

Internet Banking Attitudes in Association with Demographics and Motivations

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인구통계 및 동기요인과 관련된 인터넷뱅킹 태도

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Abstract This paper examines Internet banking attitudes associated with demographics and motivations for Internet banking subscribers to access their online banking sites. To find out the relationships among demographics, motivation, and attitude, I conducted ANOVA and regression analysis using survey data. The results of the paper found that age group and experience were significant demographic variable impacting motivation of economic benefits and users with much experience. Male users had stronger motivation of entertainment and getting better information than female users. Users with longer experience and frequent visitors had positive attitude on financial products. All motivation factors had influences on attitudes on both of financial products and Internet banking. This study suggests the features of Internet banking attitudes and motivations by demographics, from which we can figure out how to motivate Internet banking users for them not only to actively access their online banks rather than visit banks in person but also to have positive attitudes on their banks and Internet banking.

Key Words : Internet banking, demographics, motivation, attitude, empirical study

요약 이 논문은 인터넷뱅킹 가입자들을 대상으로 인구통계변수와 이용 동기에 따른 인터넷뱅킹 이용 태도에 대하여 탐구하였다. 인터넷 뱅킹 고객의 태도분석을 위해 설문을 통한 자료수집 후 분산분석과 회귀분석을 사용하였다. 그 결과 연령과 경험에 따라 경제적 동기에 유의한 차이를 보였다. 남성 이용자는 여성에 비해 재미와 정보수집 동기가 높았다. 사용경험이 길고 방문횟수가 높은 이용자는 인터넷 뱅킹과 은행에 대한 태도에 유의한 영향을 주었다. 태도에 영향을 미치는 모든 동기요인은 금융상품과 인터넷 뱅킹에 영향을 주고 있다. 이 연구는 인구통계변수에 따른 인터넷뱅킹 태도와 동기에 대한 특성을 제시하였으며, 이 결과는 인터넷 뱅킹 이용자를 어떻게 동기부여 할 것인가와, 자사 은행과 뱅킹 사이트에 대해 긍정적인 태도를 갖도록 할 것인가에 이용될 수 있을 것이다.

주제어 : 인터넷뱅킹, 인구통계, 동기, 태도, 실증연구

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1. Introduction

In South Korea, Internet banking is ever-increasing bank transaction ways that customers adopt when they do business with their banks. Plus, Banks are encouraging more customers to subscribe to their Internet banking services by doing an aggressive marketing campaign and providing benefits such as low transaction fee and favorable interest rate to cut down costs of transaction and expenses, which resulted in rapid growth in the number of subscribers to Internet banking services.

With the continued rapid growth in transactions through Internet banking it is critical to understand the Internet banking subscriber attitudes that are associated with demographics and motivation factors.

Recently John(2012) did study on factors contributing to Internet banking. This paper extends John's work by examining demographics(gender, age, access device, experience, and frequency in visit) and Internet banking motivations(perceived ease-of-use, perceived usefulness, and perceived enjoyment) associated with Internet banking attitudes.

This study aimed at figuring out the relationships among demographics, motivation factors, and attitudes. The result of the paper would contribute to understanding of subscriber attitudes associated with demographic and motivation variables, which may give some valuable information concerning Internet banking web design and efficient banking process to attract bank customers to visit web sites and use mobile applications rather than meet bank tellers for in-person transactions. Furthermore the generalization of the results can be examined in the context of Internet usage for other economic activities.

2. Review of Prior research and Model

Studies in the context of factors influencing Internet

banking is relatively few and limited. Some research papers focused on variables affecting Internet banking usage.

In three of the some research on factors influencing Internet banking and its adoption, Kim and Prabhakar(2000) studied two factors such as initial trust and perceived risk and unveiled how two factors have impacts on the adoption of Internet banking. Pikkariainen etc.(2004) examined consumer acceptance of Internet banking in terms of "Technology Acceptance Model(TAM)". John(2012) unveiled a list of major factors that Internet banking customers perceive while accessing the web sites to do their business with their banks.

2.1 Demographics

Gender is one of the issues some research have examined in the Internet adoption and usage[5, 19, 20]. Yim and John(2008) showed in their paper that gender has an effect on Internet usage intention for education, however there is no gender difference in perceived usefulness and web attitudes.

This paper, by extension to Internet banking, assumes that there are some gender differences in how bank customers feel about Internet banking.

