

# Understanding Korean College Students' Social Commerce Behavior through an Integrated Model of Technology Readiness, Technology Acceptance Model, and Theory of Planned Behavior

Ji Hyuk Joo

Dept. of Journalism & Communication, Far East University  
School of Communication, Northern Arizona University

## 한국 대학생의 소셜 커머스 행동의 이해: 기술준비도, 기술수용모형 및 계획된 행동이론의 통합모형을 중심으로

주지혁

극동대학교 언론홍보학과  
노던아리조나대학교 커뮤니케이션학부

**Abstract** When new information communication technologies(ICTs) have appeared, researchers and practitioners have explored how to spread the technologies. In e-commerce, social commerce has been introduced recently and attempts to understand social commerce have proposed diverse research models. This study proposed a hypothetical model which integrates technology readiness(TR), technology acceptance model(TAM), and theory of planned behavior(TPB). Through PLS path modeling, we found that every hypothesis except social norm-intention path alone proved significant. This result means that integrated model is useful to understand the adoption of new ICTs including social commerce. Finally, based on the findings, suggestions for future research were discussed.

**Key Words** : Social Commerce, Technology Readiness, Technology Acceptance Model, Theory of Planned Behavior, integrated model, PLS path Modeling

**요약** 새로운 정보기술이 등장할 때마다 연구자와 실무자는 이 기술을 어떻게 보급할 것인가에 대해서 탐구하고 있다. e-커머스 분야에서 소셜 커머스는 최근에 나타나 현상으로, 소셜 커머스 현상을 이해하려는 많은 연구가 다양한 연구모형을 제시하고 있다. 이 연구는 기술준비도(TR), 기술수용모형(TAM), 계획된 행동이론(TPB)을 통합한 연구모형을 제시하였다. PLS 경로모형분석을 통한 분석결과, TPB의 주관적 규범-의도 경로를 제외한 모든 가설적 경로가 유의한 것으로 밝혀졌다. 이러한 결과는 소셜 커머스 뿐만 아니라 새로운 정보기술의 수용을 이해하는데 통합모형이 유용하다는 사실을 말해준다. 마지막으로 이 연구는 미래 연구를 위한 함의와 제안을 제시하였다.

**주제어** : 소셜 커머스, 기술준비도, 기술수용모형, 계획된 행동이론, 통합 모형, PLS 경로모형분석

\* 본 논문은 2014년 GS 홈쇼핑의 해외연구지원에 의하여 연구되었음

Received 17 May 2015, Revised 26 June 2015

Accepted 20 July 2015

Corresponding Author: Ji Hyuk Joo

(Dept. of Journalism & Communication, Far East University)

Email: hyukjoo@kdu.ac.kr

ISSN: 1738-1916

© The Society of Digital Policy & Management. All rights reserved. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## 1. Introduction

Whenever new information communication technology(ICT) has been introduced, researchers and practitioners have considered how to diffuse the technology. Researchers have tested diverse theories or models to figure out more explanatory theories or variables. In e-commerce, many studies have striven to figure out powerful theories or models. Accordingly, the integrated models, based on theory of reasoned action(TRA)[1], theory of planned behavior(TPB)[2], or technology acceptance model(TAM)[3,4,5,6], have been applied to studies regarding e-commerce.

Social commerce is new transactions occurred recently, which is the fusion of social media and commerce. Studies pertaining to social commerce have tried to integrate models based on diverse theoretical frameworks. This research is an attempt to build up more explanatory model about social commerce. This study integrated TPB, TAM, and technology readiness (TR) for the research aim. Through the study, theoretically we would recognize the usefulness of an integrated model, and then practically the results would enable practitioners to set up effective policy to satisfy their customers.

