

## How does self-service technologies involuntary use affect customers' intention to reuse?

Nguyen Thi Trang<sup>1\*</sup>, Kim Sungho<sup>1</sup>

<sup>1</sup>Hanyang University, Korea

\*Corresponding author: trangnguyen@hanyang.ac.kr

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### ABSTRACT

In response to rising labor costs and the rapid growth of technological innovation, many companies are adopting new technologies in their service processes. The adoption of Self-Service Technologies (SST) has brought many benefits, such as faster transaction speed and lower processing fees. Although previous studies show a positive relationship between the level of perceived benefits and involuntary use of SSTs and customer convenience, it is uncertain whether the level of innovation and benefits can influence the relationship between involuntary use of SSTs and customer convenience. In this study, we set up a noble research model and investigated the relationship between customer convenience and involuntary use, which was influenced by two moderators based on a sample of 345 customers in Korea. The results suggest that involuntary use is negatively related to customers' comfort in using SSTs. Moreover, the perceived usefulness and innovativeness of SSTs may moderate the effect of involuntary use on customers' comfort. Furthermore, managerial recommendations are proposed for managers to develop strategies for applying SSTs in their services.

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## 1. Introduction

### 1.1. Background

In response to rising labor costs and technological innovation, many companies are implementing new technologies into their service processes. As a result, service is becoming increasingly technological, with a range of Self-Service Technologies (SSTs) being deployed as part of conventional service options. "Self-Service Technologies (SSTs) are technological interfaces that enable customers to produce a service independent of direct service employee involvement" (Meuter, Ostrom, Roundtree, & Bitner, 2000, p. 50). In addition, the introduction of SSTs has opened up the potential to improve productivity and service quality while cutting labor costs; hence, service providers are increasingly considering SSTs as a provider of core services to customers (Weijters, Rangarajan, Falk, & Schillewaert, 2007). To motivate the use of SSTs, some companies have completely replaced traditional services with SSTs (Reinders, Dabholkar, & Frambach, 2008). Elliott, Meng, and Hall (2012) indicated that forcing customers to use SSTs can lead to reducing awareness of service quality and positive reviews of its services and showed that mandatory use, leads to a negative attitude towards the use of SSTs, adversely affects behavioral consequences. Everything has two sides, the involuntary use too negative affects the satisfaction and behavioral intentions customer with self-service technologies. The expanded consumption

emotion descriptors (CES) include the following additional emotion descriptors: awed, carefree, comforted, helpless, impatient, longing, nostalgic, protective, and wishful (Richins, 1997). People have recently focused much on emotions such as anger, discontent, worry, sadness, and fear responses while other emotions associated with buying goods and services have not been fully explored such as comfort. But comfort can be a key factor behind maintaining successful, ongoing relationships between service providers and customers, backed by recent research on SSTs (Spake, Beatty, Brockman, & Crutchfield, 2003). To fill the gap, this study attempts to propose and validate the relationship between Involuntary use SSTs and customer comfort.

Although SSTs offer many benefits, such as faster transaction speeds and lower processing fees, there is still a large group of customers who refuse to adopt such services because of their level of innovation (Curran, Meuter, & Surprenant, 2003). Customers with a high level of innovativeness easily accept buying a new product compared to those with a low level (Aydin, 2009). Therefore, managers could develop tactics to increase the use of SSTs by evaluating how innovative consumers are. Similarly, benefits were found to be a significant determinant of customers' attitudes and intentions (Hu, Chau, Liu, Kar, & Tam, 1999). Therefore, it is anticipated that the link between the forced usage of SSTs and consumer comfort would be moderated by the extent of perceived advantages. Prior research, however, hardly ever discussed the moderator perceived advantages impact link between comfort and involuntary usage. This study was written as a result to close this gap.

### ***1.2. Research purpose***

This paper studies consumers' intention to reuse the products in which the firm just provides Self-Service Technology (SSTs) based on consumer comfort and consumer innovativeness, taking a kiosk in the airport or Automated Teller Machine (ATM) as an example. Customers with different degrees of innovativeness and perceived benefits will behave differently when facing new services or products. Consumer innovation will provide some theoretical support for service marketing and also give relevant opinions on actual product sales. Therefore, this study tries to discuss the following questions:

- (1) How does SSTs Involuntary Use affect customers' comfort with using SSTs?
- (2) How does customer's comfort in using SSTs affect customer satisfaction and in turn, affect customer reuse intention?
- (3) Does the level of consumer innovativeness moderate the effect of involuntary use of SSTs on customers' comfort in using SSTs?
- (4) Does the level of perceived benefit moderate the effect of involuntary use of SSTs in customers' comfort on using SSTs?