Several studies have examined that age is one of the factors affecting Internet activities. Choi and Jahang(2009) found that younger users tend to visit product and entertainment sites more frequently than older ones in the U.S. and South Korea. This paper set that there are some age differences in the context of Internet banking.

Spread of Internet banking has coincided with the spread of mobile devices like smart phones and tablet computers. Access device or connection type when visiting web sites could have the predictory power, which have made some research take a factor in studying Internet activities[5].

Web experience is related to technical knowledge and skills on Internet activities. Some previous

research have examined web experience as a predictor of all kind of Internet activities[1, 5, 21]. Choi and Jahang(2009) showed that web experience is a common predictor for financial use, which means the longer users have used the web, the more confident they feel about online transactions and security issues.

Frequency in visit is both the outcome and activities of online behavior. There is a limited amount of research that analyze motivations and attitudes by frequency in visit[20]. In the study of web-base education,

2.2 Motivations

Several researchers has defined motivations as general dispositions which arouse people to use certain channel to meet their specific needs or as general driving forces that lead consumer behavior to attaining their needs[2].

Choi(2009) measured motivations for online commerce with six items, which are five goal oriented motivations(online commerce : convenience, saving time, saving money, less scales pressure, and stay informed) and a hedonic motivation(finding interesting things). Teo(2001) studied on Internet usage activities with two kinds of motivations : intrinsic and extrinsic. Perceived ease-of-use and perceived enjoyment are forms of intrinsic motivation factors and perceived usefulness is a form of extrinsic ones[atkinson 1997].

Perceived ease-of use refers to the extent to which bank customers expect to use and learn Internet banking without any difficulty and time consuming, and then they feel it is more convenient than visiting bank tellers. Some previous research have shown that perceived ease-of-use is a vital motivation to encourage people to access web sited without any hesitation[6, 14, 15, 19].

Web sites perceived to be easy to learn and use is more likely to create customer's belief that visiting such banking sites would make them more comfortable and convenient than other banking ways, which can

influence perceived usefulness. Choi and Jahang(2009) showed that convenience has significant positive relationship with online shopping in The Netherlands and South Korea.

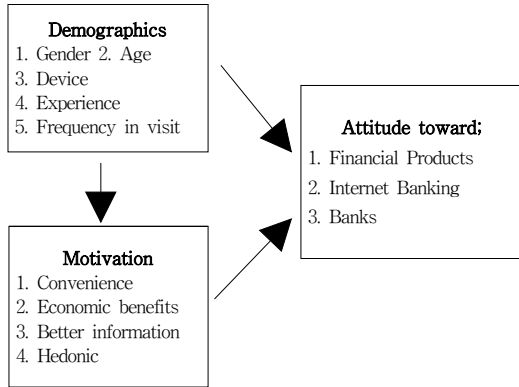
Web sites perceived to be useful is more likely to generate user's belief that the use of such web sites would yield positive benefits such as increasing banking performance, enhancing banking effectiveness, and leading to better financial decision with customized information. Actually technology Acceptance Model(TAM) hypothesizes a positive usage and performance relationship. Some research efforts have been made to show if there are relationships between perceived usefulness and attitudes or usage intention[5, 9, 14, 19].

Perceived enjoyment may be defined as the degree to which the experience of visiting web sites is perceived to be fun and enjoyable. Recent studies have shown that web sites features that help customers enjoy the visit have an effect on customer activities[8,10,14, 19]. John(2009) found that perceived enjoyment has significant effects on positive attitudes to web sites and intention to use, which lead to improved performance.

Attitudes are expressions of favor or disfavor toward a person, place, thing, or event. Attitude can be formed from a person's past and present experience. Attitude is also measurable and changeable as well as influencing the person's emotion and behavior. An attitude can be defined as a positive or negative evaluation of people, objects, event, activities, ideas, or just about anything in your environment, but there is debate about precise definitions. Eagly and Chaiken(1993), define an attitude as a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor. In this study, attitudes are conceptualized as overall feelings toward Internet banking web sites and their services with some degree of favor or disfavor. Demographics motivation factors may have effects on building

attitudes towards Internet banking.

Based on the prior research, this paper set two research models.



[Fig. 1] Research Model

3. Methodology

3.1 Sample and procedure

The survey was conducted in South Korea during March of 2013 through August of 2014. Internet users over 18 years of age were asked to participate.

