

The Effect of Xiaohongshu Service Quality on the Stickiness Through the Emotional Responses of Users

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Abstract

Xiaohongshu is called China's Instagram and is leading overseas product purchases and culture sharing. The purpose of this study is to investigate the structural relationship between Xiaohongshu service quality, emotional response perceived by users, and adherence to confirm the impact on Xiaohongshu's adherence at a time when non-face-to-face activities due to COVID-19 have increased. This study distributed and collected questionnaires from October 1st to October 7th, 2021, targeting 210 online shopping mall users. The research results were derived from a total of 206 questionnaires, excluding 4 questionnaires such as omission of record contents, and the causal relationship of the existing PAD model was attempted to be reported by revising and supplementing the existing PAD model. As a result of the study, first, it was confirmed that design among service quality had a positive effect only on ventilation during the user's emotional response. Second, it was confirmed that information among service quality had a positive effect on pleasure and ventilation among users' emotional responses. Third, it was found that security among service quality had a positive effect on pleasure among users' emotional responses. Finally, it was found that pleasure and ventilation had a positive effect on adherence in the user's emotional response. Based on this result, it is expected that it will be used for operation on other online platforms than the plan for the development of Xiaohongshu.

Keywords: *Xiaohongshu, Service Quality, User's Emotional Response, Stickiness*

1. Introduction

The global spread of the pandemic COVID-19 has naturally led people to reduce their outside activities and increase their inside activities. As a result, due to restrictions on external activities such as social distancing campaigns conducted nationwide, people have engaged in social and health activities such as eating food in the home as an internal space [1]. Among them, it was found that people met their needs by easily ordering and using external products or services at home using online shopping. It is no exaggeration to say that the number of times people use online shopping has sharply increased since the COVID-19 period [31]. In

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response to these changes and demands of the current times, Korean companies are actively introducing the platform of Xiaohongshu, called Chinese Instagram, in Korea as a way to provide convenient services to consumers, so that they can share overseas products and cultures. It is known that the main customers using the platform of Xiaohongshu are women in their 20s and 30s in China [44]. Meanwhile, the theoretical model that has received the most attention among studies on the emotional response dimension in the field of consumer research is the PAD model of Mehrabian A & Russell JA (1974); in the model consumers' emotions were divided into three dimensions: arousal, pleasure, and dominance [21].

In other words, they argued that consumer emotions belong to one of the three dimensions [30]. They explained that among the three emotions, feelings of arousal and pleasure serve as basic information that can evaluate the emotions that consumers feel, when they come to know a new stimulus or a product, different from the existing ones. Since PAD theory is applied not only to the general offline environment before the COVID-19 period, but also to the online environment [30, 32], the PAD theoretical model is known as a valid model that helps to understand the relationship between emotional response and behavior of consumers, even in an online environment [32]. Therefore, in this study, in order to investigate the effect of PAD theory on stickiness of Xiaohongshu, we investigate the structural relationship between Xiaohongshu service quality, perceived emotional response of users, and stickiness, and we focus on Xiaohongshu and present differentiation from previous studies. We use the precedent studies theory to draw positive emotions of users, expect service quality factors of Xiaohongshu to play an important role in enhancing Xiaohongshu stickiness. In particular, based on the PAD theory, we expect that the three emotional dimensions of users such as pleasure, dominance, and arousal, will increase stickiness to Xiaohongshu itself along with Xiaohongshu's service quality as previous variables, and we tried to identify the roles. We intend to provide practical implications for the development and efficient operation of Xiaohongshu application contents by deriving these research results in order to understand the service quality and emotional response of users that affect Xiaohongshu's stickiness.

2. Theoretical Background

2.1 Service Quality of Xiaohongshu

Xiaohongshu is a service platform for a representative social community based on an online well-activated social function in China. In 2013, the Xiaohongshu platform started a community-type social service in order to directly purchase goods overseas, and in 2014, started an e-commerce platform (RED store) service in earnest. Xiaohongshu is not a simple site for direct purchase of goods from abroad, but it can be understood as a social commerce applied to consumers to share their reviews of the products, and to proceed e-commerce on their own sites by adding social functions just like other social network services. In particular, the high proportion of female users in their 20s and 30s is one of the development factors of Xiaohongshu. In addition, compared to other SNS marketing, the actual purchase conversion rate is 8 - 9%, so it can be confirmed that Xiaohongshu has a greater influence [44]. The reason is that user-generated content (UGC) created by users leads to higher level of reliability from users than from corporate marketing.

