

B2C E-commerce Site Success Factors: A Comparison between Indonesia, Japan, and South Korea

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ABSTRACT

E-commerce is an integral part of today's modern society. People are increasingly using this media to support their daily needs. The resulting increase of demands in the online environment leads to an increase in numbers of online business vendors, with business-to-consumer (B2C) e-commerce business as one of them. This study examines the factors that determine a successful B2C e-commerce site in Indonesia, Japan, and South Korea. The research applies an updated DeLone and McLean Information System Success model developed by Chen, Rungtungsamrit, Rajkumar, and Yen in 2013. This research aims to find the influence of quality factors (information, system, and service quality) toward user satisfaction and attitude toward the site. This research also applies three moderators: national identity, uncertainty avoidance, and attitude toward online shopping. The respondents consist of 278 Indonesian, 129 Japanese, and 121 South Korean respondents. The result of this study shows that all B2C e-commerce quality factors influence both user satisfaction and attitude toward the site on all research groups with different levels. Furthermore, the results also indicate the influence of cultural factors and attitude toward online shopping on the relationship between the three quality factors and the dependent variables.

Keywords: attitude toward the site, DeLone and McLean, IS success model, national identity, user satisfaction.

JEL Classification: L8, M3

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INTRODUCTION

Online shopping is an integral part of today's modern society. The rapid development of technology allows online shopping to become faster and easier. One of the marketer's efforts to respond public interest in online shopping is by organizing cyber sales. The most renowned cyber sale in Indonesia is Harbolnas (Hari Belanja Online Nasional). The cyber sale started in 2012 with only seven participants. Today, it has around 220 e-commerce websites as participants. The increase of participants reflects the rapid emergence of new online businesses, which also leads to a more competitive market.

Adobe (2015) revealed that the average spending in cyber sales were higher in advanced economic countries, compared with developing countries. Indonesia is one of the emerging countries in Asia with low Internet and e-commerce penetration rates. However, the Singapore Post (2014) revealed that Indonesia has one of the fastest growing online markets in Asia. It also added that e-commerce companies in Indonesia have high intensity in terms of competitions. Nielsen (2015) stated that large companies indeed dominate the e-commerce market, but small e-commerce businesses have greater growth rates. The growth of smaller online retailers can be seen in the rise of local online shopping sites. The phenomenon has certainly become an attraction for entrepreneurs to jazz up the online environment. E-commerce consumers consist mainly of millennials (Generation Y) and Generation X, but in the future there would be even more consumers from the upcoming Generation Z (Nielsen, 2014).

In facing the e-commerce competition, marketers need to have a clear understanding of consumer demands. The comprehension is essential to ensure their online business sustainability. The success of an e-commerce business occurs when a customer makes a purchase and then forms a relationship with the business (Coker, 2013). Much of the discussion on e-commerce success has been based on earlier research on IS success by DeLone and Mclean (Brown & Jayakody, 2008). This study uses the DeLone and McLean Information System (D&M IS) success mode, as modified by Chen, Rungruengsamrit, Rajkumar, and Yen in 2013. The research focuses on B2C e-commerce, a type of e-commerce most often encountered by e-commerce consumers (Laudon & Traver, 2014). The research objects are B2C e-commerce consumers from Indonesia, Japan, and South Korea. Specifically, the objectives of this study are

1. To identify whether the IS qualities (information, system, and service quality) influence user satisfaction and attitude toward the site;
2. To identify whether national identity, uncertainty avoidance, and attitude toward online shopping moderates the relationship between IS qualities and user satisfaction or attitude toward the site;
3. To compare the findings from the three respondent groups (Indonesia, Japan, and South Korea) and help to determine managerial implications.

REVIEW OF LITERATURE

B2C E-commerce

E-commerce is defined as the use of the Internet, Web, and apps to transact business - more formally, digitally enabled commercial transactions between and among organizations and individuals (Laudon & Traver, 2014). Commercialization of the Internet began after 1995, but it could rival existing traditional media. E-commerce has been a popular transaction media due to its unique features, i.e., ubiquity, global reach, universal standards, richness, interactivity, information density, personalization or customization, and social technology (Laudon & Traver, 2014). E-commerce consists of six different types by the nature of the market relationship; one of them is business-to-consumer (B2C) e-commerce. B2C e-commerce is defined as online businesses selling to individual consumers (Laudon & Traver, 2014).

Information System Success

The D&M IS success model has been heavily cited in information system researches. The latest model is shown in Figure 1. The model includes six interrelated components: information quality, system quality, service quality, intention to use (use), user satisfaction, and net benefits. The model assumes that the three information system qualities affect user satisfaction and intention of the customer to use the IS and that user satisfaction and use jointly provide the net benefits that users derive from the IS (Chen *et al.*, 2013).

A lot of criticism and development has been levied against the original D&M IS success model. The definitions and constructs of the model also depends on the context of the research. Petter *et al.* (2008) revealed around 180 publications using the D&M IS success model that were used on different IS contexts. In this study, the model will be adapted to the B2C e-commerce context.

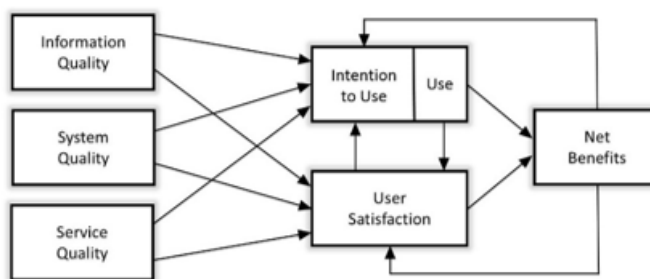


Figure 1 D&M IS Success Model

Attitude Toward the Site

Attitude is defined as an index of the degree to which a person likes or dislikes an object and is typically based on the consumer's summary evaluation of both positive and negative components about a stimulus (Seo *et al.*, 2007). The authors further added that attitude has been shown

to significantly influence behavioral intentions, consumer choices, and user satisfaction. A common version of attitude toward the site (AST) measures is shown in the Chen and Wells AST scale (Boostrom, *et al.*, 2013).

Research Model and Hypotheses

As previously mentioned, this study is a replication of a previous study conducted in 2013. In the previous study, the researchers used a modified D&M IS success model of respondent's views of e-commerce websites in Taiwan and Thailand. The research model is shown in Fig. 2. The research model was modified based on previous study findings. Wang (2008) asserted that the use of net benefits was considered inappropriate because it is too broad to be defined and also overlaps with the measures of user satisfaction. The statement was supported by Brown and Jayakody (2008), which asserted that net benefits are too difficult to measure. Based on the arguments, the research model does not include net benefits.