### ***1.3. Research contribution***

This study gives novel insights from the following aspects. Previous studies only mentioned many technical factors, technology readiness, quality, and customer trust with that technology. Rarely does it mention how the customer feels? Especially, involuntary use of SSTs, it could make customers feel uncomfortable. Among the extremely limited research on the relationship between involuntary use and customer comfort in using SSTs. Most of them refer only to other areas such as service relationships, traditional service humans, culture (Simmons, 2001; Simmons & Slater, 1987; Spake et al., 2003), and how consumer comfort impact customer satisfaction and behavior intention. This is the first study examining the effect of involuntary use on customer comfort and the moderating effect of perceived benefits and customer innovativeness

on the relationship between involuntary use and customer comfort.

Currently, there are many types of self-service technologies such as self-ordering and paying at restaurants, self-check-in at the airports, self-purchase, and payment at supermarkets. This study subject is customers who had experienced self-check-in at the airport in Korea. The study's objective is to close this gap by examining if the uncomfortable use of SSTs has a detrimental effect on customer satisfaction and repurchase intention. This study produced a conceptual model that describes the consequences of compelling customers to use SSTs based on theories about perceived control, psychological reactance, and attribution, as well as the forced adoption of innovations.

Practically, this study can provide a number of theoretical bases which helps businesses to more accurately understand consumer psychology. With the knowledge of consumer innovation and perceived benefits, marketers can define a precise target group and formulate specific sales strategies.

## **2. Theoretical basis**

### ***2.1. Definitions and previous studies***

#### *2.1.1. Involuntary use and its effects*

Customers are forced to use one-site Self-Service Technologies (SSTs) against their will because they have no alternative options for receiving services (Reinders et al., 2008). Perceived decisional control is an important aspect for customers in evaluating and using SSTs (Lee & Allaway, 2002), so involuntary use, which reduces the level of control, has a negative effect on the evaluation of SSTs (Reinders et al., 2008). Psychological reactance theory suggests that when consumers experience enslavement to SSTs, they may develop negative attitudes toward the technology (Johnson et al., 2008). Additionally, research demonstrates that views about the good or service are significantly predicted by intrinsic motives (Barczak, Ellen, & Pilling, 1997). Forcing consumers to use SSTs will make them feel being manipulated to adopt the technology, which will make them develop negative attitudes toward SSTs (Reinders et al., 2008). Therefore, forcing an unwelcome innovation upon customers causes resistance to that innovation (Ram & Jung, 1991). This happens because consumers have to change their current behaviors and are not consulted about the change in advance, which will make them feel that they are being manipulated to accept this change.

Based on the above arguments, this paper proposes:

*H1: Involuntary use will negatively (-) relate to Consumer comfort on using SSTs*

#### *2.1.2. Customer comfort on using SSTs*

Numerous academic disciplines, including psychology, sociology, and communication study, have examined how humans seek comfort. The pursuit of comfort by people from the time of birth to the time of death has been described as a fundamental human activity (Dunn, 1989; Simmons & Slater, 1987). This is not a negative aspect; rather, individuals make decisions to increase or protect feelings of comfort (Simmons, 2001). Therefore, one factor to consider while choosing service providers might be comforted. It is widely acknowledged that decision-making is typically correlated with emotional reactions, such as comfort (Sheth, Newman, & Gross, 1991). The term psychology of comfort has been used to explain choices made by customers that reduce the complexity of the buying situation. In addition, customers may avoid SSTs if they are not comfortable with using the technology, even when they can see the benefits of using SSTs (Meuter, Ostrom, Bitner, & Roundtree, 2003). Someone does not see a significant benefit to technology and are comfortable and will continue to do things as they have always done them (Robertson &

Gatignon, 1991). Therefore, it is rational to propose the relationship between comfort and satisfaction with SSTs use.

*H2: Customer comfort on using SSTs will positively (+) relate to Satisfaction*

### *2.1.3. Satisfaction and its effects*

In terms of results, customer satisfaction is evaluated after the customer himself/ herself consumes the product or use the service, which is defined as an attitude toward experience (Cronin & Taylor, 1992). Moreover, in the evaluation process, customer satisfaction is the consumption experience was at least better than expected. However, regardless of the definitions focusing on the result or the evaluation process, customer satisfaction has been a crucial criterion for assessing service quality (Cronin & Taylor, 1992). Customer satisfaction occupies a central position in marketing research and in organizations because it is an important driver of re-patronage, loyalty, positive word-of-mouth behaviors, and firm's performance (Oliver, 1980).

In the context of SSTs, customer satisfaction may be identified by two dimensions: satisfaction with the service provider and satisfaction with the system or the technology itself (Xu, Peak, & Prybutok, 2015). If the consumer evaluates the SSTs experience as pleasurable and enjoyable, the customer should be satisfied with the SSTs because enjoyment, as a hedonic aspect of technology self-service use, is a key determinant of customer satisfaction (Robertson, McDonald, Leckie, & McQuilken, 2016).

