

## A STUDY ON THE ACCEPTANCE FACTORS TO USE MOBILE EASY REMITTANCE SERVICE

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**ABSTRACT.** *As Fintech technology has been developed, innovative financial services are being offered. Among them, mobile easy remittance service is spreading in a vast speed. The mobile easy remittance service is a service that simplifies the remittance process by replacing the id, password, certificate, and secret card authentication procedures required for the conventional online or mobile remittance service with fingerprint recognition. Despite the convenience of the mobile easy remittance service, the number of ongoing users is low and the users are limited to the 20s. In this study, the acceptance factors of mobile easy remittance service are analyzed using TAM (Technology Acceptance Model) model for 193 mobile easy remittance service users. As a result, perceived usefulness has been found to be the most influential factor in the acceptance of the mobile easy remittance service. Perceived ease of use and social influence also have been found to be acceptance factors to use the service.*

**Keywords:** Fintech, Mobile easy remittance service, Technology acceptance model (TAM), Acceptance factors

**1. Introduction.** As the need for financial innovation through ICT (Information and Communications Technology) grows, various Fintech services are being provided. Among them, mobile banking (P2Bank), mobile payment, and mobile remittance service (P2P) are the most active services [1]. Recently, a mobile easy remittance service has been rapidly spreading in the field of money transfer and payment, which can transfer or pay only by pre-registered user password or fingerprint recognition.

However, as the main users of this service are concentrated in the 20s, a diffusion strategy for securing various users is required. In this study, we propose a diffusion strategy by analyzing the intention of accepting mobile money transfer service for 193 mobile remittance service users. This study is organized as follows. Section 2 presents the characteristics of the mobile remittance service and reviews of previous studies related to this study. Section 3 presents the research models and the hypotheses. Section 4 presents

the method for data collection and analysis. Section 5, we describe results and discussions. The conclusion of this study is described in Section 6.

## 2. Theoretical Framework.

**2.1. Mobile easy remittance service.** The mobile easy remittance service, which belongs to the new pre-paid electronic payment service, is a service focused on shortening the procedure to remittance. It is an innovative P2P remittance service that replaces the complex authentication procedures required for each remittance from existing mobile banking with fingerprint recognition or pre-stored password entry. The mobile easy remittance services are provided as mobile apps, and their usage has been steadily increasing with the proliferation of smartphones. Korea's mobile remittance service usage (daily average) in the third quarter of 2016 increased by 25.7% and 70.1% from the second quarter to 150,000 and KRW 7.9 billion respectively [2]. However, App Ape Lab [3], the mobile app analytics media, pointed out that about 70% of mobile remittance service users are in the 20s. It means that the mobile remittance service is only accepted for certain age groups. Therefore, this study aims to verify the acceptance factors of mobile remittance service and to propose a strategy to spread the prevalent consumer group based on the research results.

**2.2. Technology acceptance model.** Most industries are aiming to gain competitive advantage through new product and technology launch strategies. Competitiveness means profitability; therefore, it is important to understand the acceptance of new products by consumers. Davis [4] proposed the Technology Acceptance Model (TAM) and defined perceived usefulness and perceived ease as factors affecting technology acceptance intention. TAM model developed by Davis is the most used framework in predicting information technology adoption [5,6]. For example, the adoption factors of new information technologies such as mobile game [7], m-banking [9], and smartwatch [9], were analyzed by using TAM model. Jiang et al. [7] showed that perceived usefulness, perceived entertainment, and economic cost significantly affect the attitude of use, which results in behavior intention to adopt the mobile game. Jeong and Yoon [8] indicated that perceived usefulness, perceived credibility, self-efficacy and perceived ease of use have a positive influence on consumers' behavioral intention to adopt m-banking. Jeong et al. [9] verified that the user experience and perceived similarity of the smartphone have a positive effect on acceptance intention of the smartwatch. In this study, we used TAM model for verifying the acceptance factors to use mobile easy remittance service.

## 3. Research Model and Hypotheses.

**3.1. Research model.** This study analyzed the acceptance factors of mobile easy remittance service using TAM model. The perceived usefulness, perceived ease of use, service reliability, self-efficacy, social influence, and user innovativeness were defined as independent variables influencing acceptance of mobile easy remittance service. The research model is shown in Figure 1.