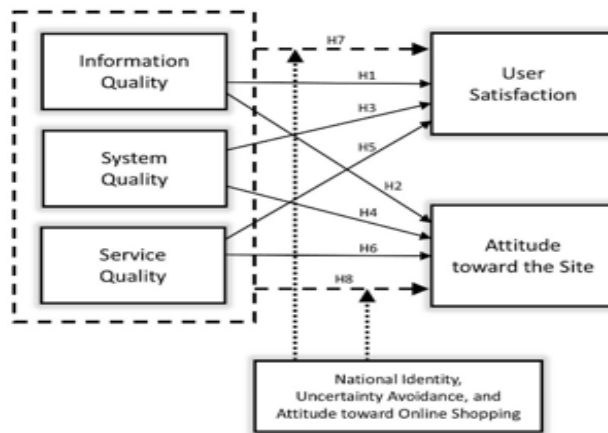


Figure 2 Research Model

Based on the renowned Technology Acceptance Model (TAM), Wixom and Todd (2005) proposed that the attitudes related to behaviors would be the predictors of intention to use. Wang (2008) added that measures of user satisfaction represent object-based attitudes. Attitudes about objects such as information systems and web sites are generally poor predictors of behaviors such as system usage or intent to purchase at a site (Chen *et al.*, 2013). The argument leads to the introduction of AST, thus replacing the previous intention to use.

Information Quality

Information quality (INFQ) captures the e-commerce content issue (DeLone & McLean, 2003). A website consists of many pages that feature content such as texts, graphics, photos, and videos. This content is the main reason a consumer visits a website (Laudon & Traver, 2014). In the B2C e-commerce context, content sought after by customers includes the product- or service-related information and price (Coker, 2013). Information contained inside website contents

could affect the consumer's perception in determining his/her satisfaction (Solomon, 2015). A B2C e-commerce company could provide information of a certain product by including pictures, videos, dimensions, and reviews. Jiang *et al.* (2015) stated that a consumer would act further (such as buying, using or sharing) if he/she acquires an interesting or useful content of a product.

In this research, INFQ is measured by the three dimensions that account for most of the variation in AST, which include the informativeness of a site (utilitarian factors), the entertainment it provides (hedonic factors), and its organization (aesthetic factors). Chen *et al.* (2013) contended that the three dimensions used to explain AST will essentially capture similar attributes and are dimensions of information quality. Petter *et al.* (2008) conducted an observation toward 16 studies based on the D&M IS success model, thus researching the influence of INFQ toward user satisfaction (UST). The authors revealed that 15 of them managed to find a positive and significant influence between the two variables. Other studies also revealed similar results.

Besides user satisfaction, information quality also could influence consumer's treatment toward the site, such as searching for further information (Solomon, 2015), and revisiting the site (Chen *et al.*, 2013). Chen and Wells (1999) revealed that INFQ dimensions have significant influence toward AST. The findings were supported by similar findings by Childers *et al.* (2001) and Kang and Kim (2006). Therefore, this study hypothesizes

H₁: User satisfaction is positively influenced by information quality.

H₂: Attitude toward the site is positively influenced by information quality.

System Quality

System quality (SYSQ) in the Internet environment measures the desired characteristics of an e-commerce system (DeLone & McLean, 2003). The research used the suggested dimensions stated by DeLone and McLean, which consist of usability and availability. Usability includes clarity in interactions, good navigation systems, efficiency, and ease of use. Availability refers to the information system availability itself and the ease of access (Murugesan, 2009). SYSQ acts as an integral component of an e-commerce business (Laudon & Traver, 2014). A good performance would improve consumer's perception of the quality of a product (Solomon, 2015). A failure on an e-commerce site system could result in the loss of customers. Customers have a lot of other options because this industry has a "high rivalry among existing competitors" and also a "high threat of new entrants".

Petter *et al.* (2008) discovered 21 studies that researched the influence of SYSQ toward UST and revealed that all of them yield a positive and significant influence. Other researches also discovered similar results (Devaraj *et al.*, 2002; Liu *et al.*, 2008). In the continuance, a good SYSQ could influence consumers to take further actions such as repurchasing and conducting positive word-of-mouth (Zeithaml, *et al.*, 2013). Some studies revealed the significant relation between SYSQ and AST, i.e., Childers *et al.* (2001), Wixom and Todd (2005), and Atcharyachanvanich and Sonehara (2008). Based on the arguments above, this study hypothesizes

H₃: User satisfaction is positively influenced by system quality.

H₄: Attitude toward the site is positively influenced by system quality.

Service Quality

Service quality (SERVQ) is defined as the overall support delivered by the service provider (DeLone & McLean, 2003). One of the most common methods in measuring SERVQ is by using the SERVQUAL, as developed by Parasuraman, Valarie Zeithaml, and Leonard Berry (Zeithaml, *et al.*, 2013). The authors also added that SERVQ acts as a dominant element in shaping a consumer's perception about a product or service. SERVQUAL has five dimension, but Devaraj *et al.* (2002) revealed that only assurance (trust) and empathy possess significant influence toward user satisfaction. The findings were similar to those of Chen *et al.* (2013). In the continuance, Parasuraman *et al.* (2005) proposed E-S-QUAL to measure services given via online media. E-S-QUAL consists of efficiency, fulfillment, system availability, and privacy. These dimensions reveal that efficiency and system availability are related to the site's system (SYSQ), while the dimensions of fulfillment and privacy refer to the commitment of the e-commerce company in giving the best service to their consumers (SERVQ).

Petter *et al.* (2008) discovered studies evidencing the influence of SERVQ toward UST. Parasuraman *et al.* (2005) stated that service quality influenced continuity acts, such as positive word-of-mouth, and repurchase. Sivadas and Baker-Prewitt (2000) and Atchariyachanvanich and Sonehara (2008) revealed that SERVQ has positive influence toward AST. Therefore, this study also hypothesizes

H₅: User satisfaction is positively influenced by service quality.

H₆: Attitude toward the site is positively influenced by service quality.

Moderator Variables

This research uses three moderator variables: national identity (NATID), uncertainty avoidance (UAV), and attitude toward online shopping (ASHOP). The usage of the moderator variables is based on the argument that people with different cultural backgrounds do not equally define and perceive IS success (Chen *et al.*, 2013). National identity (NATID) is a measurement system of the difference between countries and cultures, as expressed by Keillor and Hult (Phau & Chan, 2003). NATID suggests that, in some countries, people believe there is one dominant culture distinct from other cultures and that consumers should be loyal to their own culture (Chen *et al.*, 2013). NATID consists of four dimensions: national heritage, cultural homogeneity, belief structure, and consumer ethnocentrism. Those dimensions represent the four civilization elements, as stated by Huntington: history, customs, beliefs, and social institutions (Keillor *et al.*, 1996). The perspective generated by the NATID scale could facilitate decision-makers to focus on strategies by identifying crucial points of potential cultural conflicts. Similarities and differences in the dimensions NATID may indicate the level of personalization or standards required for a product to be marketed in different countries (Chen *et al.*, 2013).

