South Korea, it is expected that the turnaround time will be much slower, and many financial experts predict that internet primary banks will succeed only with difficulty. In addition, when new innovative technologies and services are introduced, consumers are often averse to or fear these innovations. Therefore, it is important to analyze innovation resistance to internet primary banks in order to improve innovation performance.

Prior studies on innovation resistance to new information technology services have mainly focused on the technology acceptance and innovation diffusion model. There is a lack of research on innovation resistance and innovation acceptance of internet primary banks. To understand the proliferation power of internet primary banks, an analysis of resistance factors is needed. There is also a lack of research in terms of integrating protection motivation theory (PMT) and innovation resistance model (IRM). Therefore, this study suggests innovation resistance

factors in adoption of Korean internet primary bank services based on the PMT, innovation diffusion theory (IDT), and IRM. This paper aims to propose a new integrated innovation resistance model to explain the intention of innovation acceptance of internet primary bank services and, to this end, collected online survey responses from non-users of the internet primary bank services.

This research attempt to address two questions: (1) what is the relationship between consumers' innovation resistance and the determinant factors of PMT and the IRM, and (2) what are the key factors that drive the adoption of internet primary bank services.

The remainder of this paper is organized as follows. Section 2 reviews the literature and proposes eight hypotheses. Section 3 describes the methodology, sample, and data collection, as well as demographic information about the respondents. Next, reliability of the measurement, correlations between constructs, and the results of the Partial Least Squares (PLS) are shown in Section 4. Finally, the conclusions and implications are mentioned in Section 5.

## II. Theoretical Background and Hypotheses

### A. Protection Motivation Theory (PMT) and Innovation Resistance

This research investigated innovation resistance determinant factors by drawing upon PMT variables. PMT as developed by Rogers (1983) expanded the health belief model in the social psychology and health psychology domains (Milne et al. 2000). PMT is composed of two aspects: threat appraisal and coping appraisal. Threat appraisal describes an individual's assessment of the level of danger posed by a threatening event (Ifinedo, 2012). Threat appraisal is composed of perceived vulnerability and perceived severity. Perceived vulnerability means an individual's assessment of the probability of occurrence of threatening events. Perceived severity means an individual's

assessment of the severity of the consequences of the event. In general, innovation can be accepted as positive by consumers and spread, but it can also be regarded as negative. In the latter case, negative perception of an innovation becomes the will to reject it, which is called innovation resistance. The threat appraisal aspect of PMT will have a significant effect on innovation resistance. In general, when individuals perceive a threat, they adjust their behaviors in response to the perceived risk and determine whether they are willing to accept the threat (Milne et al., 2000; Workman et al., 2008). Thus, individuals' perceived vulnerability and the perceived severity of threat tend to be positively linked to their intentions to take protective action (Pechmann et al., 2003). Moore and Benbasat (1991) argue that perceived vulnerability will have a positive effect on innovation resistance to IT services. Researchers have identified six key dimensions of perceived severity: financial risk, performance risk, security risk, time risk, social risk, and psychological risks (Cherry and Fraedrich, 2002). Also, financial, performance, and security risk have been identified as the most important risks in bank services adoption. Yiu et al. (2007) argue that perceived severity will have a positive effect on consumers' resistance to mobile phones. Lu et al. (2005) argue that perceived severity and perceived risk will have a positive effect on consumers' resistance to wireless internet services. Based on past research and empirical results, perceived vulnerability and perceived severity are hypothesized to have a positive effect on innovation resistance to internet primary bank services.

**Hypothesis 1:** Perceived vulnerability will have a positive effect on innovation resistance to internet primary bank services.

**Hypothesis 2:** Perceived severity will have a positive effect on innovation resistance to internet primary bank services.