**3.2. Research hypothesis.** Perceived usefulness is defined as the level of belief that users will be able to improve their performance by using new services. Liébana-Cabanillas et al. [10] argued that the most important factor in mobile payment services is perceived usefulness, and it has a strong positive effect on attitude and intention to use. Therefore, we hypothesize that:

*H1a: Perceived usefulness will have a positive effect on attitude to service.*

*H1b: Perceived usefulness will have a positive effect on intention to use.*

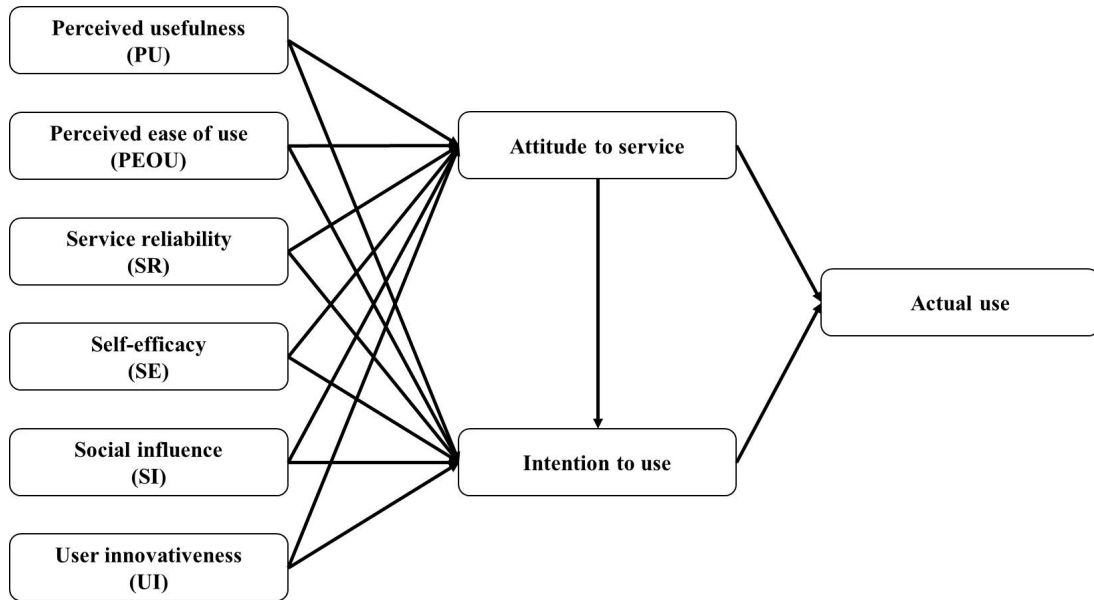


FIGURE 1. Research model

Perceived ease of use is defined as the level at which consumers expect new services to be available without much effort. Liu and Tai [11] noted that perceived ease of use affects the intention to use mobile payment system. Therefore, we hypothesize that:

*H2a: Perceived ease of use will have a positive effect on attitude to service.*

*H2b: Perceived ease of use will have a positive effect on intention to use.*

Service reliability is defined as the level at which a user can trust a new technology before accepting it. In general, new technologies are accompanied by risks such as uncertainty, and Lule et al. [12] confirmed that service reliability has the greatest effect on user acceptance intention for mobile banking service. Therefore, we set the following hypothesis.

*H3a: Service reliability will have a positive effect on attitude to service.*

*H3b: Service reliability will have a positive effect on intention to use.*

Self-efficacy is defined as the level of confidence that users will be able to fully use new services. Yang and Kim [13] confirmed that users are highly influenced by self-efficacy in mobile payment acceptance and claimed that customized services should be provided so that users can feel self-efficacy. Therefore, we set the following hypothesis.

*H4a: Self-efficacy will have a positive effect on attitude to service.*

*H4b: Self-efficacy will have a positive effect on intention to use.*

Social influence is defined as the extent to which a user receives influence from others in accepting a new service. In Yu's study [14] on acceptance of mobile banking, it is proved that social influence is the most influential variable in usage intention formation, and it is effective to advertise where WOM (Word of Mouse) is active such as social media. Therefore, we set the following hypothesis.

*H5a: Social influence will have a positive effect on attitude to service.*

*H5b: Social influence will have a positive effect on intention to use.*

User innovativeness is represented the degree to which user is willing to accept new services voluntarily [15]. Jeong et al. [16] suggested that highly innovative user is more aggressive and willing to use new services. Therefore, we set the following hypothesis.

*H6a: User innovativeness will have a positive effect on attitude to service.*

*H6b: User innovativeness will have a positive effect on intention to use.*

Attitude to service means the level of positive or negative attitudes toward accepting and utilizing new services. Jiang et al. [7] confirmed that the positive attitude toward

service acceptance in mobile game acceptance has a high acceptance intention. As Ram [17] argued that user attitudes have an indirect effect on actual use, a positive attitude toward service is expected to increase the intent to use and actual use. Therefore, we set the following hypothesis.

*H7a: Attitude to service will have a positive effect on intention to use.*

*H7b: Attitude to service will have a positive effect on actual use.*

Intention to use is defined as the level of desire to accept a new service, and actual use is the concept of behavior in which the user actually uses the service. The theory of planned behavior developed by Ajzen [18] verified that the direct cause of acceptance behavior is the intention to accept. Therefore, we set the following hypothesis.