Uncertainty avoidance (UAV) is one of the national cultures dimension stated by Geert Hofstede in 1980 (Hofstede, 2011). UAV reflects how much of a culture feels threatened when faced with uncertainty (Chen, *et al.*, 2013). Consumers with high UAVs tend to have higher expectations of service quality compared with consumers with low UAVs (Donthu & Yoo, 1998). UAV is measured using the Values Survey Module (VSM).

Attitude toward online shopping (ASHOP) is defined as individual characteristics that

may play a role in developing perceptions of the quality of a website (Chen, *et al.*, 2013). A consumer should have positive ASHOP when deciding to try or make an online purchase. Kim *et al.* (2003) mentioned that ASHOP has a significant role in shaping consumer behavior, such as attitude toward a site. Chen *et al.* (2013) expects that ASHOP could moderate the relationships between IS qualities and UST or AST. Based on all the arguments above, this study thus hypothesizes

H₇: National identity, uncertainty avoidance, and attitude toward online shopping have a significant impact on the relationship of the information, system, and service qualities and user satisfaction.

H₈: National identity, uncertainty avoidance, and attitude toward online shopping have a significant impact on the relationship of the information, system, and service qualities and attitude toward the site.

METHODOLOGY

Operational Variables

All of the measures in this research were used in the previous study from Chen, Rungruengsamrit, Rajkumar, and Yen. INFQ measures were extracted from Chen and Wells (1999). SYSQ measures were taken from Barnes and Vidgen (2002), WebQual 4.0, and Parasuraman *et al.* (2005) E-S-Qual. SERVQ measures also were taken from WebQual 4.0. The UST measures were extracted from Spreng *et al.* (1996). AST measures were taken from Chen and Wells (1999). NATID measures were taken from Keillor *et al.* (1996). UAV was measured using the VSM94 scales, while ASHOP measures were taken from Kim *et al.* (2003).

Unit of Analysis

The units of analysis are B2C e-commerce consumers in Indonesia, Japan, and South Korea. The units were chosen based on their e-commerce environment, cultural difference, and feasibility. The units of analysis also were considered because of their geographical location in Asia, thus supplementing the previous study, which investigated similar e-commerce users in Taiwan and Thailand. The Indonesian e-commerce market is considered one of the most potential in Asia, while Japan and South Korea are considered as matured markets with their high Internet and e-commerce penetration rates (see Table 1).

Table 1 E-commerce Environment Comparison (2016)

	Indonesia	Japan	South Korea
Population*	260.6	126.3	50.5
Internet Penetration	39.98%	91.1%	89.9%
Number of Internet Users*	104.2	115.1	44.8
E-commerce Penetration	13.4%	80.4%	69.7%
Active E-commerce Users*	24.7	92.5	30.2
E-commerce Users/Population	9.5%	73.2%	59.8%
Revenue**	5,648	74,398	19,122

* = in million people, ** = in million US dollars. (Statita, 2016)

Research Design

This study is a descriptive research, conducted using cross-sectional techniques. The data used in the study are from both primary and secondary data. The primary data were taken from questionnaires. The questionnaires were translated into the Bahasa Indonesia, Japanese, and Korean languages. All of the indicators were measured using a five-point Likert scale. Secondary data were obtained from previous studies and literatures.

The data-collection methods used are judgmental and snowballing sampling, both nonprobability sampling techniques. The collection was done using online questionnaires distributed using messaging applications and social media. The respondents were required to have a B2C e-commerce shopping experience. Complete answers that did not refer to B2C e-commerce were discarded. The number of valid responses were 278 for Indonesian respondents, 129 for Japanese, and 121 for South Koreans. Pre-test were conducted, and wording tests were used on every language. The pre-test results are displayed in Table 2.

Table 2 Pretest results

Variable	Indicator	KMO	Sig.	Comp. Matrix	Cronbach's α	Cronbach's α if deleted	
Information Quality (INFQ)	INF1	0.812	0.000	0.831	0.917	0.905	
	INF2			0.831		0.905	
	INF3			0.845		0.902	
	INF4			0.900		0.890	
	INF5			0.833		0.904	
	INF6			0.813		0.907	
	ENT1	0.846	0.000	0.857	0.923	0.908	
	ENT2			0.886		0.902	
	ENT3			0.896		0.899	
	ENT4			0.847		0.909	
	ENT5			0.860		0.907	
	ENT6			0.748		0.925	
	System Quality (SYSQ)	ORG1	0.716	0.000	0.907	0.899	0.856
		ORG2			0.878		0.871
		ORG3			0.937		0.841
		ORG4			0.801		0.904
USB1		0.680	0.000	0.909	0.716	0.603	
USB2				0.865		0.534	
USB3				0.930		0.569	
USB4				0.322		0.889	
AVL1	0.695	0.000	0.701	0.851	0.876		
AVL2			0.942		0.728		
AVL3			0.930		0.743		
AVL4			0.738		0.860		

Table 2 (Cont.)

Service Quality (SERVQ)	TST1			0.837			0.543
	TST2	0.543	0.000	0.901	0.673		0.339
	TST3			0.592			0.790
	EMP1			0.475			0.775
	EMP2	0.547	0.001	0.869	0.630		0.343
	EMP3			0.874			0.320
User Satisfaction (UST)	UST1			0.867			0.885
	UST2	0.849	0.000	0.880	0.905		0.880
	UST3			0.898			0.873
	UST4			0.909			0.871
Attitude toward the Site (AST)	AST1			0.674			0.818
	AST2			0.640			0.815
	AST3	0.723	0.000	0.797	0.824		0.790
	AST4			0.801			0.787
	AST5			0.710			0.799
	AST6			0.830			0.762

*KMO = Kaiser-Meyer-Olkin; Sig. = Significance; Comp. Matrix = Component matrix (factor loading)

**INF = informativeness; ENT = entertainment; ORG = organization; USB = usability, AVL = availability; TST = trust; EMP = empathy

The results on moderating variables differ among each population. The findings on NATID are shown in Table 3. Indonesia ranks highest between the respondent groups in terms of NATID. As expected, Indonesia has the lowest UAV, compared with both Japan and South Korea, with the UAV score of 68.13, compared with Japan's 86.20 and South Korea's 96.98. ASHOP were similar between the three respondent groups with 3.69 (Indonesia), 3.54 (Japan), and 3.68 (South Korea).