Coping appraisal describes an individual's assessment of his or her ability to cope with and avert the potential loss or damage arising from a threat (Woon et al., 2005). Coping appraisal is composed of self-efficacy

and personal innovativeness. The coping appraisal aspect of PMT will have a significant effect on innovation resistance. Self-efficacy means an individual's capabilities and competence to cope with a task or perform a recommended behavior (Bandura, 1991; Woon et al. 2005). Compeau and Higgins (1995) define self-efficacy as confidence in one's ability to use and competence to manage and perform the courses of action required to accomplish a desired outcome. In the context of this study, perceived self-efficacy would be the self-evaluation of one's capability in using mobile banking or Fintech services. Self-efficacy in the context of internet primary bank services means that we know how to use internet primary bank services and are confident of understanding and using internet primary bank services. Several researchers suggest that self-efficacy may be a critical influence on decisions involving technological innovation acceptance. Park and Chen (2007) argue that perceived self-efficacy will have a negative effect on consumer resistance to innovative products. Ellen et al. (1991) suggest that users (customers) who perceive low self-efficacy with a technological alternative will be more resistant to change than users who perceive high self-efficacy. Based on past research and empirical results, perceived self-efficacy is hypothesized to have a negative effect on innovation resistance to internet primary bank services.

**Hypothesis 3:** Perceived self-efficacy will have a negative effect on innovation resistance to internet primary bank services.

Personal innovativeness is defined as the risk-taking of the consumer in terms of ability to deal with complexity and adopt new technologies (Agarwal and Prasad, 1998). Personal innovativeness is the degree to which consumers believe that the product possesses important attributes of innovation such as newness and uniqueness. Personal innovativeness is also the degree of early acceptance of innovation technology. Personal innovativeness will influence the adoption of new technology to a great extent, and it is therefore appropriate to test personal innovativeness with perceived usefulness and perceived ease of using

innovative technology services. Agarwal and Prasad (1999) developed a modified technology acceptance model that showed that personal innovativeness negatively influences innovation resistance to innovative technology services. Parveen and Sulaiman (2008) developed an extended technology acceptance model that showed that personal innovativeness negatively influences innovation resistance to wireless internet in terms of mobile device technology. Ifinedo (2012) asserted that personal innovativeness and perceived self-efficacy positively influence information systems security policy behavioral compliance intentions of employees. From this argument, the following hypothesis is proposed.

**Hypothesis 4:** Personal innovativeness will have a negative effect on innovation resistance to internet primary bank services.

## B. Perceived Innovation Characteristics of IRM and Innovation Resistance

The present study focuses on innovation resistance as an alternative to the current innovation adoption or diffusion paradigm. Ram and Sheth (1989) was the first to use the notion of innovation resistance and propose lifestyle and perceived risks as factors that influence innovation resistance. Ram (1987) developed the innovation resistance model (IRM), which suggested that three powerful determinants (user perceived innovation characteristics, user characteristics, and diffusion path characteristics) influence the adoption of innovative technology services. From perceived innovation characteristics, Ram (1987) derived perceived relative advantage, perceived compatibility, and perceived complexity. Several researchers have extended and modified the model of innovation resistance to show that perceived innovation characteristics have a significant effect on innovation resistance.

In this paper, we defined perceived relative advantages of internet primary bank services as advantage over non-users. Internet primary bank services are more convenient, reliable, and useful than traditional bank services. Tornatzky and Klein (1982) found

perceived relative advantages to be an important factor in determining adoption of innovation, and that these negatively affected consumers' resistance to innovation. Agarwal and Prasad (1997) identified perceived relative advantages as the dominant factor in predicting innovation resistance to innovative technology services. Moore and Benbasat (1991) proposed an IT innovation acceptance model that perceived relative advantages will have a negative effect on innovation resistance to IT services. Dunphy and Herbig (1995) argue that perceived relative advantages is hypothesized to have negative effect on consumers' resistance to mobile phones. Schiffman and Kanuk (1991) argued that consumer resistance occurs when perceived relative advantage is low. In general, perceived relative advantages of an innovation are positively related to its rate of adoption (Rogers, 1983; Tan and Teo, 2000) and negatively related to consumer resistance (Dunphy and Herbig, 1995). Therefore, this study proposes the following hypothesis:

**Hypothesis 5:** Perceived relative advantages of internet primary banks will have a negative effect on innovation resistance to internet primary bank services.