## 2. Literature Review and Hypotheses

### 2.1 Technology Readiness

TR has focused on an individual's personality traits, whereas TPB or TAM have focused on cognitive dimensions on inspecting the determinants of new technology usage[7]. The origin of TR is derived from Rogers(1995)[8]. He suggested that people have different disposition toward technology use, and then he separated people into five group according to their character: ranging from laggard to innovator. Regarding TR, each person has different traits, thus his or her beliefs about technology are different. Parasuraman(2000) defined TR as "people's propensity

to embrace and use new technologies for accomplishing goals in home life and at work"[9, p. 308]. TR is "an overall state of mind resulting from a gestalt of mental enabler and inhibitors that collectively determine a person's predisposition to use new technologies"(p. 308). TR has been measured with a person's readiness to use new technology in general using four personality traits: optimism, innovativeness, discomfort, and insecurity [7, 9]. The following is the conceptual definition of the traits: (a)optimism: a positive view of technology and a belief that it offers people increased control, flexibility, and efficiency in lives; (b)innovativeness: a tendency to be a technology pioneer and thought leader; (c)discomfort: a perceived lack of control over technology and a feeling of being overwhelmed by it; (d)insecurity: distrust of technology and skepticism about its ability to work properly.

Optimism and innovativeness work as facilitator to adopt new technology, whereas discomfort and insecurity effect as inhibitor. Accordingly, people with more optimism and innovativeness and less discomfort and insecurity are more likely to use a new technology[9].

This study employed innovativeness(INNO), specifically personal innovativeness[10], of four constructs because innovativeness is relatively stable descriptor of an individual and invariant regardless of situations, or uninfluenced by environmental and internal variables[7, 11]. According to a previous study[12], more innovative people, so-called the early adopters, have less complex belief set pertaining to new technology. Walczuch et al.(2007) also proved that high innovativeness toward technology leads to higher perceived ease of use(PEOU) of a specific technology[7]. Accordingly, we hypothesized:

H1. INNO will have a positive effect on PEOU.

In spite of the uncertainty of potential value and ambiguous benefits, the early adopters tend to regard new technology as usefulness. Thus, high innovativeness

toward technology leads to higher perceived usefulness(PU) of a specific technology. Therefore we set forth the following hypothesis:

H2. INNO will have a positive effect on PU.

Furthermore, Oh(2012) revealed that positive TR, or optimism and innovativeness, had a positive effect on perceived behavioral control (PBC) toward e-government self-service technology[13]. Based on the previous study, innovativeness would have a positive effect on PBC toward social commerce. Therefore, we hypothesized:

H3. INNO will have a positive effect on PBC.

### 2.2 Technology Acceptance Model

TAM is a frequently applied framework pertaining to the acceptance of new technology. TAM comprises two salient behavioral beliefs which have an effect on behavioral intention: PEOU and PU. According to Davis(1989), PEOU refers to “the degree to which a person believes that using a particular system would be free of effort” and PU means “the degree to which a person believes that suing a particular system would enhance his or her job performance”[14, p. 320]. TAM is appreciated as a powerful and robust framework to comprehend the adoption of new technology. However, TAM has two limitations. Namely, because Davis attempted more general and parsimonious model, original TAM did not consider to identify the antecedent of the two salient behavioral beliefs, PEOU and PU[15, 16]. Moreover, despite the availability for identifying influential factors on people’s technology acceptance and usage, TAM cannot fully describe why people adopt a particular technology[16, 17]. Accordingly this study suggests an integral model that emerge TAM with TR and TPB.

Since Davis(1989), the studies employing TAM have verified that PEOU influences PU and attitude(AT), and then, PU influences AT and intention to

use(INT)[14]. Accordingly this study set forth the following hypotheses:

H4. PEOU will have a positive effect on PU.

H5. PEOU will have a positive effect on AT.

H6. PU will have a positive effect on AT.

H7. PU will have a positive effect on INT.

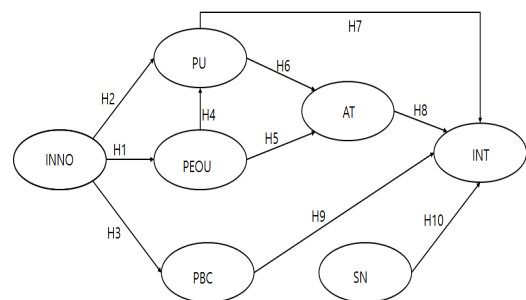
### 2.3 Theory of Planned Behavior

TPB is appreciated a well-established general theory of social psychology, which says that specific salient beliefs affect behavioral intentions and subsequent behavior[18]. Fishbein and Ajzen(1975) modified the theory of reasoned action (TRA) into TPB for explaining conditions where people do not have full control over the situation[19, 20]. TPB consists of three perceptual constructs which three type of beliefs affect: (a)attitude(AT) which behavioral beliefs affect, (b)subjective norm(SN) which normative beliefs influence and (c)perceived behavioral control(PBC) which control beliefs shape. In turn, these three perceptual constructs predict behavioral intentions and actual behaviors. A study [21] found TPB useful in explaining e-commerce service acceptance, i.e. the three key constructs of TPB have a positive effect on behavioral intention(INT) respectively. Based on this research, we hypothesized:

H8. AT will have a positive effect on INT.