Table 3 Respondents by NATID

Indicator	Indonesia	Japan	South Korea
National Heritage	5.12	4.86	5.39
Cultural Homogeneity	4.84	4.99	5.10
Belief Systems	4.69	3.07	2.85
Consumer Ethnocentrism	4.55	3.90	3.35
Total Score	19.20	16.82	16.69

Data Analysis Method

Data processing was conducted using the partial least squares structural equation model (PLS-SEM) method. The utilization of PLS-SEM was based on Hair, Hult, Ringle, and Sarstedt's rule of thumb. First, this research aims to predict key target constructs or identify key driver constructs. Second, the model consists of formative constructs (with INFQ formed by informativeness, entertainment, and organization; SYSQ formed by usability and availability;

and SERVQ formed by assurance/trust and empathy). Third, the structural model is complex. Fourth, the sample size is small (for Japan and South Korean data) and is non-normally distributed. Fifth, the model has a recursive relationship. Moderating variables were analyzed using a multiple regression technique using SPSS.

RESULTS

Based on the systematic procedure for applying PLS-SEM by Hair *et al.* (2014), the first, second, and third stages have already been specified. The fourth stage (PLS path model estimation) is shown in Fig. 3.

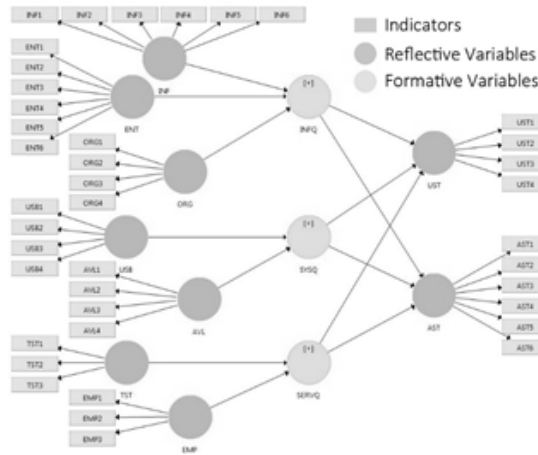


Figure 3 PLS Path Model Estimation

PLS analysis was first conducted on the reflective model and then on the formative model. The Indonesian reflective model is shown in Fig. 4. The results for the Indonesian respondent reflective model reliability and validity are shown in Table 4. The indicator USB4, AST1, AST5, and AST6 has indicators outer loading below 0.70 but are retained due the sufficient scores of CR and AVE.

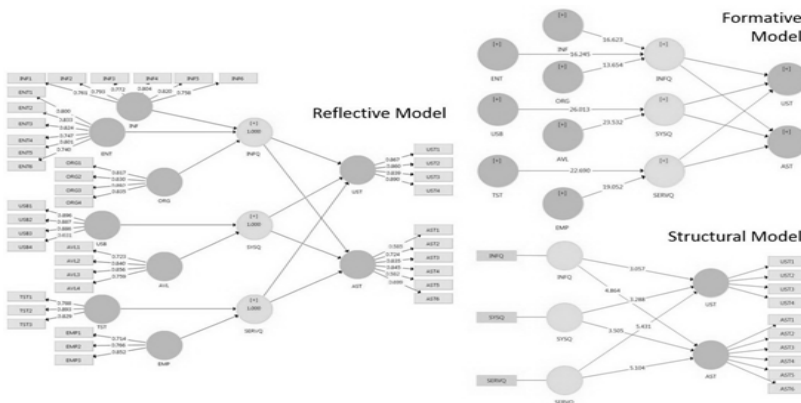


Figure 4 Indonesian PLS Models

The next stage is evaluating the formative model (also shown in Fig. 4). The result shows that all relations have indicator significance with t-values above 1.96 and VIF below 5 (shown in Table 5). The stage after formative model evaluation is to analyze the structural model. The analysis resulting in positive and significant influence from all three IS qualities toward both UST and AST (both results shown in Fig. 4, Table 6 and Table 7). The INFQ, SYSQ, and SERVQ scores were calculated using latent scores.

The same method was conducted when analyzing the other respondent groups. The Japanese PLS stage models are shown in Fig. 5. The results for the Japanese respondent reflective model reliability and validity also are shown in Table 4. The model has eight indicators with indicators outer loading below 0.70. But the only indicator discarded is ENT1, due to the dimensions' AVE being below 0.50. The next stage, similar to the previous analysis, is evaluation of the formative model. The Japanese formative model evaluation results in all relations indicators being appropriate toward the requirements (shown in Fig. 5 and Table 5). The structural model evaluation of the Japanese respondents resulting in positive and significant influence from all three IS qualities toward both UST and AST (with both results shown in Fig. 5, Table 6, and Table 7).

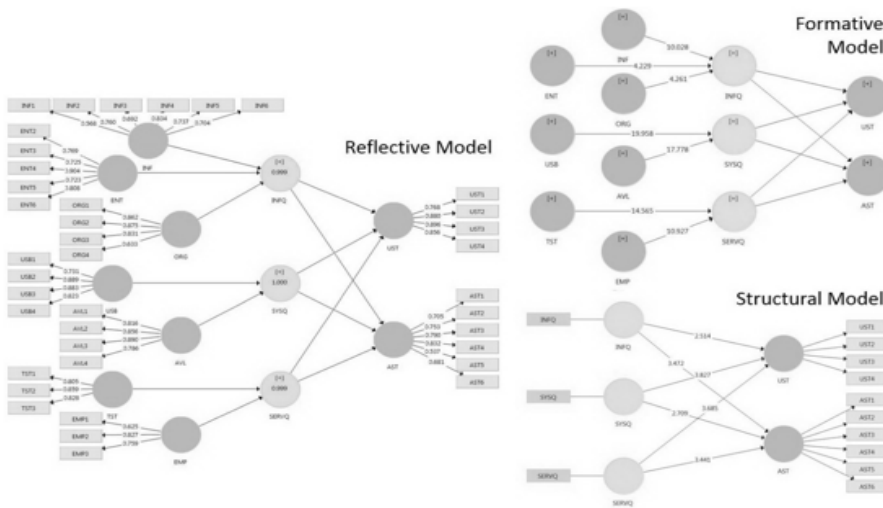


Figure 5 Japanese PLS Models

The third and final PLS-SEM analysis was conducted on the South Korean data using the same stages as the previous analysis. The South Korean reflective model is shown in Fig. 6. The results are similar with the Indonesian respondents, with all indicators retained due to the sufficient scores of both CR and AVE (also shown in Table 4). The result from South Korean formative model indicates that all the requirements are met. The structural model of the South Korean respondents also resulted in all three IS qualities affecting both UST and AST positively and significantly. The results are also shown in Table 6 and Table 7.