Perceived compatibility is the degree to which new products and services have a relationship with the consumer's beliefs, desires, values and existing experience, which influences in turn the acceptance and diffusion of new products and services to consumers (Ram, 1987). Schiffman and Kanuk (1991) argued that low compatibility leads to higher innovation resistance. They suggested an innovation resistance model that identified perceived relative advantage, innovation expectation, and perceived compatibility as the predictors of innovation resistance. Lee (2011) found that perceived compatibility significantly affected innovation resistance to anti-plagiarism software. Therefore, this study proposes the following hypothesis:

**Hypothesis 6:** Perceived compatibility of internet primary banks will have a negative effect on innovation resistance to internet primary bank services.

Rogers (2003) defined complexity as “the degree

to which an innovation is difficult to understand and use”. Complexity causes delay or resistance in accommodating innovation (Rogers, 2003). If consumers find an innovative product or technology difficult to understand, resistance will occur. Ram (1987) and Rogers (2003) further argued that greater complexity leads to greater resistance. Prior research indicates that perceived complexity is an important indicator of innovation resistance and innovation acceptance (Chau, 2001; Huang *et al.*, 2017; Jiang *et al.* 2000; Taylor and Todd, 1995). Perceived complexity is one of the major behavioral beliefs influencing user intention in terms of technology acceptance. Parveen and Sulaiman (2008) found that perceived complexity will have a significant positive effect on innovation resistance to wireless internet in terms of mobile devices technology. Jiang *et al.* (2000) found that perceived complexity is hypothesized to be a predictor of innovation resistance. Also, Lee *et al.* (2011) found a strong relationship between perceived complexity and innovation resistance. Therefore, this study proposes the following hypothesis:

**Hypothesis 7:** Perceived complexity of internet primary banks will have a positive effect on innovation resistance to internet primary bank services.

### C. Innovation Resistance and Innovation Acceptance

Leonard *et al.* (2004) noted that innovation resistance has been called one of the important critical success factors for the adoption of technological innovation, and adoption has been portrayed as the result of overcoming resistance. Consumer resistance plays an important role in the success of innovation, as it can certainly inhibit or delay adoption. It has been identified as one of the major causes for the market failure of innovations (Ram, 1989, Ram and Sheth, 1989) and also as a source of information vital to the successful implementation and marketing of innovation. If resistance cannot be broken down, adoption slows and innovation is unlikely. Liang and

Xue (2010) argue that users with a stronger resistance motivation are more likely to engage in innovation acceptance of personal computer use. Eo et al. (2016) found the perception of innovation resistance to internet primary banks will negatively influence use intention of internet primary banks. Therefore, this study proposes the following hypothesis:

**Hypothesis 8:** Innovation resistance will have a negative effect on innovation acceptance of internet primary bank services.

### D. Research Model

Following our research problem, purpose, and the formulated hypotheses, we constructed a theoretical model to express the hypothesized relationship between the determinant factors of PMT and the IRM. The independent variables were separated into three variable groups: threat appraisal, coping appraisal, and perceived innovation characteristics. This study proposes eight hypotheses, and the research model is displayed in Figure 1. The seven antecedents of the research model in this study are perceived

vulnerability, perceived severity, perceived self-efficacy, personal innovativeness, perceived relative advantages, perceived compatibility, and perceived complexity of internet primary bank services. The consequent is innovation acceptance and the full mediator is innovation resistance.

### III. Data Collection and Sample

This research conducts an empirical study through the interview and questionnaire survey method. Before mailing the questionnaires to respondents, ten experts and scholars were asked to modify the questionnaire in the pretest. The preliminary survey is to secure the content validity and readability of the concept by conducting a review of the contents of the questionnaire by experts related to internet primary banks. This study developed an integrated model to assess the intention of innovation acceptance of internet primary bank services and collected 398 online survey responses from non-users.