H9. PBC will have a positive effect on INT.

H10. SN will have a positive effect on INT.



[Fig. 1] Proposed Research Model

The following [Fig. 1] illustrates hypothetical relationships.

### 3. Method

#### 3.1 Sample

College students in Korea would be most outstanding users of social media. According to Korea Communication commission(KCC) and National Internet Development Agency of Korea(NIDA), 76.8% of college students including the graduate students are user of social network services(SNS) as of 2009[5, 16]. Thus, we could estimate that the college students are more active, heavier social commerce user than any other SNS user groups. Moreover, because they would be powerful future consumers with purchasing power in online market, the college students is worth examining with regard to social commerce. We chose 565 Korean college students as respondents who had connected to and purchased from social commerce sites through a convenience sampling method. <Table 1> shows the demographic profiles of the respondents.

<Table 1> Demographic Profile

Demographic	N	Percentage
Female	285	50.44
Male	280	49.56
Freshman	164	29.03
Sophomore	151	26.73
Junior	163	28.85
Senior	87	15.4

As shown in Table 1, 50.44% of respondents were female and 49.56% of them were male. With regard to their academic years, 29.0% of the respondents were freshman; 28.85% were junior; 26.85% were sophomore; and 15.40% were senior. The mean of the age was 22.10 with standard deviation of 1.93. The oldest two respondents were 28 years old, whereas the youngest 139 respondents were 20 years old.

#### 3.2 Survey Administration and Measurement

This study employed a self-reported survey from respondent to test the hypotheses. Trained interviewers with a major in communication administered the questionnaires. The survey was administered for two weeks from May 27 to June 10, 2013. To examine the proposed hypotheses, current study measured the constructs which comprised a seven part questionnaires that was modified from previous studies: INNO, PEOU, PU, AT, PBC, SN, and INT. Each item of the constructs was measured using fully anchored, 5-point Likert Scales ranging from 'strongly disagree(1)' to 'strongly agree(5)'. <Table 2> shows the scales of measurements.

<Table 2> The Scale of Measurement

INNO (Agarwal & Karahanna[10, 11])
INNO1. If I heard about a new information technology, I would look for way to experiment with it.
INNO2. In general, I am not hesitant to try out new information technologies.
INNO3. Among my peers, I am usually the first to try out new information technologies.
INNO4. I like to experiment with new information technologies.
PEOU (Joo[5, 6])
PEOU1. Using social commerce is easy for me.
PEOU2. It would be easy for me to become skillful at using social commerce.
PEOU3. My interaction with social commerce is clear and understandable.
PU (Joo[5, 6])
PU1. I find social commerce useful in my life.
PU2. Using social commerce helps me accomplish things more quickly.
PU3. Using social commerce increase my productivity.
PU4. Using social commerce helps me performs many things more conveniently.
PU5. Using social commerce enhances my effectiveness in my job.
AT (Bhattacharjee[21])
AT1. Using social commerce for satisfying my needs would be a good idea.
AT2. Using social commerce for satisfying my needs would be a smart idea.
AT3. I like the idea of using social commerce for satisfying my needs.
PBC (Bhattacharjee[21])
PBC1. I would be able to use social commerce well.
PBC2. Using social commerce is entire within my control
PBC3. I have enough ability to use social commerce
SN (Bhattacharjee[21])
SN1. People important to me would support my use of social commerce.
SN2. People who influenced my behavior would want me to use social commerce.
SN3. People whom I like would prefer that I use social commerce.
INT (Joo[5, 6])
INT1. I plan to use social commerce in the future.
INT2. I intend to continue using social commerce in the future.
INT3. I expect my use of social commerce to continue in the future.