*H3: Satisfaction will positively (+) relate to the Intention to reuse*

### *2.1.4. Intention to reuse*

Intention to reuse refers to the future behavior of a product or service after a consumer experiences satisfaction (Oliver, 1980). The customer's intention to reuse becomes an important factor in predicting the consumer's actual consumption behavior from the perspective of a company (Kwon & Ham, 2006). When a customer reuses a firm's products or services, it means that the company is guaranteed its continuous profit creation; then customers are more likely to establish their loyalty, which leads to the company's goal of sustainable development. This measurement of reuse intention refers to the intention and propensity of customers to continue to use a specific product or service (Kim, Seo, & Kim, 2010). In this study, based on various previous studies, the experience of customers with the SSTs is the individual's subjective will, which is reflected by comfort, satisfaction, and future choice behavior.

### *2.1.5. Customer innovativeness and its moderating effect*

Customer innovativeness is a marketing concept, which has not been uniformly defined. Innovativeness is the formation of new attitudes or new ideas and decisions by customers regarding the use of new products or new knowledge (Rogers & Shoemaker, 1971). In other words, customers' innovativeness is viewed as customers' ease on buying new products rather than others (Manning, Bearden, & Madden, 1995). Furthermore, customer innovation has been defined as a situational trait formed by customers' basic and mixed traits and learning history and this trait will always affect customers' behavior during the consumption process (Mowen, Christia, & Spears, 1998). In addition, Steenkamp, Ter Hofstede, and Wedel (1999) proposed that customer innovativeness is a behavioral tendency of customers attracted by new products. Many researchers suggest that customer innovation can be applied to any consumption sector and can reflect potential innovation traits, styles, customer perception, and behavioral trends (Barczak et al., 1997; Roehrich, 2004). Customers innovation in this study is innate innovation and domain-specific innovativeness, which means that customers can be influenced by product areas, communal areas,

associations, and people around them when applying a new product or service. Therefore, it is believed that the level of innovativeness can moderate the effect of involuntary use on comfort.

*H4: Customer's innovativeness can moderate the effect of involuntary use on the customer's comfort*

The table below summarizes the definition of consumer innovation in previous research.

**Table 1**

Customer's innovativeness literature review

Author	Item	Definition
Rogers and Shoemaker (1971)	Adaption innovativeness	In social groups, the individual use new products earlier than others.
Midgley and Dowling (1978)	Customer innovativeness	Decisions and accept new ideas independently without cooperating with others.
Hirschman (1980)	Customer innovativeness	Personal tendency to explore new and unique things.
Manning et al. (1995)	Customer innovativeness	Customer innovativeness Customer's tendency to buy new products earlier than others.
Steenkamp et al. (1999)	Innate innovativeness	A propensity to purchase new and distinctive brands and items.
Mowen et al. (1998)	Customer innovativeness	A basic and mixed trait of formed by the learning progress.
Sood and Tellis (2005)	Global innovativeness	The willingness of similar and different customers around the world to experience new products.
Aydin (2009)	Domain-Specific Innovativeness	Adapting innovation in specific product categories.