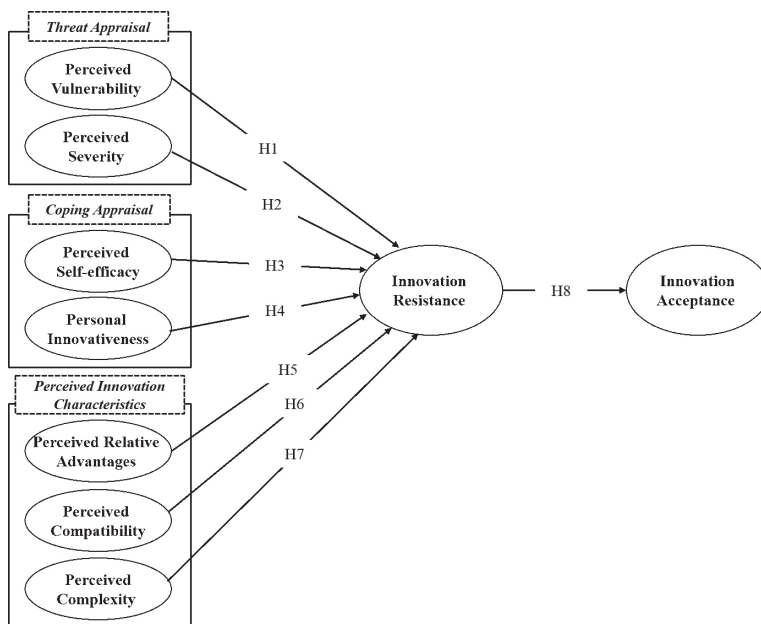


Figure 1. Research Model

The respondents were asked to return the completed questionnaires within three weeks via mail. The questionnaire items were measured on a five-point Likert scale ranging from “Strongly disagree” to “Strongly agree.” The data set for the empirical analysis was collected over a period of four months from March 2018 to June 2018. Of the responses received to 540 questionnaires, 398 were valid and 85 invalid, representing an effective response rate of 73.70%.

Table 1 shows the demographic information of the respondents. As indicated, 188 (47.2%) were men, and 210 (52.8%) were women. The most common age group was 21-30 years of age (164 respondents, or 41.2%) and the most common educational attainment was a university degree (244 respondents, or 61.3%). The annual revenue most commonly reported was \$ 20,001 to \$ 35,000 (97 respondents, or 24.4%).

#### IV. Data Analysis and Results

The Partial Least Squares (PLS) technique of structural equation modeling, which uses a principle-component-based estimation, was used for analysis. This study utilized the SmartPLS 3.2.7 program to verify the research model and hypotheses. Our model employs nine constructs: perceived vulnerability, perceived severity, perceived self-efficacy, personal innovativeness, perceived relative advantages, perceived compatibility, perceived complexity, innovation resistance, and innovation acceptance. Through a flexible interplay between theory and data, the structural equation model approach brings together theoretical and empirical knowledge to create a better understanding of the real world. In the structural equation model of this study, we examined two level of analyses: the measurement model and the structural model.

**Table 1.** Demographic Characteristics of the Sample (N=398)

Category	Variable	Frequency	Percent (%)
Gender	Male	188	47.2
	Female	210	52.8
Age range	21-30 years	164	41.2
	31-40 years	113	28.4
	41-50 years	72	18.1
	51 years and above	49	12.3
Educational attainment	Secondary education	53	13.3
	Vocational/technical	79	19.8
	University education	244	61.3
	Missing	21	5.3
Annual revenue	Less than \$15,000	49	12.3
	\$15,001 ~ \$20,000	72	18.1
	\$20,001 ~ \$35,000	97	24.4
	\$35,001 ~ \$50,000	61	15.3
	\$50,001 ~ \$70,000	33	8.3
	\$70,001 ~ \$100,000	39	9.8
	\$100,000 and above	17	4.3
	Missing	30	7.5



### A. Assessment of the Measurement Model

The measurement model analysis examines the psychometric properties of the measures for latent variables, testing for composite reliability, discriminant validity, and convergent validity. One measure of composite reliability involves examining the loadings of each of the constructs' individual items. With respect to the quality of the measurement model in relation to the sample, the loadings ( $\lambda$ ) of the items of the constructs listed in Table 2 are significant. Cronbach's  $\alpha$  is the other measure of composite reliability. Table 2 shows that the Cronbach's  $\alpha$  values

of constructs ranged from 0.691 to 0.936. The PLS methodology uses Cronbach's  $\alpha$  values as an indicator of composite reliability. If the Cronbach's  $\alpha$  value is 0.6 or more, it is 'acceptable', if it is 0.7 or more, 'good', and if it is 0.8 or more, it is evaluated as 'excellent'(Chin, 1998, Dijkstra and Henseler, 2015). Cronbach's  $\alpha$  coefficients of all constructs were greater than 0.6, indicating that the measurements in this study exhibited acceptable reliability. It was also important to verify whether the validity of the measurements in this study was acceptable. This study applied Fornell and Larcker's (1981) measure of average variance extracted (AVE) to assess the