Xiaohongshu is trying to increase the authenticity and credibility of users by deleting and managing content with high advertising characteristics. However, like other SNS, Xiaohongshu accepts Commercial feeds; and, in addition, introduces AI (Artificial Intelligence) technology in order to show customized contents to users, thereby appropriately suggesting changes in consumption trends. In addition, Xiaohongshu helps users to share their recommendation services and reviews. Xiaohongshu uses a system that allows consumers to evaluate products based on the experience of buyers who have a great influence on their decisions to actually purchase the products. Users can easily share their posts on Weibo and WeChat and maximize social functions with

other platforms [18].

Xiaohongshu provides social and e-commerce services by utilizing the following three functions. First, Xiaohongshu itself is a kind of SNS community platform that allows users to freely write reviews and comments on the product they purchased. The slogan of Xiaohongshu is 'sharing daily life', and users have the concept of 'sharing daily stories using Xiaohongshu'. Second, companies around the world have their own pages to promote and market products by opening brand accounts. Companies pay influencers (here, KOL: Key Opinion Leaders) in order to promote themselves, and lead consumers to easily access their e-commerce online pages. Third, Xiaohongshu is supporting various other companies to provide customers with the same services and logistics services Xiaohongshu provides, by developing stores on its own e-commerce platform. The fees from additional services, the sales brokerage fees, and the advertising expenses incurred at this time are the operating revenue sources of Xiaohongshu [18, 37].

In addition, the overall superiority and excellence of the platform are evaluated by the consumer's judgment and definition for the service quality provided by Xiaohongshu [39]; since Xiaohongshu aims to provide a high level of service quality online, the judgment made by consumers can be said to have an effect on providing value for users' needs and needs [2006]. Zeithaml et al. (2002) stated that it is necessary to recognize the interactive experience on the website as a major factor, by adding an evaluation conducted by a customer, in order to evaluate the quality of the website, and it was explained that the quality of Internet service should consider all stages of the customer's interaction experience, such as purchase, delivery, and efficient shopping.

McKnight et al. (2002) argued that, as the overall technology is developing, Internet users demanded accurate and reliable web sites by excluding the characteristics of advertising products and services and argued that the higher the user's perception of the service quality of the site, the higher the satisfaction and reliability of the site. Lee & Kim (2011) selected consumers who had ordered fashion products as online shopping malls within the last 6 months as subjects of the study. and divided three types of Internet shopping malls, such as general shopping malls, fashion-specialized shopping malls, and open markets; and conducted a survey on the characteristics of the site, product diversity, convenience of ordering, entertainment, reliability, reactivity, and stability. In the study, they emphasized the importance of accurately grasping service quality and precautions in interpreting the type of Internet shopping malls, because the sub-factors of service quality that affect consumer satisfaction differ depending on the three types of Internet shopping malls.

On the other hand, the study by Choi & Kim (2010) on the Internet securities trading system investigated the impact on customer satisfaction and profitability by composing Internet service quality into four factors; design, security, usability, and information. The results of the study showed that the factors affecting profitability were security, usability, and information; and four service quality factors had a meaningful effect on customer satisfaction, so all the sub-factors related to service quality in the Internet securities trading system explained that this is important. Park et al. (2010), who studied internet shopping selected the main customers such as office workers, college students, and general consumers as research subjects; and derived the results of dividing the Internet service quality into two categories; and classified service quality into process quality such as functionality, design, ease of use, privacy, and result quality such as accuracy of order and order status. As a result of the study, it was concluded that both types of service quality had a meaningful effect on customer satisfaction. Suh et al. (2008), who selected college students using Internet shopping malls as their research subjects, classified service quality into five factors: price fairness, reactivity, product diversity shaping, and certainty. As a result of the study, it was found that the quality of service that affects the reliability of shopping malls affects reliability in all areas except product diversity.