A total of 309 people were surveyed about their use of internet banking services in person. 51.5% and 48.5% of them are male and female respectively. The age groups of respondents were less than 29(16.5%), 30-49(62.1%), and over 50(21.4%). Internet banking connection devices showed that Internet banking users in the sample used mobile(15.9%), computers(68.6%), and both(15.5%). The sample had 6.14 years of Internet banking experience and they visits Internet banking sites 10.46 times a month.

First, to identify independent factors that contribute to Internet banking subscriber attitudes, an explanatory factor analysis was used. For overall sampling adequacy and each indicator's sampling adequacy the study examined Kaiser's measure. To identify and evaluate the factor solution, this study ran the Bartlett's test. To check homogeneity of variances and

the multicollinearity, Levene statistics and Variance Inflation Factor were calculated respectively. Secondly to determine if there was any significant difference in motivations and attitudes by three demographics items like age, gender, and device, an ANOVA test and Scheffe post hoc analysis was performed. Third, to find out the relationships among demographics, motivation, and attitude, I conducted regression analysis.

3.2 Measurement

3.2.1 Demographics and Internet banking activities

The demographics adapted in this paper are gender, age and device. Some research showed that these demographics had effects on Internet activities, motivation, and attitude toward the Internet. In this paper, Respondents were asked what kind of devices they use when they visit their Internet banking sites. Devices respondents use were divided into three categories such computer, mobile device, and both of them.

Experience was measured by how many years respondents have done transactions at Internet banking sites. Frequency in visit was measured by how many times a month respondents visit their Internet banking sites to do Internet banking.

3.2.2 Internet banking motivations

The motivation instrument adapted in this paper contained question items measuring ease-of-use, convenience, economic benefits, and enjoyment. The four constructs were measured by ten questions.

The items used in the paper to measure ease-of-use, convenience, economic benefits, and enjoyment were adopted questions in previous papers related to constructs on web usage[4, 6, 9, 15, 19] and modified them for this study on Internet banking. Respondents were questioned to indicate their agreement and disagreement with two items for ease-of-use, three items for convenience economic benefits each, two

items for enjoyment using five point Likert-type scale (1=strongly disagreement, 5=strongly agree)

3.2.3 Attitude toward Internet banking

While developing attitudes toward Internet banking, this paper referred to some previous research on online shopping and e-purchase[10, 11 14]. The attitude instrument adapted in this paper contained question items measuring information on products, and Internet banking and banks. The two constructs were measured by five questions using five point Likert-type scale. Respondents were questioned to indicate their agreement and disagreement with two items for information on products, three items for Internet banking and banks.

3.3 Validity and Reliability

3.3.1 Validity and Sampling Adequacy

Based on prior research on Internet usage, this paper conducted factor analysis after dividing ten items on motivations into four concepts to enhance their conceptual validity. During the factor analysis, factors with Eigenvalue of at least 1.0 were used to access the number of factors to extract. To get a simpler factor structure resulted in each factor representing a distinct construct, the extract method used in this analysis was Principal Component analysis with VARIMAX rotation with Kaiser Normalization.

Ten items on motivations were hypothesized to measure valid and reliable constructs. In an initial factor analysis, one item whose loading was 0.472 were dropped from subsequent analysis. The second and final factor analysis was performed without the item dropped from previous analyse. The resulting factor structure was composed of nine items measuring four distinct factors which explained 84.825% of the variance<Table 1>.

<Table 1> Extraction Sums of Square Loadings on Motivations

Factors	Eigenvalues	% of the Variance	Cumulative %
Ec. Benefits	2.376	26.405	26.405
Ease-of Use	1.822	20.246	46.652
Enjoyment	1.779	19.770	66.421
Better Info.	1.656	18.403	84.825

Note: Ec.: Economic, Info: Information

Five items on attitudes were hypothesized to measure valid and reliable constructs. Because Eigenvalues of two factor were over 1.000 in the first factor analysis, This study did not perform factor analysis any more. As <Table 2> shows, the resulting factor structure was composed of five items measuring two distinct factors which explained 78.597% of the variance.

<Table 2> Extraction Sums of Square Loadings on Attitudes

Factors	Eigenvalues	% of the Variance	Cummulative %
Fin.Products	2.030	40.590	40.590
Banks*	1.900	38.007	78.597

* Internet Banking and Banks, Fin: Financial

This study examined Kaiser’s measure of overall sampling adequacy and each indicator’s sampling adequacy. The KMO is a means to show the degree to which the indicators of a construct belong together. KMO measure with less than 0.5 is unacceptable. Table 3 shows that the KMO on motivations and attitudes of this analysis were 0.728 and 0.630 respectively.