**Table 2.** Loadings ( $\lambda$ ), Cronbach's  $\alpha$  Coefficients, and AVEs for Constructs

Construct	Items	$\lambda$	Cronbach's $\alpha$	AVE
Perceived Vulnerability (PEV)	PEV1	0.790	0.691	0.603
	PEV2	0.716		
	PEV3	0.675		
Perceived Severity (PES)	PES1	0.742	0.826	0.705
	PES2	0.718		
	PES3	0.985		
Perceived Self-Efficacy (PSE)	PSE1	0.763	0.740	0.665
	PSE2	0.842		
	PSE3	0.882		
Personal Innovativeness (PIN)	PIN1	0.811	0.791	0.634
	PIN2	0.779		
	PIN3	0.707		
Perceived Relative Advantages (PRA)	PRA1	0.936	0.902	0.853
	PRA2	0.843		
	PRA3	0.905		
Perceived Compatibility (PCO)	PCO1	0.730	0.756	0.645
	PCO2	0.818		
	PCO3	0.776		
Perceived Complexity (PCX)	PCX1	0.757	0.814	0.727
	PCX2	0.832		
	PCX3	0.791		
Innovation Resistance (INR)	INR1	0.926	0.880	0.791
	INR2	0.892		
	INR3	0.904		
Innovation Acceptance (INA)	INA1	0.916	0.936	0.877
	INA2	0.950		
	INA3	0.927		

discriminate validity of the measurements. The AVE measures the amount of variance captured by the construct through its items relative to the amount of variance resulting from measurement error. To satisfy the requirements for discriminate validity, the square root of a construct's AVE must be greater than the correlations between the construct and other constructs in the model. Table 3 shows the correlation matrix, with correlations among constructs and the square root of AVE on the diagonal. In all cases, the AVE for each construct is larger than the correlation of that construct with all other constructs in the model. Therefore, the discriminate validity of the measurements in this study was acceptable. Additionally, if the AVE of a construct is greater than 0.5, it means that it exhibits convergent validity.

As shown in Table 2, the AVE for each construct ranged from 0.603 to 0.877, indicating that there was convergent validity in this study. In sum, adequate reliability and validity are shown in this study.

## B. The Results of the Structural Model

This section presents the main results of the structural model analysis. The results of the structural model are presented in Table 4. All eight estimated paths are significant. Perceived vulnerability and perceived severity have a positive effect on innovation resistance to internet primary bank services, thus supporting Hypothesis 1 and 2. Perceived self-efficacy and personal innovativeness have a negative effect

**Table 3.** Correlations Latent Variables

Constructs	1	2	3	4	5	6	7	8	9
PEV	<b>0.777</b>								
PES	0.476	<b>0.840</b>							
PSE	0.327	0.391	<b>0.815</b>						
PIN	0.194	0.200	0.480	<b>0.796</b>					
PRA	0.142	0.294	0.338	0.454	<b>0.924</b>				
PCO	0.127	0.345	0.356	0.316	0.223	<b>0.803</b>			
PCX	0.168	0.268	0.427	0.413	-0.370	0.194	<b>0.853</b>		
INR	-0.175	-0.236	0.112	0.227	0.290	0.292	-0.350	<b>0.889</b>	
INA	0.254	0.348	-0.265	-0.111	-0.359	0.335	-0.463	-0.524	<b>0.936</b>

Notes: Diagonal elements are the square root of AVE. PEV(perceived vulnerability), PES(perceived severity), PSE(perceived self-efficacy), PIN(personal innovativeness), PRA(perceived relative advantages), PCO(perceived compatibility), PCX(perceived complexity), INR(innovation resistance), INA(innovation acceptance).