Accordingly, it can be interpreted that service quality is an important antecedent variable in the reliability of Internet shopping malls. Jun et al. (2017), who studied female college students who purchase fashion

products through the Internet web, organized service quality with diversity, communication possibility, reliability, accuracy, and convenience; and the effect of service quality on word-of-mouth intention and customer satisfaction was confirmed. As a result of the study, it was found that all factors of service quality had a meaningful effect on word-of-mouth intention and customer satisfaction, so the service quality should be managed in Internet fashion shopping. In particular, it emphasized that trust, which means the belief of customers in any situation, the convenience of problem solving caused by internet shopping, the security safety of personal information, and the speed of refund or exchange, is important. In order to give a positive image to customers while shopping online, service quality must be managed. As shown in the preceding results above, it was found that service quality plays an essential role in enhancing the satisfaction of customers using Internet shopping malls, but, more research is still needed on the specific process by which Internet service quality leads to customer satisfaction[10], and the service quality studied to date is a general and very common matter and can be applied to many other fields, but the evaluation scale of service quality is so common that there are factors that can be missed to be applied to services in a specific field. In other words, service quality has special characteristics according to the types of service fields, so there may be a disadvantage that there is a limit to claiming that the quality scale of the service, that has been studied a lot, has generality [2, 3, 5, 7, 8, 12]. In addition, the service quality of internet shopping malls has been continuously studied by selecting consumers in various products, but these studies have some disadvantages. First, the sub-factors of service quality are being used inconsistently. Second, although 'service quality' is used as a common term, but it is also used interchangeably in terms such as 'attributes' depending on the researches, so it is difficult to connect to 'service quality' in the Internet shopping mall environment. Accordingly, in order to study the quality of service of Xiaohongshu, it is necessary to first establish a clear concept for service quality and sub-component factors. In addition, establishing a measure of service quality that reflects the recent trends in platforms, with a mixture of Instagram and Internet shopping, can be said to be essential for future research on markets in areas such as Xiaohongshu.

2.2 PAD (Pleasure, Arousal, Dominance)

The PAD (Pleasure, Arousal, Dominance) model theory developed and introduced by Mehrabian A & Russell JA (1974) is the first model discussed in psychology and consumer behavior; in addition, the purpose of this theory is most often cited to measure consumption emotions, and it is known as a model that is easy to interpret using theory for a long time, and is used in various studies and generalized in academia [33, 42]. In the study of Mehrabian A & Russell JA (1974), PAD emotions are the concept described in the models of 'stimulus', 'organism', and 'response', where the organism develops emotions between stimulation and reaction, and recognizes the emotion. In other words, the emotions that customers have in physical environment can be measured in three dimensions: arousal, pleasure, and dominance [4]. The PAD emotional scale contains a total of 18 items because there are six different items in each of the three dimensions, and unlike other scales, the emotional scale does not measure emotions alone [20]. The reason is that all emotions belong to emotional responses, so because of some environmental stimulus, each individual shows an emotional response and evaluates a personalized emotional response. Among the three emotional dimensions, pleasure refers to the level of awareness of the stimulus that has occurred and feeling pleasant, and these emotions are related to satisfactory, happy, and hopeful emotions; arousal refers to a variety of levels of feeling, such as feeling enthusiastic and sleepy, after recognizing the stimuli that have occurred, and these are related to enthusiastic and excited emotions; finally, domination can be said to be at a level that individuals can feel when they are not restricted or in a free environment [4]. The preceding papers using PAD emotion scales are as follows. Seo Moon-sik and Kim Sang-hee (2004), who studied e-services capes of internet shopping malls, argued that the

emotions consumers feel in e-services capes have a significant impact on revisit intention and stay time; and it is argued that the service should be developed so that consumers can feel positive emotions such as happiness and pleasure, as well as arousal emotions such as interest and expectation, in order to increase the revisit intention and stay time consumers. There is a paper published by Kim & Lee (2011) in the literature that shows the relationship between emotional factors such as arousal, pleasure, and dominance felt by consumers in online and offline stores and the influence of each factor on behavioral intention; and the paper by Lee SI and Park YS (2013), which studied to clarify the causal relationship between service quality and customer sentiment of Internet shopping malls, investigated the structural relationship of each factor using the PAD-Flow model. Lee KS and Lee HR (2011), who studied travelers using smart phone services, cited the technology acceptance model and PAD scale using arousal and pleasure in order to examine the traveler's intentions and attitudes. In this study, we intend to use the arousal and pleasure factors that have consistently been found to have influence in several previous studies, as essential emotional scales for the PAD theory.

2.3 Stickiness

If we look at the definition of stickiness on the basis of online services, stickiness refers to the total cumulative time a user has spent on the website for a certain period of time or the number of visits by total users [29]. Alternatively, the ability of a website to make a visitor spend a long time with a positive impression is called stickiness [33]. If a user visits the website more frequently, spends a longer time than the average user in browsing, etc., and engages in more activities than other users, the user can be interpreted as 'the user has a high degree of stickiness to the website' and the competence of the website can be measured with the high degree of stickiness [16].