### 3.3 Data Analysis

For examining structural causalities among the seven underlying constructs, this study employed PLS path modeling. PLS path modeling is a statistical technique that “merges a factor analysis with multiple linear regressions to estimate the parameters of the measurement model(item loadings on constructs) together with those of the structural model(regression paths among the constructs) by minimizing residual variance[22, p. 414].” PLS path modeling estimates the discriminant validity and the convergent validity of scales; and two validities are requisites to test a new model. Because PLS path modeling has more advantage than the covariance-based structural equation modeling(SEM) like LISREL and AMOS[3], this study employed PLS path modeling method. SEM emphasizes sample size; but PLS path modeling is free form it. In addition, PLS path modeling is appropriate for small sample size study[3, 23]. The sample size in PLS path modeling should be 10 times more than the number of the item of the most complex construct[23, 24]. PLS path modeling is a proper method for exploratory study[3, 23, 24] because it has availability to examine a new model or theory[23]. Therefore, because social commerce is the latest issue in e-commerce and is not enough robust theoretical models, this study used PLS path modeling via SmartPLS 2.0 M3 package[25].

## 4. Findings

### 4.1 Reliability and Validity of Measurement Scale

To examine the reliability and validity of measurement scales, we executed PLS Algorithm on Calculate tap of SmartPLS package and had Cronbach’s Alpha( $\alpha$ ) and composite reliability. The overview of PLS quality criteria appears in Table 3. In <Table 3>, each composite reliability is greater than

the minimum criteria, 0.7; consequently, the reliability of measurement scales is appropriate for analysis. In addition, every Cronbach’s  $\alpha$  of constructs is greater than 0.6, the minimum criterion, and indicates reliable values.

To test construct validity of the measurement model, this study employed convergent and discriminant validity[26]. For convergent validity, this study estimates AVE(Average Variance Extracted); and then, convergent validity is valid when AVE is greater than 0.5[22, 27]. In <Table 3>, every AVE is greater than 0.5; consequently, this study achieves the criterion.

<Table 3> PLS Quality Criteria Overview

	AVE	Composite Reliability	R Square	Cronbach’s Alpha
AT	0.781	0.915	0.382	0.860
INNO	0.713	0.909		0.868
INT	0.799	0.923	0.526	0.874
PBC	0.766	0.908	0.097	0.849
PEOU	0.762	0.906	0.031	0.844
PU	0.665	0.908	0.263	0.874
SN	0.719	0.885		0.806

To estimate discriminant validity, this study compared the inter-correlations within latent constructs with the root square of AVE of latent constructs. If the square root of AVE of each construct is over its correlations with the other latent constructs, we accept that the discriminant validity is significant[28]. In <Table 4>, every square root of AVE of construct is appropriate to the criterion respectively.

<Table 4> Latent Constructs Correlations

	AT	INNO	INT	PBC	PEOU	PU	SN
AT	0.884						
INNO	0.306	0.845					
INT	0.545	0.284	0.894				
PBC	0.574	0.311	0.423	0.875			
PEOU	0.401	0.175	0.457	0.522	0.873		
PU	0.605	0.262	0.703	0.421	0.480	0.816	
SN	0.562	0.292	0.425	0.393	0.262	0.469	0.848

Diagonals show the square root of AVE

#### 4.2 Test of Structural Model

The following <Table 5> shows the findings of hypotheses test and path coefficients of the proposed research model. In PLS path modeling, model validity is appraised by the R square values and the structural paths[29]. This study execute Bootstrapping on Calculate tap of SmartPLS package to estimate the statistical significance of the proposed path coefficient by means of the critical value of t statistic.

According to <Table 5>, every hypothesis except SN-INT path(H10) is significant; and H1 through H9 are supported. In detail, INNO predicted PEOU( $\beta=0.175$ ,  $t=3.604$ ,  $p<0.005$ , one-tailed test), PU( $\beta=0.183$ ,  $t=3.813$ ,  $p<0.0005$ , one-tailed test), and PBC( $\beta=0.311$ ,  $t=7.150$ ,  $p<0.0005$ , one-tailed test) respectively. These findings mean that INNO functions as the antecedent of two salient constructs; i.e. INNO is worth the antecedent for overcoming the former of two limitations within TAM. Futhermore, each path in traditional TAM, PEOU-PU ( $\beta=0.448$ ,  $t=9.966$ ,  $p<0.0005$ , one-tailed test), PEOU-AT( $\beta=0.144$ ,  $t=3.222$ ,  $p<0.005$ , one-tailed test). PU-AT( $\beta=0.536$ ,  $t=12.962$ ,  $p<0.0005$ , one-tailed test),