**Table 4.** Results of Structural Model Analysis

Hypothesized path	Path coefficients	t-value	Results
Perceived Vulnerability → Innovation Resistance (H1)	0.190**	2.594	Supported
Perceived Severity → Innovation Resistance (H2)	0.362***	5.251	Supported
Perceived Self-Efficacy → Innovation Resistance (H3)	-0.254***	-3.805	Supported
Personal Innovativeness → Innovation Resistance (H4)	-0.333***	-5.646	Supported
Perceived Relative Advantages → Innovation Resistance (H5)	-0.416***	-7.512	Supported
Perceived Compatibility → Innovation Resistance (H6)	-0.216***	-3.050	Supported
Perceived Complexity → Innovation Resistance (H7)	0.272***	3.727	Supported
Innovation Resistance → Innovation Acceptance (H8)	-0.646***	-10.892	Supported

Notes: \* p< 0.05, \*\* p< 0.01, \*\*\* p<0.001.

on innovation resistance to internet primary bank services, thus supporting Hypothesis 3 and 4. This result is the same as those of previous studies asserting that threat appraisal and coping appraisal of PMT have a significant effect on innovation resistance to innovative technology services.

Hypothesis 5 and 6 predicted that perceived relative advantages and perceived compatibility of internet primary banks would have a negative effect on innovation resistance to internet primary bank services. Perceived complexity of internet primary banks have a positive effect on innovation resistance to internet primary bank services, thus supporting Hypothesis 7. This result is the same as those of previous studies asserting that perceived innovation characteristics of the IRM have a significant influence on innovation resistance to internet primary bank services. Innovation resistance has a negative effect on innovation acceptance of internet primary bank services, thus supporting Hypothesis 8. This result is the same as that of the IRM, asserting that innovation resistance has a negative effect on innovation acceptance.

## V. Discussions and Conclusion

This study aims to understand the innovation resistance and innovation acceptance behaviors of consumers of internet primary bank services. We propose a new integrated research model to explain the influence of threat appraisal, coping appraisal, and perceived innovation characteristics on innovation resistance and innovation acceptance of internet primary bank services. We tested a research model using survey data. Data analyses reveal several major findings. First, perceived vulnerability and perceived severity positively influence innovation resistance to internet primary bank services. Perceived self-efficacy and personal innovativeness have a negative effect on innovation resistance to internet primary bank services. This result is the same as those of previous studies asserting that the threat appraisal and coping

appraisal variables of PMT significantly effect on innovation resistance to IT services. Second, perceived relative advantages and perceived compatibility of internet primary banks have a negative effect on innovation resistance to internet primary bank services. Perceived innovation characteristics have particularly strong effects on innovation resistance, which suggests that perceived relative advantages are more influential in the context of this study. Perceived complexity of internet primary banks has a positive effect on innovation resistance to internet primary bank services. This result is the same as those of previous studies asserting that perceived innovation characteristics of the IRM have a significant influence on innovation resistance. Lastly, innovation resistance has a negative effect on innovation acceptance of internet primary bank services. This result is the same as that of the IRM, asserting that innovation resistance has a negative effect on innovation acceptance. In conclusion, the determinant factors of PMT and the IRM significantly contribute to innovation resistance, which has a negative influence on the intention of innovation acceptance of internet primary bank services.

The theoretical and practical contributions of this paper are as follows. Firstly, this study did not focus on the factors of adoption and diffusion of innovative services such as internet primary bank services, but focused on the innovation resistance of the user and verified why innovative services could not be activated and why innovation resistance occurred. Secondly, this paper makes several contributions to the relevant literature as one of the first attempts to empirically validate an integrated research model for the banking domain. By combining the PMT and IRM, this research proposes and validates a model designed to enrich our understanding of innovation acceptance behavior in internet primary bank users. Lastly, by presenting the influence factors of innovation resistance of internet primary bank services, we suggested business strategies such as the development of internet primary bank services, financial product and application programs to business model developers, fin-tech practitioners, and internet primary bank researchers.

This study has several limitations. First, although surveys have been adopted in research methodology, it is necessary to carry out exploratory investigations such as in-depth interviews and parallel observation methods to ensure the validity of the research results. Second, we analyzed responses from only non-users and discontinued users of internet primary bank services. In future research, we will conduct a study on innovation resistance that differentiates users and non-users of internet primary bank services. It is also necessary to conduct a longitudinal study to see how the personal innovativeness and perceived innovation characteristics of internet primary bank services change with time.

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