3. Research Method

3.1 Sample Design and Measurement Tools

In this study, we selected people who use Xiaohongshu to investigate the correlation between the service quality of Xiaohongshu and the impact of the user's emotional response on the stickiness. The data collection period was from October 1, 2021 to October 7, 2021; we explained the purpose and contents of the study online to 210 research subjects and obtained consent and surveyed them and received questionnaires. The final 210 questionnaires were collected, and among the collected questionnaires, the 4 response sheets with omission of records or a prominent tendency toward centralization were excluded as they were judged to have no value as statistical data. Therefore, a total of 206 copies were used for the final analysis. As previously discussed, this study used the basis of previous studies on the service quality, user's emotional response, and closeness of Xiaohongshu; and the purpose of this study was to investigate the effects of Xiaohongshu service quality on the user's stickiness through emotional response; and the items from previous studies were modified according to the situation to create our evaluation items. The items using a 5-point Likert scale were constructed as follows.

Table 1. List of measurement items

Variables	Measurement Items	References
Function	Xiaohongshu has a clear classification system, so the desired service can be easily found. Xiaohongshu provides useful search functions for visitors.	[26, 27, 38]

	Xiaohongshu provides information to make purchase decisions.	
Design	Xiaohongshu has a good view of the screen composition.	
	Xiaohongshu is convenient to see in terms of design.	
	Xiaohongshu clearly provides images, maps, and videos for the information I want.	
Informativity	The information in the Xiaohongshu app is useful.	
	The Xiaohongshu app provides the latest information related to the one I want.	
	The information I want from the Xiaohongshu app is accurate.	
Security	The Xiaohongshu app provides a safe online payment method.	
	I feel secure in my transactions with the Xiaohongshu app.	
	I feel that the Xiaohongshu app has thorough security functions.	
Pleasure	I felt happy while using Xiaohongshu service.	
	I felt interested while using the Xiaohongshu service.	
	I felt satisfied while using the Xiaohongshu service.	
Arousal	I felt a sense of vigor while using the Xiaohongshu service.	
	I felt excited while using the Xiaohongshu service.	[28, 34]
	I felt drawn to the atmosphere while using Xiaohongshu service.	
Dominance	I was able to take the initiative while using the Xiaohongshu service.	
	I was able to take the lead while using the Xiaohongshu service.	
	I was able to do voluntarily while using the Xiaohongshu service.	
Stickiness	I was able to do as I wanted while using the Xiaohongshu service.	
	I will continue to use the Xiaohongshu, which I use now.	[47]
	Whenever I want to use the app, I am willing to continue using the Xiaohongshu I currently use.	

3.2 Research Hypothesis

3.2.1 The Relationship between Xiaohongshu Service Quality and User's Emotional Responses

The PAD model has been used in many studies related to the emotional response of users in service quality, and is still widely cited today. Among the emotional dimensions of the PAD model, the factors of arousal and pleasure, in particular, have been shown in previous studies, but the dimension of dominance has not yet been studied in online service quality. With the recent epidemic of COVID-19 prevalent around the world, the hypothesis to see if online services that are easily available indoors can give users awakening and pleasure can be a meaningful one [17, 28, 33]. In addition, in some studies, the factor of dominance did not have a significant effect on consumer emotional changes, but we included the factor in this study, expecting it to have a positive effect along with other dimensions such as the factors of pleasure and arousal in such a special situation. Accordingly, the research hypotheses that we have established, by modifying and supplementing the PAD model and previous studies, are as follows.

H1-1: Among the service qualities of Xiaohongshu, the function will have a positive (+) effect on the pleasure of users' emotional responses.

H1-2: Among the service qualities of Xiaohongshu, the design will have a positive (+) effect on the pleasure of users' emotional responses.

H1-3: Among the service qualities of Xiaohongshu, the informativity will have a positive (+) effect on the pleasure of users' emotional responses.

H1-4: Among the service qualities of Xiaohongshu, the security will have a positive (+) effect on the pleasure of users' emotional responses.

H2-1: Among the service qualities of Xiaohongshu, the function will have a positive (+) effect on the arousal of users' emotional responses.

H2-2: Among the service qualities of Xiaohongshu, the design will have a positive (+) effect on the arousal of users' emotional responses.

H2-3: Among the service qualities of Xiaohongshu, the informativity will have a positive (+) effect on the arousal of users' emotional responses.

H2-4: Among the service qualities of Xiaohongshu, the security will have a positive (+) effect on the arousal of users' emotional responses.