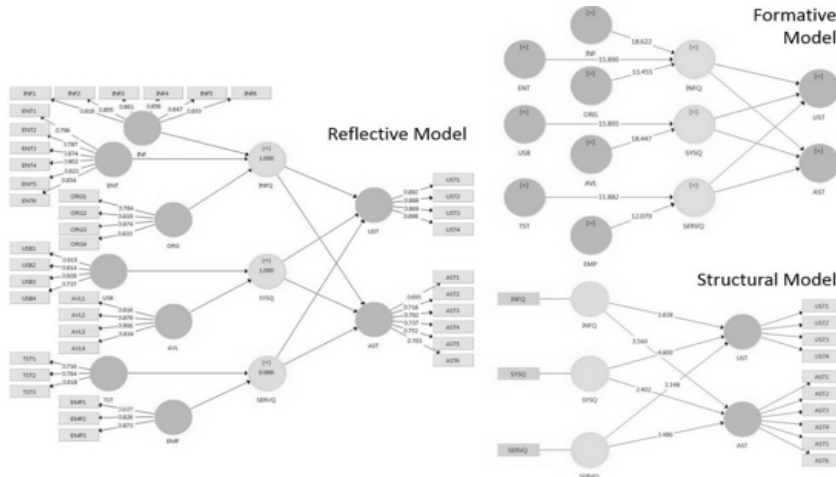


Figure 6 South Korean PLS Models

Table 4 Reflective Models Evaluations

Dimension / Variable	Outer Loadings	Cronbach's α	CR	Convergent Validity (AVE)	Discriminant Validity \sqrt{AVE}	CL	FL
Indonesia							
INF	All > 0.70	0.875	0.906	0.616	0.785	Fit	Fit
ENT	All > 0.70	0.881	0.910	0.627	0.792	Fit	Fit
ORG	All > 0.70	0.865	0.908	0.712	0.844	Fit	Fit
USB	USB4 < 0.70	0.846	0.899	0.694	0.833	Fit	Fit
AVL	All > 0.70	0.806	0.874	0.635	0.797	Fit	Fit
TST	All > 0.70	0.786	0.876	0.702	0.838	Fit	Fit
EMP	All > 0.70	0.675	0.822	0.608	0.780	Fit	Fit
UST	All > 0.70	0.887	0.922	0.746	0.864	Fit	Fit
AST	AST1, AST5 & AST6 < 0.70	0.807	0.863	0.518	0.720	Fit	Fit
Japan							
INF	INF1 & INF3 < 0.70	0.811	0.865	0.519	0.720	Fit	Fit
ENT	ENT1 < 0.70	0.779	0.891*	0.622*	0.700	Fit	Fit
ORG	ORG4 < 0.70	0.814	0.880	0.651	0.807	Fit	Fit
USB	All > 0.70	0.852	0.901	0.695	0.834	Fit	Fit
AVL	All > 0.70	0.858	0.904	0.702	0.838	Fit	Fit
TST	All > 0.70	0.776	0.870	0.691	0.831	Fit	Fit
EMP	EMP1 < 0.70	0.581	0.784	0.551	0.742	Fit	Fit
UST	All > 0.70	0.873	0.913	0.725	0.851	Fit	Fit
AST	AST5 & AST6 < 0.70	0.814	0.866	0.522	0.722	Fit	Fit

Table 4 (Cont.)

South Korea							
INF	All > 0.70	0.917	0.935	0.706	0.840	Fit	Fit
ENT	All > 0.70	0.916	0.935	0.706	0.840	Fit	Fit
ORG	All > 0.70	0.847	0.897	0.686	0.828	Fit	Fit
USB	All > 0.70	0.896	0.930	0.769	0.877	Fit	Fit
AVL	All > 0.70	0.881	0.919	0.738	0.859	Fit	Fit
TST	All > 0.70	0.664	0.817	0.599	0.774	Fit	Fit
EMP	EMP1 < 0.70	0.676	0.826	0.617	0.785	Fit	Fit
UST	All > 0.70	0.909	0.936	0.787	0.887	Fit	Fit
AST	AST1 < 0.70	0.827	0.874	0.537	0.733	Fit	Fit

*The CR and AVE after ENT1 was discarded.

**CR = Composite Reliability; AVE = Average variance extracted; CL = Cross Loadings; FL = Fornell-Larcker.

***INF = Informativeness; ENT = Entertainment; ORG = Organization; USB = Usability; AVL = Availability; TST = Trust; EMP = Empathy.

Table 5 Formative Model Evaluations

Path	Indonesia			Japan			South Korea		
	VIF	t	Coef	VIF	t	Coef	VIF	t	Coef
INF → INFQ	1.389	16.623	.470	1.203	10.028	.607	1.787	18.622	.479
ENT → INFQ	1.350	16.245	.422	1.140	4.229	.388	1.569	15.890	.444
ORG → INFQ	1.463	13.654	.362	1.061	4.261	.413	1.462	13.455	.275
USB → SYSQ	1.567	26.013	.615	1.562	19.958	.565	1.546	15.895	.567
AVL → SYSQ	1.567	23.532	.501	1.562	17.778	.553	1.546	18.447	.552
TST → SERVQ	1.283	22.690	.630	1.414	14.565	.664	1.376	11.882	.629
EMP → SERVQ	1.283	19.052	.535	1.414	10.927	.469	1.376	12.079	.515

*VIF= variance inflation factor; t= t-values; Coef = Path Coefficient

Table 6 Structural Model Significance

Path	Indonesia		Japan		South Korea	
	t	Coef	t	Coef	t	Coef
UST ← INFQ	3.057	.232	2.514	.226	3.838	.358
UST ← SYSQ	3.288	.217	3.827	.335	4.800	.354
UST ← SERVQ	5.431	.387	3.685	.313	3.148	.256
AST ← INFQ	4.864	.302	3.472	.269	3.472	.386
AST ← SYSQ	3.505	.240	2.709	.276	2.709	.203
AST ← SERVQ	5.104	.334	3.441	.339	3.441	.300