To identify and evaluate the factor solution, this study ran the Bartlett’s test which is useful to examine whether or not the correlation matrix is appropriate for factoring. As <Table 3> shows, the Bartlett’s test statistics on motivations and attitudes were highly significant for this data set respectively.

<Table 3> KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy on Motivations		0.728
Bartlett's Test of Sphericity on Motivations	Approx. Chi-Square	1464.085
	d.f.	36
significance		0.000
Kaiser-Meyer-Olkin Measure of Sampling Adequacy on Attitudes		0.630
Bartlett's Test of Sphericity on Attitudes	Approx. Chi-Square	732.134
	d.f.	10
significance		0.000

3.3.2 Internal Reliability

To access the internal reliability of four factors on motivations and attitudes identified from the explanatory factor analysis, Cronbach coefficient alpha which shows the degree of internal consistency of the constructs were calculated. As <Table 4> and <Table 5> show, all coefficient alpha values exceeded 0.7000 which means factors are considered to be internally consistent.

<Table 4> Reliability on Motivation Factors

Factors	Mean	Standard Deviation	Cronbach Alpha
Economic Benefits	4.414	0.733	0.860
Ease-of Use	3.798	0.933	0.911
Enjoyment	3.087	0.924	0.843
Better Information	3.1543	0.908	0.722

<Table 5> Reliability on Attitude Factors

Factors	Mean	Standard Deviation	Cronbach Alpha
Financial Products	2.992	0.808	0.885
Internet Banking&Banks	3.639	0.837	0.759

4. Results

4.1 Descriptive Analyses

<Table 6> to <Table 8> presents results of descriptive analyses of motivations and attitudes in genders, age groups, and devices used. Levene statistics were calculated to check homogeneity of variances. Any significance was not found at 5%.

4.1.1 By Gender

A series of t-test results unveiled that the male sample had longer Internet banking experience(m=6.61 years) than the female sample and there was no significant difference in frequency in visit. On motivations, the male had significantly higher economic, hedonic, and informational motivations than the female. On attitudes, the male also had positive attitudes on both of factors.

<Table 6> Factors by gender(Mean)

Factors	Male	Female	sig
Demographics			
Experience	6.61	5.65	0.027
Frequency	11.44	9.45	0.276
Motivations			
Economic Benefits	4.5010	4.3222	0.015
Ease-of Use	3.7642	3.8333	0.498
Enjoyment	3.3176	2.8433	0.000
Better Information	3.3082	2.9900	0.000
Attitudes			
Financial Products	3.1321	2.8433	0.001
Internet Banking & Banks	3.7400	3.5311	0.007

4.1.2 By Age Groups

The results of ANOVA test and Sheffe post hoc analysis showed that the sample over 50 years old had the longest Internet banking experience(m=7.08 years) and age group of 30-49 visit Internet Banking sites(m=12.05 times a month) the most frequently. Over 50 age group of the sample had significantly higher motivations of all factors than other groups. A significant difference in attitude on financial products was founded.

<Table 7> Factors by age group(Mean)

Factors	less than 29(a)	30-49(b)	over 50(c)	sig.
Demographics				
Experience	2.23b,c	6.81a	7.08a	0.000
Frequency	3.72b,c	12.05a	10.77a	0.004
Motivations				
Economic Benefits	3.9935b,c	4.4844a	4.5354a	0.000
Ease-of-Use	3.4902b,c	3.8359a	3.9242a	0.021
Enjoyment	3.0686c	2.9688c	3.4470a,b	0.000
Better Information.	2.8922c	3.0938c	3.5303a,b	0.000
Attitudes				
Financial Products	2.9804	2.9896	3.0076	0.980
Internet Banking & Banks	3.6144	3.5885c	3.8030b	0.088

Column means with a,b,c indicate that means differ significantly from those in other group at p<.05

4.1.3 By devices used

<Table 8> shows that there was no difference in experience by devices used and the sample using both of computer and mobile accessed Internet banking sites the most frequently(m=23.73 times a month). there was no significant differences in motivations factors. A significant difference in attitude on financial products was found.