H3-1: Among the service qualities of Xiaohongshu, the function will have a positive (+) effect on the dominance of users' emotional responses.

H3-2: Among the service qualities of Xiaohongshu, the design will have a positive (+) effect on the dominance of users' emotional responses.

H3-3: Among the service qualities of Xiaohongshu, the informativity will have a positive (+) effect on the dominance of users' emotional responses.

H3-4: Among the service qualities of Xiaohongshu, the security will have a positive (+) effect on the dominance of users' emotional responses.

3.2.2 Relationship Between Emotional Response and Stickiness of Users

According to Chaudhuri and Holbrook (2001), the degree of Stickiness can be divided into the dimensions of the repetition of the purchase behavior performed by the user, the dimension of the behavior related thereto, the favorable immersion in service quality, and attitudes related to emotions and attachment. According to the study by Choi Yong-gil and Park Jong-won (2007), it was found that interactivity had a significant effect on the loyalty of users. Since the high loyalty of users leads to the stickiness to use the service more frequently, it is difficult to distinguish between stickiness and loyalty. Meanwhile, Kim Seung-woon and Kang Hee-taek (2007) studied the interaction between users by selecting people who use product review boards in e-commerce, and have found that the interaction of the bulletin board users has a significant effect on the trust of the service quality through the effectiveness felt by users. In addition, Cyr et al. (2009), in their study, showed that interactivity had a meaningful effect on loyalty of users through pleasure, trust, and effectiveness. Accordingly, the research hypotheses that we have established, by modifying and supplementing previous studies on the emotional response and stickiness of users, are as follows.

H4-1: Among the users' emotional responses, the pleasure will have a positive (+) effect on the stickiness.

H4-2: Among the users' emotional responses, the arousal will have a positive (+) effect on the stickiness.

H4-3: Among the users' emotional responses, the dominance will have a positive (+) effect on the stickiness.

3.3 Analysis Method

In this study, in order to analyze the causal relationships between the presented variables, we used covariance structure analysis method which was designed to analyze complex causal relationships, instead of individually testing each hypothesis. We used SPSS and AMOS as tools for analysis.

4. Analysis Results

4.1 Characteristics of Samples

The demographic characteristics of the sample we used to perform statistical analysis in this study are as follows. By gender, there were 42 males (20.4%) and 164 females (79.6%). Also, by age group, the group of 20-29 years old had the most with 125 people (60.7%), the group of 30-39 years old had 79 people (38.3%), and the group of 40-year-old or older had 2 people (1.0%). Also, among the study subjects, 41 people (19.9%) were married and 165 people (80.1%) were unmarried; The number of times using Xiaohongshu for 7 days were 1-2 times by 57 people (27.7%), 3-4 times by 22 people (10.7%), 5-6 times 18 people (8.7%), 7-10 times 25 people (12.1%), 11-20 times by 24 people (11.7%), 21~30 times by 16 people (7.8%), and were 31 times by 44 people (21.4%).

4.2 Reliability and Validity of the Measurement Items

We verified the validity of the measurement model for the final collected data (n=206). There are reliability tests and validity tests that are commonly used to verify the validity of the measurement model. We tested a validity of measurement items, using methods of convergent validity and discriminant validity. We used Cronbach's α coefficient (0.7 or higher) which is commonly used in social science research to verify reliability. And we used AMOS in order to verify the convergent validity of factor loading values among the results of confirmatory factor analysis. In general, if the factor loading is ± 0.4 or more, it is judged to be significant (Hong, 2002). Discriminant validity is used to verify the degree to which two similar concepts are clearly distinguished, and for this purpose, we used average variance extracted (AVE) and the method of Pearson correlation analysis, proposed by Fowell and Larcker (1981). In each constituent concept, if the square value of AVE exceeds the correlation coefficient value, between the corresponding constituent concept and another constituent concept, it is considered that there is discriminant validity. <Table 2> shows the results of testing the reliability and validity of the variables used in this study. As a result of our measurement of reliability, there were no items that impair reliability, and the Cronbach's α value used for reliability verification was distributed from 0.775 to 0.925 and was higher than the recommended value (0.7 or higher), so it is judged that the reliability of the measurement item was ensured. In addition, since the factor loading value to verify the validity was also found to be above the standard value suggested in the previous study, it was found that there was no problem with the validity of the measurement item. Finally, it is judged that the discriminant validity using the average variance extraction value was secured, because there was no problem. These results statistically prove that the questions in the questionnaire have internal consistency and validity. <Table 2> shows the results of testing the reliability and validity for the measurement model used in this study.