*t = t-values; Coef = Path Coefficient

Table 7 Structural Model Evaluations

Path	Indonesia			Japan			South Korea		
	R ²	f ²	Q ²	R ²	f ²	Q ²	R ²	f ²	Q ²
UST ← INFQ		.056			.081			.186	
UST ← SYSQ	.522	.052	.386	.530	.133	.372	.696	.162	.542
UST ← SERVQ		.181			.116			.233	
AST ← INFQ		.106			.116			.057	
AST ← SYSQ	.569	.070	.285	.535	.092	.269	.595	.120	.307
AST ← SERVQ		.149			.138			.124	

* R² = Coefficient of determination; f²= effect size; Q²=predictive relevance

The next part of analysis in this study is in regards to the impact of moderators toward UST and AST. The analysis was conducted using multiple regression for each of the dependent variables (UST and AST), on each research population (Indonesia, Japan, and South Korea). Testing for moderator effects was carried out using multiple steps. In the first step (Model 1), only the independent variables were entered into the regression model. In the second step (Model 2), moderators were entered. At the third step (Model 3), all the interaction variables (a product of independent and moderating variables) were entered. The analysis was then supported using interaction plotting.

Table 8 Moderators Effect on Dependent Variables (Indonesia)

	User Satisfaction			Attitude toward The Site		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
INFQ	.242***	.225***	.228***	.327***	.283***	.301***
SYSQ	.220***	.222***	.218***	.183**	.178**	.146**
SERVQ	.368***	.364***	.351***	.362***	.338***	.331***
NATID	-	.055	.093	-	.048	.057
UAV	-	.033	.050	-	.018	.018
A _{SHOP}	-	.012	-.010	-	.101*	.095
INFQ x NATID	-	-	-.143	-	-	.069
INFQ x UAV	-	-	.050	-	-	-.005
INFQ x A _{SHOP}	-	-	.213*	-	-	.158
SYSQ x NATID	-	-	.160*	-	-	.006
SYSQ x UAV	-	-	.007	-	-	.079
SYSQ x A _{SHOP}	-	-	-.162*	-	-	-.069
SERVQ x NATID	-	-	.065	-	-	.018
SERVQ x UAV	-	-	-.147**	-	-	-.109*
SERVQ x A _{SHOP}	-	-	-.160*	-	-	-.088
R ²	.505	.510	.552	.561	.573	.604
Adjusted R ²	.500	.499	.527	.556	.563	.581
R ² Change	.505	.005	.042	.561	.012	.031
F Value	93.360	47.006	21.554	116.534	60.489	26.635

* p < .05; ** p < .01; *** p < .001

Table 7 shows us the results of moderation effects toward the relationship between the three IS qualities with UST and AST on the Indonesian respondents. The interactions are shown in Fig. 7. Similar methods were used for analyzing the moderator effects on the relationship between the three IS qualities toward UST and AST on Japanese and South Korean respondents. Japanese results are shown in Table 8. The interaction plotting is shown in Fig. 8, while South Korean results are shown in Table 9, with the interaction plotting in Fig. 9.

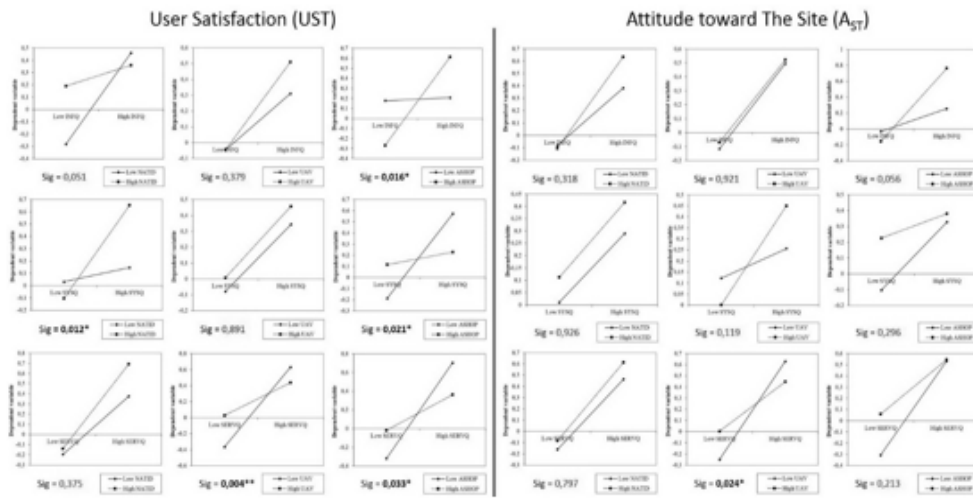


Figure 7 Interaction Plotting (Indonesia)

Table 9 Moderators Effect on Dependent Variables (Japan)

	User Satisfaction			Attitude toward The Site		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
INFQ	.231**	.254**	.258**	.295***	.244**	.263**
SYSQ	.365***	.362***	.361***	.204*	.189*	.177*
SERVQ	.275**	.289**	.265**	.368***	.348***	.274**
NATID	-	-.052	.038	-	-.022	.058
UAV	-	.058	.127	-	-.074	-.048
A _{SHOP}	-	-.036	-.093	-	.149	.140
INFQ x NATID	-	-	-.167*	-	-	.059
INFQ x UAV	-	-	.067	-	-	-.049
INFQ x A _{SHOP}	-	-	.008	-	-	.164*
SYSQ x NATID	-	-	.027	-	-	-.067
SYSQ x UAV	-	-	-.167*	-	-	-.112
SYSQ x A _{SHOP}	-	-	.044	-	-	-.038
SERVQ x NATID	-	-	-.108	-	-	-.114
SERVQ x UAV	-	-	-.031	-	-	-.017
SERVQ x A _{SHOP}	-	-	.075	-	-	.069

Table 9 (Cont.)