and PU-INT( $\beta=0.566$ ,  $t=15.152$ ,  $p<0.005$ , one-tailed test), is significant; and consequently, TAM is a powerful and robust model for explaining adoption of social commerce as well as other ICTs. Finally, regarding TPB, AT-INT( $\beta=0.116$ ,  $t=2.483$ ,  $p<0.01$ , one-tailed test) and PBC-INT( $\beta=0.097$ ,  $t=2.324$ ,  $p<0.025$ , one-tailed test) are significant. Particularly, SN does not affect INT, which is compatible with some previous research[30, 31]; i.e. despite a lot of studies on social norm, empirical finding about its effect on decision making of people is not consistent[31].

Above <Table 3> shows R squares. In detail, 52.6% of the variance in INT was explained by the constructs in present model. This means that every construct except SN affects INT directly and indirectly. AT, resulting in the  $R^2$  of 0.382, was INNO, PU and PEOU; PU, resulting in the  $R^2$  of 0.263, is affected by INNO and PEOU; and PEOU, resulting in the  $R^2$  of 0.031, and PBC, resulting in the  $R^2$  of 0.097, was affected by INNo. Respectively 38.2%, 26.3%, 3.1%, and 9.7% of AT, PU, PEOU, and PBC variance are explained by the antecedent constructs.

<Table 5> Hypotheses Test Results

Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (O/STERR)	p	Result
H1 INNO -> PEOU	0.175	0.172	0.049	0.049	3.604	P<0.0005	supported (one-tailedtest)
H2 INNO -> PU	0.183	0.187	0.048	0.048	3.813	P<0.0005	supported (one-tailedtest)
H3 INNO -> PBC	0.311	0.310	0.044	0.044	7.150	P<0.0005	supported (one-tailedtest)
H4 PEOU -> PU	0.448	0.446	0.045	0.045	9.966	P<0.0005	supported (one-tailedtest)
H5 PEOU -> AT	0.144	0.140	0.045	0.045	3.222	P<0.005	supported (one-tailedtest)
H6 PU -> AT	0.536	0.539	0.041	0.041	12.962	P<0.0005	supported (one-tailedtest)
H7 PU -> INT	0.566	0.570	0.037	0.037	15.152	P<0.0005	supported (one-tailedtest)
H8 AT -> INT	0.116	0.113	0.047	0.047	2.483	P<0.01	supported (one-tailedtest)
H9 PBC -> INT	0.097	0.095	0.042	0.042	2.324	P<0.025	supported (one-tailedtest)
H10 SN -> INT	0.056	0.059	0.038	0.038	1.497	N.S	unsupported

## 5. Conclusion and Discussion

When new ICT appeared, researchers and practitioners have searched how to disseminate the technologies. Social commerce appears recently and is a fusion of social media and commerce. Accordingly, to understand social commerce, some theoretical frameworks have been applied, e.g. TAM and TPB. This study attempts to combine TR, TAM, and TPB for exploring more explanatory theoretical model and having practical implication. This study proposed and examined hypothesized paths in the research model. To analyze the causalities among latent constructs, we employed PLS path modeling through SmartPLS package. Consequently, this study identifies the theoretical and practical availability of an integrated model that combines TR, TAM, and TPB on social commerce.

The following shows the summary of findings.

First, the INNO of four TR constructs, specifically personal innovativeness, had a positive effect on PEOU, PU, and PBC. This result means that TR is an appropriate construct to predict customers' beliefs pertaining to social commerce. Second, every TAM path was significant. Particularly, PU-INT path indicated the greatest coefficient( $\beta$ ) in the proposed model. This result means that consumers' utilitarian belief would have the most effect on choosing social commerce. Third, regarding TPB, AT and PBC also affected INT positively; but SN did not affect INT. SN is not stable predictor toward INT. For example, when introduced TAM, Davis(1986) omitted SN due to less explanatory[32]; a meta-analysis of willingness to use condoms found that SN is weak predictors of intentions[33]; and in the research examining an integrated model on smartphone adoption, SN did not predict INT[30]. This finding means that the user of social commerce would have innovativeness; they enjoy adventure and challenges, who tend to try new idea; accordingly, they adopt new technology

independently and are less affected by SN.