Table 2. Confirmatory factor analysis and reliability result

Variables	Measurement Items	Factor Loadings	Measurement Errors	Cronbach's α	C.R	AVE
Function	Fun3	0.768	0.218	0.875	0.933	0.823
	Fun2	0.870	0.123			
	Fun1	0.879	0.116			
Design	Des3	0.812	0.223	0.884	0.920	0.793
	Des2	0.851	0.180			
	Des1	0.878	0.158			
Informativity	Inf3	0.919	0.117	0.925	0.947	0.856

	Inf2	0.905	0.123			
	Inf1	0.871	0.168			
Security	Sec3	0.627	0.336			
	Sec2	0.819	0.169	0.775	0.873	0.698
	Sec1	0.765	0.207			
Pleasure	Ple3	0.823	0.252			
	Ple2	0.935	0.106	0.906	0.927	0.809
	Ple1	0.868	0.187			
Arousal	Aro3	0.712	0.345			
	Aro2	0.871	0.178	0.861	0.902	0.755
	Aro1	0.890	0.144			
Dominance	Dom3	0.640	0.519			
	Dom2	0.913	0.122	0.802	0.843	0.647
	Dom1	0.752	0.346			
Stickiness	Sti3	0.855	0.158			
	Sti2	0.763	0.223	0.783	0.867	0.688
	Sti1	0.633	0.395			

4.3 Goodness-of-fit Test in Measurement Model

In order to verify whether the data collected after verifying the reliability and validity of the measurement model were suitable for the research model, we conducted the fitness test using AMOS. In order to verify the fit of the initial measurement model, a total of 18 measurement items were used. In the goodness-of-fit test commonly used in previous studies, a value of 0.9 or higher is used for the Goodness-of-fit Index (GFI), and we used p values (≥ 0.05) for NFI (Normed Fit Index) 0.9 or higher, RMR (Root Mean Square Residual) 0.05 or lower, and CFI (Component Fit Index) 0.9 or higher. As a result of testing the fitness of the measurement model, the fitness was $\chi^2 = 188.927$ ($df=120$), $p = 0.000$, $\chi^2 / df = 1.574$, $GFI = 0.908$, $NFI = 0.907$, $CFI = 0.963$, $RMR = 0.036$; since all the values were above the recommended values, it was found that there was no problem with the fitness. Therefore, it can be interpreted that the data we collected to verify this research model is suitable for the research model (Kang, 2013; Hong, 2002).

Table 3. Correlations among Constructs

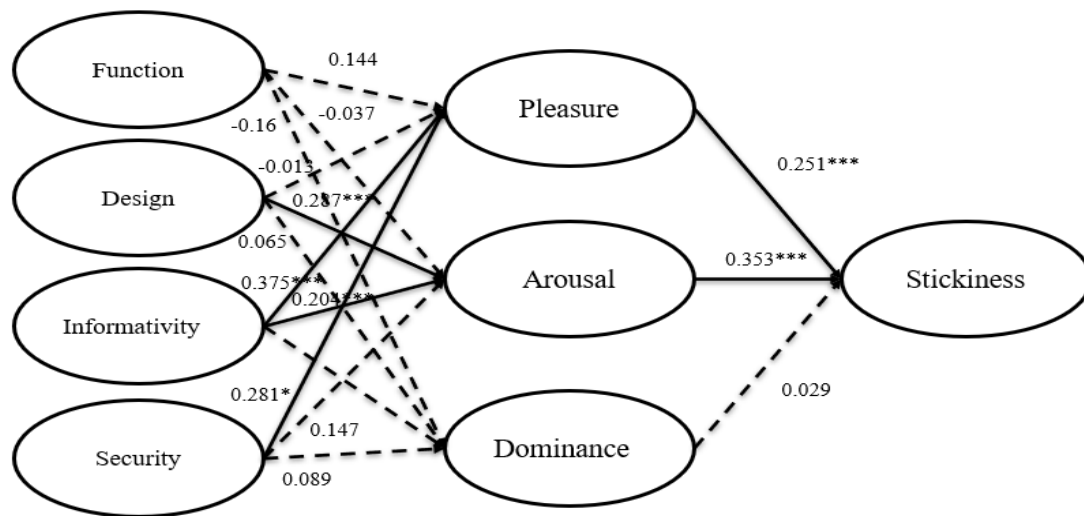
Variables	Correlation coefficients between variables							
	1	2	3	4	5	6	7	8
(1) Function	0.907							
(2) Design	0.237**	0.891						
(3) Informativity	0.394**	0.337**	0.925					
(4) Security	0.281**	0.486**	0.372**	0.835				
(5) Pleasure	0.292**	0.259**	0.500**	0.340**	0.899			
(6) Arousal	0.185**	0.420**	0.386**	0.336**	0.160*	0.869		
(7) Dominance	-0.066	0.027	-0.071	0.032	-0.195*	0.010	0.804	
(8) Stickiness	0.280**	0.449**	0.443**	0.454**	0.401**	0.413**	-0.030	0.829
Average	2.814	3.277	2.722	2.977	2.646	3.307	3.472	2.951
Standard Deviation	0.645	0.737	0.787	0.602	0.820	0.747	0.760	0.644