*H8: Intention to use will have a positive effect on actual use.*

## 4. Methodology.

**4.1. Collection of materials.** A total of 286 respondents were collected from a large private university in Korea (Table 1). As shown in Table 1, 193 respondents (67.5%) have experience using mobile easy remittance services. The 193 respondents who had experience using mobile easy remittance service were used for analysis. The measurement scales in the survey used a seven-point Likert scale ranging from (1) strongly disagree to (7) strongly agree.

TABLE 1. Demographics of sample data

Measures		Frequency (%)
Use experience	Yes	193 (67.5)
	No	93 (32.5)
Gender	Male	154 (53.8)
	Female	132 (46.2)
Age	20-29	286 (100.0)

**4.2. Reliability, validation and structural model fits analysis.** Fornell and Larcker [19] suggested a value of CR (Composite Reliability) above 0.7, AVE (Average Variance Extracted) above 0.5, and Cronbach's  $\alpha$  above 0.7 as the acceptable reliability of the instruments. As shown in Table 2, all of the constructs exceeded the reference values. Convergent validity is required that loading factor mean above 0.7. The loading factor mean of all variables are between 0.831 and 0.887; therefore, the convergent validity is accepted.

TABLE 2. Reliability and validation test results

Variables	Cronbach's $\alpha$	CR	AVE	Loading Factor Mean
Perceived usefulness (PU)	.907	0.922	0.774	0.850
Perceived ease of use (PEOU)	.871	0.861	0.667	0.831
Service reliability (SR)	.894	0.892	0.718	0.862
Self-efficacy (SE)	.941	0.936	0.805	0.884
Social influence (SI)	.917	0.905	0.741	0.887
User innovativeness (UI)	.831	0.838	0.685	0.838

For discriminant validity, the square root of the AVE for each variable should be greater than the correlation values between any two variables. The inter-variable correlation matrix (see Table 3) shows that all values satisfied these recommendations for discriminant validity.

TABLE 3. Correlations of variables and square root of AVE

	PU	PEOU	SR	SE	SI	UI
PU	<b>.880</b>					
PEOU	.396	<b>.817</b>				
SR	.168	.043	<b>.847</b>			
SE	.390	.317	.099	<b>.897</b>		
SI	.015	.013	.255	.048	<b>.861</b>	
UI	.260	.014	.071	.399	.153	<b>.828</b>

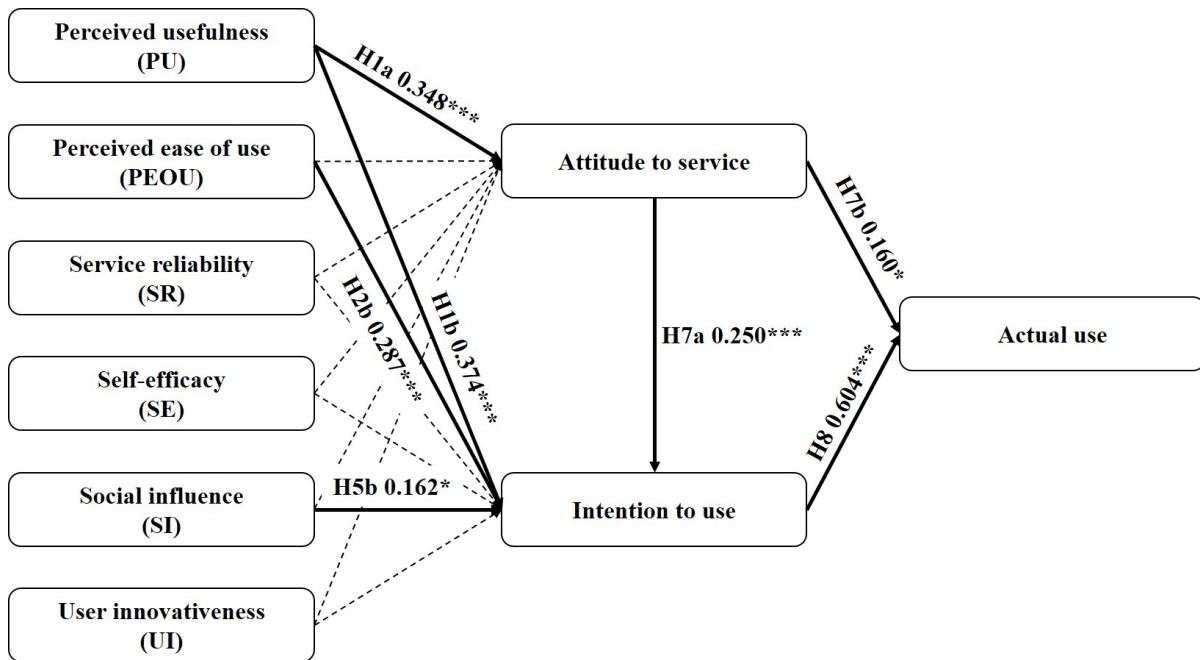
Note: Square roots of the AVE are the bolded diagonal value.