R ²	.507	.513	.582	.496	.514	.572
Adjusted R ²	.496	.489	.527	.484	.490	.515
R ² Change	.507	.005	.069	.496	.018	0.58
F Value	42.934	21.449	10.502	41.018	21.472	10.067

* p < .05; ** p < .01; *** p < .001

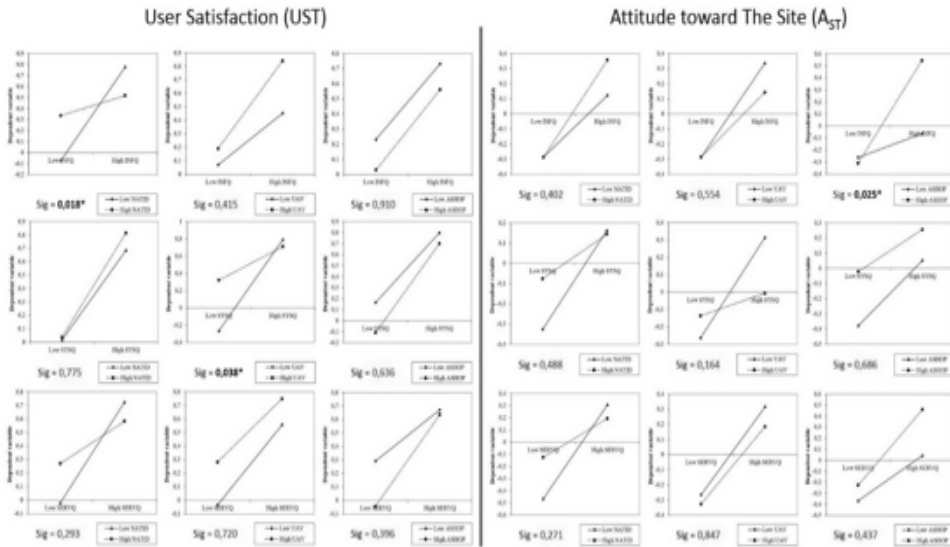


Figure 8 Interaction Plotting (Japan)

Table 10 Moderators Effect on Dependent Variables (South Korea)

	DV – User Satisfaction			DV – Attitude toward The Site		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
INFQ	.394***	.406***	.389***	.418***	.400***	.407***
SYSQ	.334***	.324***	.254**	.167*	.180*	.183*
SERVQ	.230**	.265**	.303***	.294***	.245**	.243*
NATID	-	-.069	-.028	-	.090	.063
UAV	-	.054	.049	-	-.077	-.093
A _{SHOP}	-	-.006	.009	-	.017	.012
INFQ x NATID	-	-	-.175	-	-	.369*
INFQ x UAV	-	-	-.024	-	-	.048
INFQ x A _{SHOP}	-	-	-.085	-	-	-.319*
SYSQ x NATID	-	-	-.072	-	-	-.191
SYSQ x UAV	-	-	.046	-	-	.056
SYSQ x A _{SHOP}	-	-	.064	-	-	.150
SERVQ x NATID	-	-	.159	-	-	-.142

Table 10 (Cont.)

SERVQ x UAV	-	-	.025	-	-	-.103
SERVQ x A _{SHOP}	-	-	.026	-	-	.099
R ²	.683	.690	.719	.581	.594	.633
Adjusted R ²	.674	.673	.679	.570	.573	.580
R ² Change	.683	.007	.029	.581	.013	.039
F Value	83.885	42.242	17.888	54.036	27.850	12.063

* p < .05; ** p < .01; *** p < .001

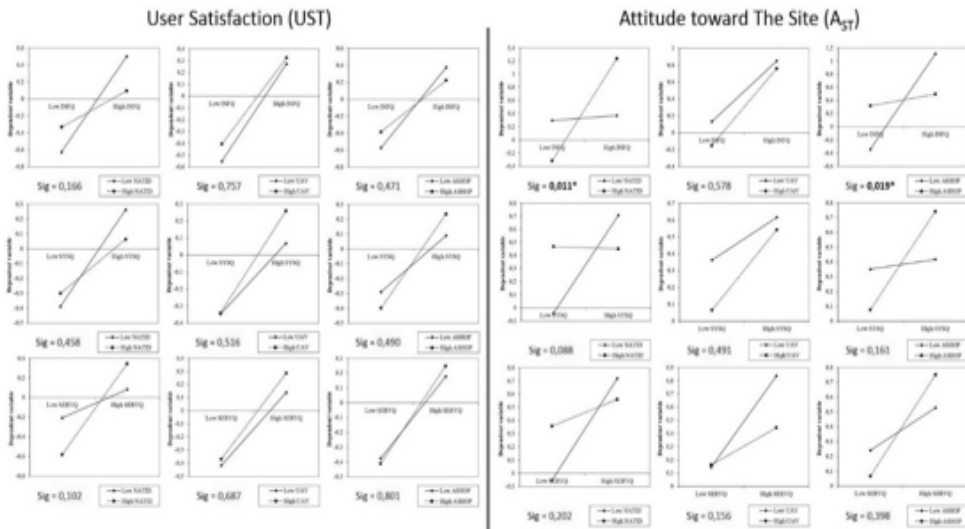


Figure 9 Interaction Plotting (South Korea)

DISCUSSION

Information Quality

Information quality significantly and positively influence both user satisfaction and attitude toward the site in Indonesia, Japan, and South Korea. Informativeness has the biggest influence on all respondent groups. This indicates that Indonesian, Japanese, and South Korean respondents value utilitarian functions as the most important factor. Entertainment valued as the lowest factor in Japan. It could be due the Japanese typically lacking a sense of humor (Chang, 2009). Japanese respondents did not really count on online shopping as a way to spend their time. Organization has the lowest influence in Indonesia and South Korea, which is similar to Chen and Well’s findings.

Information quality ranked highest in terms of influence toward both user satisfaction and attitude toward the side in South Korean respondents. The findings are not surprising, as South Koreans tend to have a similar culture to the West, with a big interest in shopping,

fashion goods, leisure, and well-being (Kim, 2002). This interest must be accommodated with relevant, accurate, and timely information. This also explains the influence of entertainment on South Korean information quality perspectives. Each respondent group has its own strengths in terms of information quality. Simply, marketers would be needed to maintain information quality to meet a customer's utilitarian, hedonic, and aesthetic needs.

System Quality

Similar to information quality, system quality also was found to be positively and significantly influence both user satisfaction and attitude toward the site on all respondent groups. Usability was found to influence system quality better than availability. System quality is important in emerging and advanced countries. Connectivity becomes the main issue in developing countries (Koo *et al.*, 2013). Marketers need to improve their system quality to ensure that their software and hardware are always in the best conditions; thus, if an error occurs, the error will be on the consumer's side - not the marketer's. Japan and South Korea as advanced countries have better internet environments. Japan ranks seventh in terms of Internet speed in the world; South Korea ranks first. With excellent connectivity, there would be no excuses for poor system quality.

System quality has the highest influence in affecting user satisfaction in Japan. Japanese are typically disciplined in time management (Chang, 2009). This would be associated with system quality, as usability and availability are both related with time. A general standard could be used by marketers to make navigation easier to learn and understand, which also would save time in the process. Confusing links, slow loading speed, and system freeze may lead customers to leave a website (Laudon & Traver, 2014).