Finally, the following is some suggestions for future studies. Because this study focused on the novelty and innovativeness of social commerce at first, we emphasized INNO of four TR constructs. Actually, as growing the business, it would be more significant for researchers and practitioners to analyze the inhibitor, or discomfort and insecurity, than facilitator, or optimism and innovativeness. Future research needs to consider the other constructs together with INNO. Moreover, despite SN is a powerful predictor toward behavioral intention, SN did not affect INT in this study because of its less stability. Accordingly, future study would employ more sophisticated norms, e.g. descriptive or injunctive norm[34].

## ACKNOWLEDGMENTS

I would like to thank GS Home Shopping that gave me the opportunity to take my sabbatical at Northern Arizona University and to write a series of papers about social commerce. I also would like to express my special thanks to Peter Friederici, a journalism professor at NAU and my mentor.

## REFERENCES

- [1] P.-L. The, P. K. Ahmed, "MOA and TRA in social commerce: An integrated model," in *Industrial Engineering and Engineering Management (IEEM)*, 2011 IEEE International Conference, pp. 1375 - 1379, 2011.
- [2] M. Khalifa, S. Cheng, "Adoption of mobile commerce: role of exposure," in *2013 46th Hawaii International Conference on System Sciences*, Vol. 1, pp. 46 - 46, 2002.
- [3] M. Hajli, "An integrated model for e-commerce adoption at the customer level with the impact of social commerce," *International Journal of Information*

- Science and Management (IJISM), Vol. 16, No. Special Issue (ECDC 2012), pp. 77 - 97, 2012.
- [4] M. Hajli, "A research framework for social commerce adoption," *Information Management & Computer Security*, Vol. 21, No. 3, pp. 144 - 154, 2013.
- [5] J. Joo, "Exploring Korean Collegians' Social Commerce Usage: Extending Technology Acceptance Model with Word-of-Mouth and Perceived Enjoyment," *Journal of Digital Convergence*, Vol. 12, No. 8, pp. 147 - 155, 2014.
- [6] J. Joo, "Extending Technology Acceptance Model with Social Influence on Korean College Students' Social Commerce Context," *Journal of Digital Convergence*, Vol. 13, No. 3, pp. 107 - 115, 2015.
- [7] R. Walczuch, J. Lemmink, S. Streukens, "The effect of service employees' technology readiness on technology acceptance," *Information & Management*, Vol. 44, No. 2, pp. 206 - 215, 2007.
- [8] M. Rogers Everett, *Diffusion of innovations*. New York, NY: Free Press, 1995.
- [9] A. Parasuraman, "Technology Readiness Index (TRI) a multiple-item scale to measure readiness to embrace new technologies," *Journal of service research*, Vol. 2, No. 4, pp. 307 - 320, 2000.
- [10] R. Agarwal, E. Karahanna, "Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage," *MIS quarterly*, Vol. 24, No. 4, pp. 665 - 694, 2000.
- [11] R. Agarwal, J. Prasad, "A conceptual and operational definition of personal innovativeness in the domain of information technology," *Information systems research*, Vol. 9, No. 2, pp. 204 - 215, 1998.
- [12] E. Karahanna, D. W. Straub, N. L. Chervany, "Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs," *MIS quarterly*, Vol. 23, No. 2, pp. 183 - 213, 1999.
- [13] J.-C. Oh, "Factors influencing acceptance of E-government self service technology," *The e-Business Studies*, Vol. 13, No. 1, pp. 441 - 462, 2012.
- [14] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS quarterly*, Vol. 13, No. 3, pp. 319 - 340, 1989.
- [15] M. T. Dishaw, D. M. Strong, "Extending the technology acceptance model with task - technology fit constructs," *Information & Management*, Vol. 36, No. 1, pp. 9 - 21, 1999.
- [16] J. Joo, Y. Sang, "Exploring Koreans' smartphone usage: An integrated model of the technology acceptance model and uses and gratifications theory," *Computers in Human Behavior*, Vol. 29, No. 6, pp. 2512 - 2518, 2013.
- [17] N. Park, "Adoption and Use of Computer-Based Voice Over Internet Protocol Phone Service Toward an Integrated Model," *Journal of Communication*, Vol. 60, No. 1, pp. 40-72, 2010.
- [18] I. Ajzen, "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, Vol. 50, No. 2, pp. 179 - 211, 1991.
- [19] I. Ajzen, M. Fishbein, *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley, 1975.
- [20] T. J. Madden, P. S. Ellen, I. Ajzen, "A comparison of the theory of planned behavior and the theory of reasoned action," *Personality and Social Psychology Bulletin*, Vol. 18, No. 1, pp. 3 - 9, 1992.
- [21] A. Bhattacharjee, "Acceptance of e-commerce services: the case of electronic brokerages," *IEEE Transactions on Systems, Man and Cybernetics - Part A: Systems and Humans*, Vol. 30, No. 4, pp. 411 - 420, 2000.
- [22] D. Gefen, D. W. Straub, "Consumer trust in B2C e-Commerce and the importance of social presence: experiments in e-Products and e-Services," *Omega*, Vol. 32, No. 6, pp. 407 - 424, 2004.
- [23] D. Gefen, D. Straub, M.-C. Boudreau, "Structural equation modeling and regression: Guidelines for research practice," *Communications of the Association for Information Systems*, Vol. 4, No. 1, p. 7, 2000.