TABLE 4. Structural model fits analysis

Fit measures	$\chi^2/df$	AGFI	NFI	CFI	TLI	RMSEA
Value	1.570	0.779	0.866	0.946	0.938	0.055
Recommended value	< 3	> 0.8	> 0.9	> 0.9	> 0.9	< 0.08

The results of evaluation of structural model fits are as following:  $\chi^2/df = 1.570$ , AGFI = 0.779, NFI = 0.855, CFI = 0.946, TLI = 0.938, RMSEA = 0.055. The overall fit measures show a good fit of the model as shown in Table 4.

5. **Results and Discussions.** The results of the structural model analysis are shown in Figure 2. Seven of the fifteen hypothesized associations are significant at  $p < 0.05$  or  $p < 0.01$  or  $p < 0.001$ , whereas eight other hypotheses are not significant.



\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

FIGURE 2. Results of structural model analysis

Perceived usefulness has a significant positive effect on the attitude to service (path coefficient = 0.348,  $p < 0.001$ ) and intention to use (path coefficient = 0.374,  $p < 0.001$ ), therefore, supporting H1a and H1b. In addition, perceived usefulness has a positive effect on actual use through mediating attitude to service and intention to use. It means that perceived usefulness is the most influential factor in the acceptance of the mobile easy

remittance services in this study. Therefore, it is necessary to promote marketing so that users can recognize the usability of the mobile easy remittance services.

Perceived ease of use has a significant effect on intention to use (path coefficient = 0.287,  $p < 0.001$ ), therefore supporting H2b. The mobile easy remittance service is a banking service that reduces the cost of money by dramatically shortening the remittance process. Since perceived ease of use is a factor that has a strong influence on the acceptance of mobile remittance services by perceived usefulness, it is necessary to emphasize that users are sufficiently perceived.

Social influence has a significant effect only on intention to use (path coefficient = 0.162,  $p < 0.001$ ), therefore supporting H5b. The mobile easy remittance service provides benefits that require interaction such as exemption of remittance fees among users, and it is considered that the word of the surrounding person influences acceptance. Therefore, it is necessary to expand the word-of-mouth channels for spreading the user base, and events such as friend invitation are expected to be effective in creating new users.

Attitudes to service has a significant effect on intention to use (path coefficient = 0.250,  $p < 0.001$ ) and actual use (path coefficient = 0.160,  $p < 0.05$ ), therefore supporting H7a and H7b. However, the effect on actual use is relatively lower than the effect on intention to use. It means that a positive attitude to the service induces an intention to accept the service, but a positive attitude makes it difficult to induce actual use. Finally, intention to use not only has a significant effect on actual use (path coefficient = 0.604,  $p < 0.001$ ) but also affects actual use as a mediating variable of attitude to service.

Service reliability, self-efficacy, and user innovativeness have no significant effect on the attitude to service and intention to use of mobile easy remittance service. This can be interpreted that the financial service is a service based on safety, so users do not consider it particularly carefully. This result is also presumed to be due to the fact that the respondents are the 20s who are familiar with using mobile banking apps.

The reason that the hypotheses related to self-efficacy and user innovativeness were rejected is also attributed to the fact that respondents are in the 20s. The 20s respondents are well accustomed to using mobile apps and have innovativeness for new mobile banking service adoption.

**6. Conclusions.** In this study, we verified the acceptance factors to use the mobile easy remittance service, and the implications are as follows.

Perceived usefulness has been found to be the most influential factor in the acceptance of the mobile easy remittance service. Perceived usefulness has a positive effect on the attitude to service, intention to use, and actual use. Therefore, it is necessary to promote the usefulness of the mobile easy remittance service in order to spread the service.

Perceived ease of use and social influence also have been found to be the acceptance factors to use the service. Therefore, it is necessary to develop a mobile easy remittance service with more convenient functions. Also, it can be found that the formation of community among users and the effect of word of mouth are important.

Service reliability, self-efficacy, and user innovativeness have been found to be insignificant in the acceptance of the mobile easy remittance service. These results are due to the fact that respondents are in their 20s, which is a limitation of this study. To verify more general acceptance factors of the mobile easy remittance services, it is necessary to study respondents with a wider age range.

In the future, various Fintech services such as mobile easy remittance services will be developed. The results of this study can be used to develop Fintech service and establish its marketing strategy. However, only six acceptance factors were analyzed in this study. Therefore, it is needed to consider various factors which affect the acceptance of the Fintech service in future study.

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