Service Quality

Similar to the previous findings, service quality also influenced both user satisfaction and attitude toward the site positively and significantly. Service quality is important in Indonesia, as it ranks first in terms of influence toward user satisfaction and attitude toward the site. The results are similar to those of the Singapore Post (2014), where trust and empathy factors were described as main challenges in dealing with Indonesian customers. Service quality also was found as the most important factor in influencing attitude toward the site in Japan. Japanese culture has a long history of customer service (the "customer first" spirit) in its industry (Chang, 2009), so it wouldn't be a surprise finding. Marketers should ensure their customers are well served and allow them to customize their orders. The Singapore Post also mentioned that customization could be made through payment and delivery options, such as providing different payment methods and different logistic couriers.

Moderator Variables

National identity, uncertainty avoidance, and attitude toward online shopping has been shown to influence the relationship between the three IS qualities and user satisfaction in Indonesia. ASHOP was found to influence all the relations between the three IS qualities (INFQ, SYSQ, and SERVQ) and UST. NATID only influenced the relationship between SYSQ and UST, while UAV only influenced the relation between SERVQ and UST. On attitude toward the

site (AST), the only moderator influencing the relationship is UAV, which influenced the relationship between SERVQ and AST.

NATID and UAV were found to significantly influence the relationship between INFQ and UST, and SYSQ and UST, respectively, in Japanese respondents. ASHOP was found to influence the relationship between INFQ and AST. The relationship between IS qualities and UST was not supported in the South Koreans data, while the relationship between INFQ and AST was influenced significantly by NATID and ASHOP. Significant NATID moderators indicate cultures with strong cultural beliefs. Marketers could analyze which dimension matters the most and use it as a tool to gain a competitive advantage. The Phau and Chan (2003) NATID matrix could offer insights for future planning (Fig. 10).

		Consumer Ethnocentrism Score	
		Low	High
National Identity	Low	<ul style="list-style-type: none"> Test the nation market with standardized products. Consider further 'micro-level' segmentation and customized marketing mix to cater for the heterogeneous population. <p>Typical Asian Countries: Singapore, Japan</p>	<ul style="list-style-type: none"> Standardized products can be successful if manage to downplay the economic threat of foreign products <p>Typical Asian Countries: Hong Kong</p>
	High	<ul style="list-style-type: none"> If cultural homogeneity is the one contributing to the high NATID, then product standardization is the clear strategy. However, do pay attention to the country's heritage and belief system. <p>Typical Asian Countries: None from studies so far</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p style="text-align: center;">Middle Ground</p> <ul style="list-style-type: none"> Identifies specific dimension(s) of NATID where marketing mix adjustment may be required <p>Typical Asian Countries: Taiwan</p> </div> <ul style="list-style-type: none"> Customization of most products/offering for these countries is essential Localization of marketing mix offers competitive advantage <p>Typical Asian Countries: Thailand, Korea</p>

Figure 10 NATID matrix

Significant uncertainty avoidance indicates cultural beliefs about uncertainties in B2C e-commerce. All the relations were found negative, which means that higher UAV leads to lower perceptions about qualities on either UST or AST. It also indicates that marketers should be more reliable on maintaining IS qualities for consumer benefits.

Significant attitude toward online shopping indicates the ideas about online shopping in general would influence shoppers' perspectives. Increasing the general image of online shopping could provide the solutions. ASHOP was found to have more influence in Indonesia than in Japan and South Korea. This is reasonable due to the low Internet and e-commerce penetration in the country. Thus, the results for Hypotheses 7 and 8 are partially supported, with only some of the moderating variables influencing the relationship between the three IS success factors with UST and AST. Due to the results, the research concludes that both hypotheses are not supported.

Table 11 Hypotheses and Results

	Hypotheses	Results		
		Indonesia	Japan	South Korea
H1	User satisfaction is positively influenced by information quality.	Supported	Supported	Supported
H2	Attitude toward the site is positively influenced by information quality.	Supported	Supported	Supported
H3	User satisfaction is positively influenced by system quality.	Supported	Supported	Supported
H4	Attitude toward the site is positively influenced by system quality.	Supported	Supported	Supported
H5	User satisfaction is positively influenced by service quality.	Supported	Supported	Supported
H6	Attitude toward the site is positively influenced by service quality.	Supported	Supported	Supported
H7	National identity, uncertainty avoidance, and attitude toward online shopping have a significant impact on the relationship of the information, system, and service qualities and user satisfaction.	Not Supported	Not Supported	Not Supported
H8	National identity, uncertainty avoidance, and attitude toward online shopping have a significant impact on the relationship of the information, system, and service qualities and attitude toward the site.	Not Supported	Not Supported	Not Supported

CONCLUSION

This study reveals that all the IS qualities have significant influence toward both user satisfaction and attitude toward the site. While the influence of national identity, uncertainty avoidance, and attitude toward online shopping on the relations of the three IS qualities toward user satisfaction and attitude toward the site are not supported. The three respondent groups (Indonesia, Japan, and South Korea) also experienced different priorities on qualities and cultural effects.

MANAGERIAL IMPLICATIONS

Improvements on information, system and service quality would increase customer's satisfaction and degree of liking. The enhancement on user satisfaction and attitude toward the site will definitely help the development of an online business. The implications could be described on each study objects (as follows).

- Indonesian Customers

- (1) Indonesian customers appreciate every utilitarian, hedonic and aesthetic aspects of a website. Marketers should balance each aspect of INFQ in designing their websites.
- (2) Marketers need to pay attention to system performance due to the low hardware

specifications of Indonesian customers. With low Internet connections as a main issue, marketers must minimize system flaws. (3) Indonesian customers value service quality as the most important factor of an online business. Those who earn consumer's trust and show empathy would definitely gain an upper hand. (4) With high NATID levels, Indonesian customers would prefer customized products, which accord with local cultures.

- Japanese Customers

(1) Japanese customers prioritize utilitarian aspects of a website. Detailed information should be the marketers' priority on marketing their products. (2) SYSQ is valued as the most important factor of Japanese customer's satisfaction. Marketers must ensure their system performance is working perfectly due to high e-commerce penetration rates. (3) SERVQ is considered as the most influencing factor of Japanese customer's degree of liking. Japan is a country of hospitality, resulting in high standards of service quality. (4) With high levels of uncertainty avoidance, Japanese customers would prefer using high-quality marketers. (5) With low consumer ethnocentrism, Japanese customers are suitable for market testing.

- South Korean Customers

(1) South Korean customers regard INFQ as the most important factor on both satisfaction and degree of liking. High information quality is needed due to South Korean customers' preference of fashion, well-being, and leisure products. (2) South Korea ranks first in the world in Internet speed. System failures are definitely least expected. (3) South Korean customers are less influenced by cultural factors, resulting in a more global e-commerce market.

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