- [24] W. W. Chin, "Commentary: Issues and opinion on structural equation modeling," *MIS Quarterly*, Vol. 22, No. 14, pp. vii - xvi, 1998.
- [25] C. M. Ringle, S. Wende, A. Will, *SmartPLS*. 2005.
- [26] W. W. Chin, A. Gopal, W. D. Salisbury, "Advancing the theory of adaptive structuration: The development of a scale to measure faithfulness of appropriation," *Information Systems Research*, Vol. 8, No. 4, pp. 342 - 367, 1997.
- [27] B. H. Wixom, H. J. Watson, "An empirical investigation of the factors affecting data warehousing success," *MIS quarterly*, Vol. 25, No. 1, pp. 17 - 41, 2001.
- [28] D. Gefen, D. Straub, "A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example," *Communications of the Association for Information systems*, Vol. 16, No. 1, pp. 91 - 109, 2005.
- [29] P. Chwelos, I. Benbasat, A. S. Dexter, "Research report: Empirical test of an EDI adoption model," *Information systems research*, Vol. 12, No. 3, pp. 304 - 321, 2001.
- [30] J. Joo, "Comparison on predictive model of intention to use smartphones through iphone user: Centered on TAM, TPB, & integrated model," *Journal of Digital Policy and Management*, Vol. 11, No. 1, pp. 89 - 97, 2013.
- [31] P. W. Schultz, J. M. Nolan, R. B. Cialdini, N. J. Goldstein, V. Griskevicius, "The constructive, destructive, and reconstructive power of social norms," *Psychological Science*, Vol. 18, No. 5, pp. 429 - 434, 2007.
- [32] F. D. Davis, "A technology acceptance model for empirically testing new end-user information systems: Theory and results," Ph.D. dissertation, Massachusetts Institute of Technology, 1986.
- [33] P. Sheeran, C. Abraham, S. Orbell, "Psychosocial correlates of heterosexual condom use: a meta-analysis," *Psychological Bulletin*, Vol. 125, No. 1, pp. 90 - 132, 1999.
- [34] R. B. Cialdini, R. R. Reno, C. A. Kallgren, "A focus

theory of normative conduct: recycling the concept of norms to reduce littering in public places," *Journal of Personality and Social Psychology*, Vol. 58, No. 6, pp. 1015 - 1026, 1990.

### 주 지 혁(Joo, Ji Hyuk)



- 1996년 2월 : 한양대학교 신문방송학과(문학사)
- 1998년 2월 : 한양대학교 신문방송학과(문학석사)
- 2003년 2월 : 한양대학교 신문방송학과(문학박사)
- 2003년 3월 ~ 현재 : 극동대학교 언론홍보학과 교수

- 2014년 8월 ~ 2015년 8월 : 노던아리조나대학교 커뮤니케이션학부 방문학자
- 관심분야 : 뉴미디어, 사용자
- E-Mail : hyukjoo@kdu.ac.kr