<Table 8> Factors by device(Mean)

Factors	mobile (a)	computer(b)	both(c)	sig.
Demographics				
Experience	5.90	6.05	6.86	.395
Frequency	10.11b,c	7.87a,c	23.73a,b	0.000
Motivations				
Economic Benefits	4.4082	4.4057	4.4583	0.876
Ease-of-Use	3.7857	3.7901	3.8438	0.928
Enjoyment	3.2551	3.0660	3.0874	0.305
Better Information	3.2653	3.1297	3.1458	0.568
Attitudes				
Financial Products	3.2041	2.9646	2.8958	0.091
Internet Banking &Banks	3.6395	3.6336	3.6597	0.972

Column means with a,b,c indicate that means differ significantly from those in other group at p<.05

4.2 Analysis of Influence

Table 9 and Table 10 show the results of influence relationships among demographics, motivations and attitudes.

4.2.1 Demographics on Motivations

The Values of Variance Inflation Factor(VIF) were calculated to check the multicollinearity among the independent variables to each dependent variable in <Table 9> and <table 10>. The values of VIF are less than 3.00, which means there is no problem using these variables in regressions. <Table 9> gained from a series of regression analyses shows demographic variables affecting motivations. The female sample were more interested in enjoyment($\beta=-0.276$, $p<0.01$) and better information($\beta=-0.148$, $p<0.01$) from Internet banking. Senior users had higher motivations of economic benefits($\beta=0.134$, $p<0.05$) and better

information($\beta=-0.164$, $p<0.01$). Experience had an effect on all kinds of motivation, which means longer users had strong motivation of using Internet banking. The number of visit was an significant antecedent variable impacting motivations of ease-of-use($\beta=-0.171$, $p<0.01$) positively, but which had an influence on getting better information($\beta=-0.157$, $p<0.01$) negatively.

<Table 9> Demographics on motivations(beta)

Motivation	Economic Benefits	Ease-of-Use	Enjoyment	Better Information
Demographics+	0.151**	0.127**	0.104**	0.161**
Gender	-0.083	0.108	-0.276**	-0.148**
Age group	0.134*	0.091	0.109	0.164**
Device	0.071	0.009	-0.033	-0.025
Experience	0.255**	0.238**	-0.131*	0.235**
Frequency	0.068	0.171**	0.016	-0.157**

Note: *p<0.05, **p<0.01 +R square change

4.2.2 Demographics and Motivations on Attitudes

<Table 10> shows how demographics and motivations had influences on attitudes. Female group and users with longer experience significantly($p<0.01$) had more positive attitudes on both of financial products and Internet Banking and banks. All motivation factors had impacts on attitudes. users with economic motivation had negative attitude on financial products($\beta=-0.146$, $p<0.05$).

<Table 10> Demographics and motivations on attitudes(beta)

Factors	Financial products	Internet banking and banks
Demographics+	0.122**	0.089**
Gender	-0.239**	-0.181**
Age group	-0.045	0.047
Device	-0.154**	0.046
Experience	0.157**	0.179**
Frequency	0.116*	-0.112
Motivations+	0.324**	0.447**
Economic Benefits	-0.146*	0.183**
Ease-of-Use	0.237**	0.266**
Enjoyment	0.138**	0.325**
Better Information	0.434**	0.187**

Note: *p<0.05, **p<0.01 +R square change

5. Conclusion

This paper unveiled the relationships among demographics, motivations of Internet banking, and attitudes on Internet banking. To understand Internet banking subscribers' attitudes associated with demographic variables and motivation factors.

Age group and experience were significant demographic variables impacting motivation of economic benefits, which means senior users and people with longer experience on Internet banking had strong economic motivation. Users with much experience and frequent visitors had higher motivation of ease-of-use and male users had stronger motivation of pursuing entertainment and getting better information at their Internet banking sites than female users.

All demographic variables except age group impacted attitude on financial products. Users with longer experience and frequent visitors had positive attitude on financial products. Gender and experience affected attitude on Internet banking and banks. Users with longer experience had positive, but female visitors negative attitude on Internet banking and their banks. All motivation factors had influences on attitudes on both of financial products and Internet banking.

The results of the paper may give some valuable information concerning Internet or mobile banking web design and development to attract bank customers to visit web sites rather than meet bank tellers in person. Financial technology, also known as Fintech, such as mobile payments, mobile card, financial security to easy payment process, reduce fraud, and promote financial planning and investments will be promising topics.

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