** $p < 0.01$, * $p < 0.05$, number at the diagonal line is average variance extracted (AVE).

As shown in <Table 3>, the variance extracted index was larger than the square value of the correlation coefficient of each factor. Therefore, the discriminant validity between constituent concepts was secured [15, 22].

4.4 Results of Research Model Verification

After verifying the validity of the measurement model using a total of 206 data, we conducted structural equation modeling (SEM) using AMOS to verify the effect between the variables presented in our research model. We can derive two important results by analyzing structural equation modeling. The first result is the degree of fitness of the structural model. If we look at the fitness of the research model, the statistical values were found to be; $\chi^2=1036.084$, $p=0.000$, $\chi^2/df = 1.733$, $RMSEA=0.054$, $NFI=0.871$, $CFI=0.94$, $GFI=0.821$, $AGFI=0.789$, $TLI=0.934$, $IFI(\Delta 2) = 0.941$; when we examined the fitness index based on CFI, TLI, and RMSEA, which Schreiber et al. (2006) presented as indices of model fitness, it was confirmed that the fitness of the research model was generally good. The results of the hypothesis test are shown below. First, among the characteristics of adolescent media use, presentness was found to have a positive (+) effect on self-efficacy with $\beta=0.116$, among the characteristics of adolescent media use, mobility was found to have no significant effect on self-efficacy as $\beta=0.027$, among the media use characteristics, the relationship did not have a significant effect on self-efficacy as $\beta=-0.081$, among media use characteristics, Personality was found to have a positive (+) effect on self-efficacy with $\beta=0.169$, among the characteristics of adolescent media use, entertainment was found to have no significant effect on self-efficacy with $\beta=0.081$, no among the characteristics of adolescent media use, utility was found to have a positive (+) effect on self-efficacy with $\beta=0.61$. Second, Among the characteristics of adolescent media use, presence was found to have no significant effect on flow with $\beta=-0.08$, among the characteristics of adolescent media use, mobility was found to have no significant effect on flow with $\beta=0.059$, among the characteristics of adolescent media use, relationship was found to have no significant effect on flow with $\beta=-0.025$, among the characteristics of adolescent media use, personality was found to have no significant effect on flow with $\beta=0.022$, among the characteristics of adolescent media use, entertainment was found to have a positive (+) effect on flow with $\beta=0.349$, and among the characteristics of adolescent media use, utility was found to have no significant effect on flow as $\beta=0.076$. Third, self-efficacy was found to have no significant effect on school adaptation as $\beta=-0.027$, flow was found to have a positive (+) effect on school adaptation with $\beta=0.485$. Finally, self-efficacy was found to have a positive (+) effect on social relationships with $\beta=0.566$, and flow was found to have no significant effect on school adaptation as $\beta=-0.081$.



*** p<0.01, ** p<0.05, * p<0.1

Figure 1. Structural equation results

Table 4. The result of research model

Hypothesis	Path	Path coefficients	Results
H1-1	Function -> Pleasure	0.144	Rejection
H1-2	Design -> Pleasure	-0.013	Rejection
H1-3	Informativity -> Pleasure	0.375***	Adoption
H1-4	Security -> Pleasure	0.281*	Adoption
H2-1	Function -> Arousal	-0.037	Rejection
H2-2	Design -> Arousal	0.287***	Adoption
H2-3	Informativity-> Arousal	0.204***	Adoption
H2-4	Security -> Arousal	0.147	Rejection
H3-1	Function-> Dominance	-0.16	Rejection
H3-2	Design -> Dominance	0.065	Rejection
H3-3	Informativity-> Dominance	-0.05	Rejection
H3-4	Security -> Dominance	0.089	Rejection
H4-1	Pleasure-> Stickiness	0.251***	Adoption
H4-2	Arousal-> Stickiness	0.353***	Adoption
H4-3	Dominance-> Stickiness	0.029	Rejection