Source: The researcher's data analysis

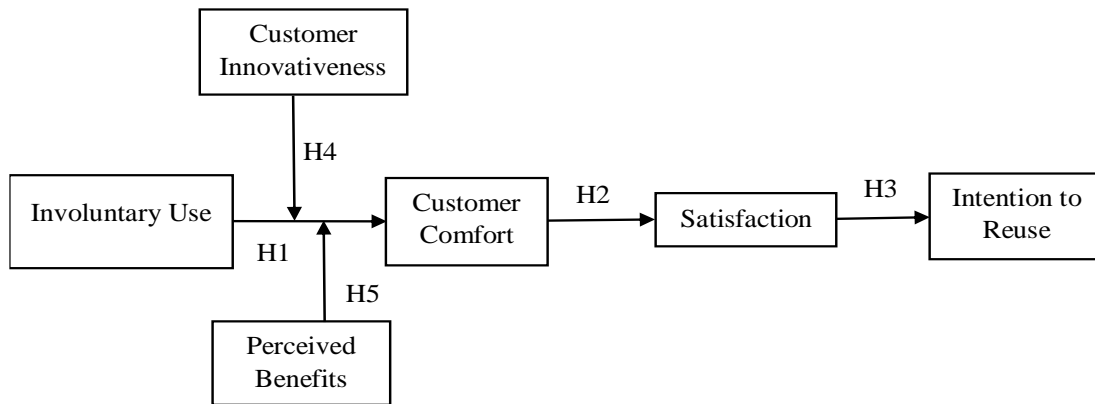
#### 2.1.6. Perceived benefit

Theories in social psychology, such as the Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB), and the Technology Acceptance Model (TAM) have been validated as a powerful and parsimonious framework (Ajzen, 1985). According to the TAM, perceived benefits are the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). Lin (2015) proved that perceived benefits could influence a consumer's intention to use a product or service in the field of information technology and specifically, in mobile services. In addition, perceived benefits have been found to have positive effects on the adoption of and attitudes toward new technologies. On the other hand, customers' perception of risk with SSTs is likely to reach their willingness to adopt SSTs and their behavioral intention (Johnson et al., 2008).

Therefore, this paper hypothesized:

*H5: Customer's perceived benefits of SSTs can moderate the effect of involuntary use on customer's comfort*

**2.2. Research model**



**Figure 1.** Conceptual model

**3. Methodology**

**3.1. Research design**

In order to verify the hypothesis proposed in this study, the questionnaire with 29 items measuring proposed constructs in five dimensions, including involuntary use, customer comfort with using SSTs, customer innovativeness, customer satisfaction, and intention to reuse was designed to test the hypotheses. Seven-point Likert scales (from “1 = Strongly Disagree” to “7 = Strongly Agree”) was applied to measure all constructs, except the measurement of comfort, with apply semantic-differential scales from 1 to 7.

**Table 2**

Research’s testing measurement scales

Code	Constructs and Indicators	References
Involuntary use		
IN1	Only self-service facilities are available when I require a service	Reinders et al. (2008); Liu (2012)
IN2	My options for the manner of service delivery are limited	
IN3	I am forced to use self-service technologies by the service provider	
Customer comfort		
CC1	Uncomfortable - comfortable	Jacobson, Gruzd, and Hernández-García (2020); Spake et al. (2003)
CC2	Very uneasy - very much at ease	
CC3	Very tense - very relaxed	
CC4	Convenient - inconvenient	
CC5	Worried - worry free	
CC6	Distressed - calm	
CC7	Turbulent - serene	
CC8	Troublesome - peace of mind	
CC9	Pleasant - unpleasant	
CC10	Insecure - secure	

Code	Constructs and Indicators	References
Satisfaction		
SA1	Overall, I am happy with the self-service tools that the company provides	Wang (2012)
SA2	The company's self-service technologies go above and beyond what I expected	
SA3	The company's self-service technology is very similar to my proposal	
SA4	Satisfaction with self- service technologies (SSTs)	
SA5	Satisfaction with the service	
Intention to reuse		
IR1	I would reuse SSTs in the future	Mellarkod, Appan, Jones, and Sherif (2007); Lin and Hsieh (2011)
IR2	I would reuse SSTs if I could call someone for help if I got stuck	
IR3	I would reuse SSTs if someone helps me get started	
IR4	I would encourage friends and relatives to make a using the self-service technology	
Perceived benefits		
PB1	Using self-service technologies (SSTs) saves me time	Goldsmith and Hofacker (1991); Roehrich (2004)
PB2	I can get what I want	
PB3	I can do tasks more rapidly because to SSTs	
PB4	Using SSTs makes using a service or product easier	
Customer innovativeness		
CI1	I like to try new technology, product, and service	Davis (1989); Heaney and Goldsmith (1999)
CI2	I frequently look for information about new goods and technology	
CI3	I will look for some channels to get access to new technology information	

Source: The researcher's data analysis

### **3.2. Sample and data collection**

The quantitative method is mainly used in this research. A paper-based survey and internet-based survey will be applied to collect data for this research. Sampling is based on the number of items (29 items) given by the study and the convenience of the sample collection process. Time for collection of data will start from October to November. During the survey period, a total of 500 samples were generated with 380 respondents, there were 345 valid responses. The research subject is current customers who had experience in involuntary use SSTs in Korea. Convenience sampling is used to collect data.

Scenario: I planned to travel by plane. However, when I arrived at the airport to check in, only one check-in counter for the emergency status is available. Just SSTs (kiosk) is available. So, I had to use kiosks to complete the check-in procedures.

### **3.3. Data analysis**

The frequency analysis and reliability test and exploratory will be conducted by SPSS 22.0 for analyzing the demographics and behavioral characteristics of respondents. Structural equation modeling analysis and confirmatory factor analysis will be conducted by AMOS 22.0. To test the

moderator effect of customer innovativeness and perceived benefits, a multiple group analysis median split will be used. This paper run MGA multiple group analysis Median split high-low and compares the path coefficient to see if there is a significant difference. Consider the variations in the SEM model’s impacts between various qualitative variables.

**4. Result and discussion**

**4.1. Result**

*4.1.1. Demographics of respondents*

**Table 3**

Demographics of respondents

A summary of characteristics for demographic variables is presented in Table 3

Characteristics		Frequency (n = 345)	Percent (%)
Gender	Male	127	36.8
	Female	218	63.2
Age	18 - 30	232	67.2
	30 - 40	80	23.2
	Above 40	33	9.6
Education	High school and below	44	12.8
	Associate degree	47	13.6
	Bachelor’s degree	205	59.4
	Master degree and above	49	14.2
Occupation	Student	60	17.4
	Employee of company/ private organization	197	57.1
	Self-employment	19	5.5
	Housewife	27	7.8
	Civil servant	15	4.3
	Other	27	7.9

Source: Data analysis result of the research

**Table 4**

Descriptive statistics of question items

Variables (items)		Mean		Std. Deviation
Involuntary use	IN1	3.39	3.36	1.42
	IN2		3.43	1.30
	IN3		3.38	1.41
Customer comfort	CC1	4.51	4.79	1.51

Variables (items)		Mean	Std. Deviation
	CC2	4.42	4.64
	CC3		4.24
	CC4		4.60
	CC5		4.35
	CC6		4.41
	CC7		4.54
	CC8		4.29
	CC9		4.70
	CC10		4.44
	Satisfaction		SA1
SA2		4.11	
SA3		4.31	
SA4		4.55	
SA5		4.48	
Intention to reuse	IR1	5.05	5.06
	IR2		5.10
	IR3		5.25
	IR4		4.78
Perceived benefits	PB1	4.86	5.02
	PB2		4.83
	PB3		4.91
	PB4		4.65
Customer innovativeness	CI1	4.56	4.73
	CI2		4.44
	CI3		4.49

Source: Data analysis result of the research

In general, all construct's mean scores are above 3.39 and less than 6.

#### 4.1.3. Reliability analysis

To estimate the internal consistency reliability, Cronbach's Alpha values were conducted for each of the constructs. Hair, Anderson, Babin, and Black (2010) indicated that Cronbach's Alpha and composite reliability of the examination are all in the good range from 0.7 to 0.95. Reliability is measured is consistent and highly accurate. The result of this study determined that all the measurement items of the constituent concepts were more than 0.8, so it was judged to have high reliability and internal consistency. Validity refers to the degree to which a measuring tool accurately measures an element to be measured.

**Table 5**

Reliability test

Variable	Cronbach's $\alpha$	No. of items
Involuntary Use	0.831	3
Customer Comfort	0.940	10
Satisfaction	0.915	5
Intention to Reuse	0.871	4
Customer Innovativeness	0.900	3
Perceived Benefits	0.880	4
Total measurement		29

Source: Data analysis result of the research

*4.1.4. Validity analysis*

The KMO was 0.908, and as a result of Bartlett sphericity verification, the Approximated chi-square was 4037.797,  $df = 136$ , and the  $p < 0.001$ . Therefore, the collected data and measurement items were found to be suitable for Exploratory Factor Analysis (EFA). By using variance-maximized rotation factor analysis, we tested validity. The results are shown in Table 6 and Table 7.

**Table 6**

Common factor variance

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	<b>7.547</b>	44.394	44.394	7.237	42.568	42.568	6.101
2	<b>2.276</b>	13.386	57.780	1.937	11.396	53.964	5.961
3	<b>1.828</b>	10.755	68.534	1.519	8.938	62.902	2.378
4	<b>1.046</b>	6.151	74.685	0.751	4.421	<b>67.323</b>	3.250
5	.653	3.840	78.525				
6	.491	2.887	81.412				
7	.456	2.684	84.096				
8	.396	2.332	86.427				
9	.365	2.145	88.573				
10	.310	1.825	90.398				
11	.303	1.785	92.183				
12	.292	1.720	93.903				
13	.275	1.619	95.522				

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
14	.234	1.374	96.896				
15	.211	1.239	98.135				
16	.181	1.064	99.199				
17	.136	.801	100.000				

Source: Data analysis result of the research

**Table 7**

Factor analysis

	Factor			
	1	2	3	4
CC7	0.939			
CC6	0.856			
CC9	0.834			
CC10	0.820			
CC5	0.732			
CC8	0.664			
CC3	0.595			
SA4		0.884		
SA5		0.838		
SA3		0.837		
SA2		0.704		
SA1		0.678		
IN2			0.862	
IN3			0.821	
IN1			0.694	
IR2				0.884
IR3				0.727

Source: Data analysis result of the research

According to the factor analysis result in Table 6, we selected a total of 04 principal components in which the eigenvalue is greater than 1. Table 7 shows that all four dimensions are consistent with the setting of the survey item. The context of the survey item of each dimension happens to be in the same dimension, and there is no cross-dimensional situation, so the validity is acceptable for the subsequent analysis.