*** p<0.01, ** p<0.05, * p<0.1

5. Conclusion

Recently, due to the spread of the epidemic COVID-19 around the world, it is a time when people are more active indoors than outdoors in accordance with the policy of social distancing. The purpose of this study is to investigate the degree of user's stickiness to Xiaohongshu, China's representative online e-commerce platform, at a time when non-face-to-face Internet shopping is more active than existing face-to-face shopping activities. For the development of Xiaohongshu, in our study we investigated the online service quality and suggested the service quality to be provided to users, and found out the areas for further development of Xiaohongshu in the future, and tried to provide results of guidelines to other online platforms. The results of the research we

have conducted for the purpose of the above study are as follows. First, it was confirmed that among the service qualities of Xiaohongshu, design had a positive effect only on arousal among the emotional responses of users. This is a result that highlights the need for design, which was considered important in Internet shopping in the past, and it can be said to be the result of overall application not only to Xiaohongshu but also to Internet shopping such as Instagram. Especially, trend-sensitive users of Xiaohongshu respond quickly to the gazing around, thoughts, and public opinion that are easily transmitted online.

Since Xiaohongshu has secured a large number of users, users have no choice but to react sensitively to design. Second it was confirmed that among the service qualities of Xiaohongshu, informativity had a positive effect on pleasure and arousal among the emotional responses of users. Therefore, when users search for information or hobbies they need, they obtain the latest ones by using the informativity of Xiaohongshu, and if the information they searched is recognized by some people, the users will be satisfied with using Xiaohongshu, and this satisfaction will lead to their pleasure again. In addition, we can guess that those who use Xiaohongshu will get a good response from the people around them. This can be seen as a natural result because individual users can think that their influence in the online environment also increases by sharing information they obtained from SNS such as Twitter. Third, it was confirmed that among the service qualities of Xiaohongshu, security had a positive effect on pleasure among the emotional responses of users. Since personal information is important in an online environment, it must be enacted and protected by law. Therefore, if the online e-commerce platform is not secure, the platform will cause anxiety to users, which may lead to a decrease in the reliability of the service itself. Therefore, the security of Xiaohongshu should be strictly protected, and if personal information is not protected and is likely to be used for unintended purposes, the qualifications of business management in related companies or institutions will be suspected. Therefore, due to the characteristics of the online e-commerce platform, security can be seen as a basic factor for users to safely use the site and feel pleasure. Fourth, in the emotional response of Xiaohongshu users, it was found that pleasure and arousal had a positive effect on Stickiness of them. The reason is that the users who felt more pleasure while using Xiaohongshu influence the stickiness to reuse the Xiaohongshu, and this result has also been confirmed in the results of a number of previous studies. Similarly, the users who felt more positive emotions using Xiaohongshu tend to use Xiaohongshu more and stick to it closely, which can be seen as the basic logic of emotions and this fact has been established in this study. If we make users of Xiaohongshu feel happy and make people around us highly aware of Xiaohongshu, we can see that not only will there be a publicity for Xiaohongshu, but also the intention to use Xiaohongshu will be high. The points to be noted when interpreting our research results as above are as follows. First, we adopted and used some of the results of previous studies when establishing factors for Xiaohongshu's service quality in this study, but there is a limit to expanding the results due to various factors. In order to establish quality factors to be used in research, more meaningful research results can be obtained if data research is conducted more systematically and if the results of studies on Chinese online platforms are utilized. Next, we included all online users as subjects in this study, and obtained the results derived from the study design of fragmentary investigations without any intervention effect. Therefore, it is necessary to pay attention in interpreting the meaningful factors that can affect the actual subjects, as the intervention effect. Therefore, we propose as follows so that follow-up studies can be conducted by supplementing the above limitations. First, a factor structure can be derived if essential factors are re-derived by including more diverse factors in the pilot study. At this time, it is expected that it will be possible to establish factors together with an expert who understands the online service environment of Xiaohongshu as well as the results of previous studies. Second, in a follow-up study, if we investigate only those who have used Xiaohongshu directly or experienced actual purchases more than a few times, it seems that we will be able to draw more accurate conclusions about Xiaohongshu. On the other hand, accordingly, it may take a

longer time to recruit the subjects and conduct the research.

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