**Table 8**

Composite reliability, AVE and correlation of constructs values

	<b>CR</b>	<b>AVE</b>	<b>MSV</b>	<b>IN</b>	<b>CC</b>	<b>SA</b>	<b>IR</b>
IN	0.837	0.632	0.076	<b>0.795</b>			
CC	0.925	0.639	0.416	-0.167	<b>0.799</b>		
SA	0.916	0.687	0.416	0.276	0.645	<b>0.829</b>	
IR	0.855	0.749	0.381	0.134	0.387	0.617	<b>0.865</b>

Note: Numbers on the diagonal (in bold) show the square root of the AVE; numbers below the diagonal show construct correlation. Table 8 also shows the Average Variance Extracted (AVE), which is used to measure the convergent validity. All AVEs are all larger than the threshold of 0.5 and acceptable

Source: Data analysis result of the research

*4.1.5. Correlation analysis*

**Table 9**

Correlation analysis

<b>Factor</b>	<b>IN</b>	<b>CC</b>	<b>SA</b>	<b>IR</b>
IN	1.000	-0.609	0.169	0.351
CC	-0.609	1.000	0.279	0.545
SA	0.169	0.279	1.000	0.169
IR	0.351	0.545	0.169	1.000

Source: Data analysis result of the research

From the analysis of Table 9, we can see that there are significant positive correlations between the two variables customer comfort and intention to reuse. Therefore, it satisfies the prerequisite for conducting structural equation analysis. In the next step, we performed structural equation analysis. In addition, the Significant correlation between the two variables involuntary use and customer comfort is negative.

*4.1.6. Hypotheses testing*

*4.1.6.1. Structural equation model analysis*

**Table 10**

Model fit index

<b>Index</b>	<b>CMIN/DF</b>	<b>GFI</b>	<b>CFI</b>	<b>TLI</b>	<b>RMSEA</b>
Actual value	2.671	0.901	0.951	0.943	0.070
Criteria	1~3	> 0.90	> 0.90	> 0.90	< 0.080

Source: Data analysis result of the research

In this study, the theoretical model was validated using a structural equation model. According to the analysis in Table 10, all model-fit indices were higher than the standard acceptability thresholds recommended by other studies, showing that the measurement model suited the data. (CMIN/df = 2.671,  $p < 0.001$ ; GFI = 0.901; CFI = 0.951; TLI = 0.943; RMSEA = 0.070). It was thought that an RMSEA of below 0.08 shows a good fit (Hooper, Coughlan, & Mullen, 2008).

**Table 11**

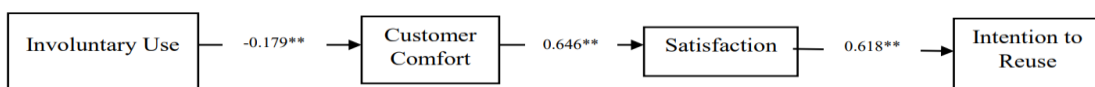
Structural equation modeling result

			<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>	<b>Standardized Regression Weights</b>
<b>CC</b>	<---	<b>IN</b>	<b>-0.181</b>	<b>0.061</b>	<b>2.960</b>	<b>0.003</b>	<b>-0.179</b>
<b>SA</b>	<---	<b>CC</b>	<b>0.637</b>	<b>0.053</b>	<b>11.914</b>	<b>***</b>	<b>0.646</b>
<b>IR</b>	<---	<b>SA</b>	<b>0.668</b>	<b>0.053</b>	<b>12.636</b>	<b>***</b>	<b>0.618</b>
CC7	<---	CC	1.000				0.796
CC6	<---	CC	1.051	0.062	17.017	***	0.814
CC9	<---	CC	0.979	0.058	16.997	***	0.813
CC10	<---	CC	1.115	0.058	19.178	***	0.888
CC5	<---	CC	1.164	0.070	16.645	***	0.801
CC8	<---	CC	1.087	0.069	15.749	***	0.768
CC3	<---	CC	0.972	0.069	14.045	***	0.702
SA4	<---	SA	1.000				0.925
SA5	<---	SA	0.994	0.036	27.508	***	0.906
SA3	<---	SA	0.860	0.043	20.091	***	0.789
SA2	<---	SA	0.730	0.046	15.782	***	0.689
SA1	<---	SA	0.896	0.042	21.331	***	0.179
IN2	<---	IN	1.000				0.646
IN3	<---	IN	1.051	0.074	14.180	***	0.618
IN1	<---	IN	0.898	0.070	12.872	***	0.796
IR2	<---	IR	1.000				0.814
IR3	<---	IR	0.769	0.063	12.184	***	0.813

Note : \*, \*\* and \*\*\* Respectively significant at 10%, 5% and 1% levels

Source: Data analysis result of the research

From the analysis in Table11, it shows that involuntary use has a significant negative effect on customer comfort. It indicates that, as customer comfort increase, the interviewee has a higher satisfaction and intention to reuse of SSTs. Therefore, H1, H2, H3 were supported. Figure 12 summarize the final result of the structural model.



**Figure 2.** Final result model

Note : \*, \*\* and \*\*\* Respectively significant at 10%, 5% and 1% levels

4.1.6.2. Moderation effect analysis

Since this study focuses on comparing paths from involuntary use to customer comfort across the group, the equality of factor loadings between the high and low customer innovativeness (H4) and between the high and low perceived benefit group (H5) was measured. In order to test the moderating effect of customer innovativeness and perceived benefit. A median- split was used to divide the participant into high and low customer innovativeness groups (Med = 3.50) and high and low perceived benefit (Med = 4.75). Cronbach’s Alpha for customer innovativeness and perceived benefit were .90 and .88, respectively. There was a significant difference in the customer innovativeness mean score between the high customer innovativeness group (n = 177) (M = 4.13, SD = 0.48) and the low customer innovativeness group (n = 168) (M = 2.66, SD = 0.56) (t = -26.03, df = 332, p < 0.001). There was also a significant difference in the perceived benefit mean scores between the high perceived benefit group (n =197) (M = 5.59, SD = 0.63) and the low perceived benefit group (n = 148) (M = 3.87, SD = 0.64) (t = -24.92, df = 315, p < 0.001).

<u>LOW CUSTOMER INNOVATIVENESS</u>						<u>HIGH CUSTOMER INNOVATIVENESS</u>					
		S.E.	C.R.	P	Standardized Regression Weights			S.E.	C.R.	P	Standardized Regression Weights
CC	<--- IN	0.089	1.702	0.039	-0.237	CC	<--- IN	0.085	1.498	0.034	0.129
SA	<--- CC	0.080	7.935	***	0.609	SA	<--- CC	0.068	7.314	***	0.580
IR	<--- SA	0.075	8.656	***	0.610	IR	<--- SA	0.080	6.719	***	0.502

**Figure 3.** Result of H4: high and low customer innovativeness (n =177 vs n =168)

The overall fit of the measurement model was deemed satisfactory: p < 0.001, TLI = 0.90, CFI = 0.915, RMSEA = 0.056, CMIN/DF= 1.916. H4 examines the moderating effect of customer innovativeness on the relationship between involuntary use and customer comfort (see Figure 3). The individual path coefficients from involuntary use to customer comfort were compared across the high and low customer innovativeness. As can be seen in Figure 3, the path from involuntary use to customer comfort was significantly stronger for the low customer innovativeness group than for the high customer innovativeness group. Interestingly, the moderator customer innovativeness significantly influences the direction of the effect of involuntary use on customer comfort, particularly, the positive effect of customer innovativeness in the high customer innovativeness group was reversed in the low customer innovativeness group. Thus, H4 was supported.

<u>LOW PERCEIVED BENEFIT</u>						<u>HIGH PERCEIVED BENEFIT</u>					
		S.E.	C.R.	P	Standardized Regression Weights			S.E.	C.R.	P	Standardized Regression Weights
CC	<--- IN	0.075	1.666	0.046	-0.193	CC	<--- IN	0.096	0.651	0.015	0.053
SA	<--- CC	0.094	6.521	***	0.583	SA	<--- CC	0.055	7.115	***	0.531
IR	<--- SA	0.101	5.486	***	0.464	IR	<--- SA	0.077	6.762	***	0.492

**Figure 4.** Result of H5: high and low perceived benefit (n = 197 vs n =148)

The overall fit of the measurement model was deemed satisfactory: p < 0.001, TLI = 0.920, CFI = 0.928, RMSEA = 0.055, CMIN/DF = 2.025. H5 addresses the moderating effect of perceived benefit on the relationship between involuntary use and customer comfort. As Figure 4 shows, the effect of perceived benefit on customer comfort was significantly stronger for the high perceived benefit group than for the low perceived benefit group. the moderator’s perceived benefit significantly influences the direction of the effect of involuntary use on customer comfort, particularly, the positive effect of perceived benefit in the high perceived benefit group was reversed in the low perceived benefit group. Thus, H5 was also partially supported.

## **4.2. Discussion**

The main purpose of this study was to investigate hypothesized model of relationships between involuntary use and customer comfort on SSTs. This study concentrated on how consumer intention to reuse the products in which the firm just only provides Self-Service Technology (SSTs) based on consumer comfort and consumer innovativeness tested by five hypotheses. These hypotheses were tested to understand the association between involuntary use, customer comfort, satisfaction, intention to reuse, and two important moderators (perceived benefit and customer innovativeness). Importantly, it contributed to knowing how involuntary use affects on consumer comfort and how two moderators influent involuntary use and consumer comfort. A causal model was therefore developed and presented for these expected hypotheses.

The final sample size is 345. The analyzes included two separated stages. In the first stage, the measurement model was assessed separately from the structural model using confirmatory factor analysis. This procedure was applied to all of the constructs to see if the indicators adequately measured the intended constructs. In the second stage, Structural Equation Modeling (SEM) was used to test the hypotheses proposed in the research model, and a median split was used to divide customer innovativeness and perceived benefit to make the high and low groups. The estimation of the structural model yielded an acceptable fit and five hypotheses were supported. Findings based on the SEM analysis are discussed below.

## **5. Implication**

### **5.1. Theoretical implication**

Firstly, Table 11 shows that involuntary use is negatively associated with customer comfort. This finding supports the previous research in that involuntary use serves to reduce their freedom to choose a service-delivery mode, thus it is likely to reduce their perceptions of decisional control and increase technology anxiety (Keinan & Zeidner, 1987). Secondly, the effect of customer comfort on customers' satisfaction with SSTs is positive and significant, which indicates that customer satisfaction significantly increases when customer comfort increases (see Table 11). This finding is congruent with previous research, which shows a positive link between customer comfort and customer satisfaction (Dunn, 1989; Simmons, 2001; Simmons & Slater, 1987). Thirdly, customer satisfaction has a positive effect on the intention to reuse (see Table 11). Congruently, previous studies have investigated the relationship between consumer satisfaction with SSTs and behavioral intentions (Curran et al., 2003; Lin & Hsieh, 2007; Wu, Vassileva, & Zhao, 2017). Finally, customer's perceived benefits and customer innovativeness factors can moderate the effect of involuntary use on customer's comfort. The result of the testing hypothesis shows that high perceived benefits and high customer innovativeness can reverse the negative relationship between involuntary use and customer comfort. These findings provide both academic contributions and managerial implications.

### **5.2. Managerial implication**

This study has valuable contributions not only to the literature but also to marketing service applications. The findings suggest a number of implications for managers in planning marketing strategies, especially positioning strategies in providing self-service technology companies. The most significant result is that involuntary usage and consumer comfort, happiness, and intention to reuse are related through an intermediary psychological process. Therefore, it can be beneficial for managers to consider strategically boosting SST marketing. When customers select the delivery method that best fits their needs, they will have lower uncomfortable and higher satisfaction, which in turn positively influences satisfaction and intention to reuse. Service providers can stimulate the greater use of SSTs by making the self-service encounter relatively

attractive by providing an incentive or some other motivation to use the SST options. For instance, service providers might charge an additional fee for traditional full-service or provide SSTs with an employee as a fallback option (Curran et al., 2003; Meuter et al., 2000).

Involuntary use to decrease customer comfort with SSTs. In situations where forcing the use of SSTs is the best option for a provider, there are several approaches to minimize the negative impact of involuntary use. Firstly, in order to reduce the uncomfortableness of customers, service providers should invest in enhancing customers' knowledge about SSTs. Customer education can come in the form of printed step-by-step instructions, self-paced tutorials, helpful frequently-asked-question self-service facilities, or even customer service representatives used to train customers in their roles (Eisingerich & Bell, 2008). Additionally, the perceived benefit quality will increase trust while decreasing worry. SST distribution alone is insufficient. Service providers should make an effort to improve their services. Physical, interaction, and corporate quality are all components of service quality (Lehtinen & Lehtinen, 1991). As a result, a service provider should consider both the company's reputation as well as the physical and interaction components of SSTs. Finally, SSTs can improve consumer comfort because they were created with their needs in mind. Service providers should prioritize the needs of the client over those of the business when constructing SSTs.

### **5.3. Limitations and suggestions for future research**

Firstly, looking at the demographic analysis of the sample, the proportion of respondents in their female is high, which can affect the research results. We will need to configure it. Therefore, the future study could collect a wider range of samples and see whether these variables have an effect on the result. Secondly, this study focused on how involuntary use influences customer's comfort, satisfaction, and intention to reuse with SSTs and included involuntary use as the only precedent of customer comfort. Other SST researchers, however, suggests that such customer education, service price, service quality, and staff have an effect on customer comfort and satisfaction (Reinders et al., 2008). Finally, research on self-service technology has been carried out in South Korea and at airports. The findings' generalizability may so be constrained. The extent to which our findings apply to other self-service environments and, most likely, to other nations will need to be determined by further study.

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