



# The Effect of Social Economy Internet Shopping Mall Characteristics on Customer Reliability and Loyalty: Focusing on Ethical Purchase Intention and the Moderating Effect of the Residential Area

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**Abstract. Background/Objectives:** This study empirically verified the effect of service characteristics of social economy internet shopping malls in Jeollanam-do on customer reliability and loyalty. In addition, the reasons for ethical purchase and the moderating effect of residential areas were verified.

**Methods/Statistical analysis:** This study conducted an online survey on social economy shopping mall members, and a total of 267 people participated. As for the research methodology, the SPSS 22.0 program was used. Frequency analysis, exploratory factor analysis, reliability analysis, etc. were used for general characteristic analysis, and multiple regression analysis, mediating effect analysis, and moderation effect analysis were performed for hypothesis testing.

**Findings:** The main results according to the hypothesis test are as follows. The system characteristics and product characteristics of the social economy online shopping mall had a significant influence on the reliability. Also, reliability had a significant influence on loyalty. It was found that reliability played a mediating role in the relationship between systemic characteristics, product characteristics and customer loyalty. In the analysis of the moderation effect using the ethical reason for purchase and the residential area as variables, it was found that it plays a role of a similar control variable.

**Improvements/Applications:** As this study was based on a limited sample and that 'greenanum' is the only social economy online shopping mall, it may be insufficient to generalize the research results. Further research is expected to be conducted in the future.

**Keywords:** Social economy, Internet shopping mall, Greenanum, Reliability, Loyalty, Purchase intention.

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## INTRODUCTION

In Jeollanam-do, the Jeollanam-do social economy shopping mall 'greenanum' (<https://greenanum.co.kr>) has been operated since 2013 to promote and popularize the purchase and popularization of social economy (social enterprises, village enterprises, social cooperatives, self-supporting enterprises) corporate products. It is currently managed by a social enterprise specializing in online shopping malls. The site has been redesigned in 2018. As of June 2020, 175 social economy enterprises in Jeollanam-do have entered stores, and a total of 349 items are on sale. 3,691 members of the site, an average of 285 people per day visited the site. The main items are 7 items including processed agricultural and fishery foods, and the average annual sales for the last five years (2015-2019) is 27.5 million won(₩), which is poor.

The Jeonnam Social Economy Shopping Mall (hereinafter referred to as "Greenanum") site has a low national awareness of Jeonnam social economy products as well as its own awareness. Jeollanam-do (Metropolitan Government), the operating entity, is steadily increasing new subscriptions by providing mileage and coupons along with site design reorganization for the Jeonnam social economy product sales strategy, and sales are also on the rise. This study to explore the effects of system characteristics and product characteristics of shopping malls on customer reliability, customer loyalty, etc. through mediating and moderating effects for customers who purchase "Greenanum."

## 2. Materials and methods

### 2.1 Advance Research

#### 2.1.1 Social economy

The term social economy was first used in 1830 by the French economist Charles Dunoy. The social economy was regarded as an alternative system to solve ethical and social problems under the system of real capitalism. Since then, it has gained legal recognition from the government in the late 19th century and gained institutional recognition[1, 2].

In 1996, Korea established the "Self Support Center" at the government level and started using the term "social" when the "social job program" was launched in 2003. Since then, the social enterprise law was enacted in 2007, the development of village enterprises in 2010, and the Basic Act on Cooperatives was enacted in 2012, resulting in a "social economy" system[3].

Social economy is defined by the government as "all economic activities of the private sector that create social value through the production and sale of goods and services based on cooperation and self-help among members." It refers to economic activities that pursue social values at the state-market boundary based on the participation of members. In terms of economic activity, it is similar to the market economy, but there are differences in activity goals such as autonomy, democracy, solidarity, and cooperation..

#### 2.1.2 Internet shopping mall characteristics

Internet shopping mall characteristics is an abstract variable that is difficult to define and measure. In this study, the characteristics of convenience, information, and service of the preceding research on Internet shopping mall sites were composed as independent variables[4]. Zeithaml and Bitner (2002) mentioned that when evaluating service quality, quality is a major factor in customer satisfaction from a service point of view, and product quality and price are also important factors in customer satisfaction[5]. Therefore, in this study, the characteristics of Internet shopping malls are classified into system characteristics and product characteristics, and the influence relationship is analyzed.

#### 2.1.3. Customer loyalty

Customer loyalty is the act of using a product of a specific company and then using the product again, and there are several research papers that show continuous repurchase behavior rather than one-off purchase behavior[6,7]. According to Rust & Zahorik (1995), the loyalty of internet shopping malls is that customers' repurchasing behavior directly benefits the company, and when the company secures loyal customers, positive word of mouth, repurchase intention, and marketing cost reductions are seen[8].

#### 2.1.4. Reliability

Jarvenpaa et al. (1999) proved that the reliability of internet shopping malls has an effect on internet purchase intention and perceived risk reduction in previous studies [9]. Eunyong Lee (2016) analyzed that factors such as customized service, design, and information quality of the app affect the definition of information quality and online review in a study on mobile apps for purchasing fresh food[10]. Eunjung Ji et al (2019) confirmed that quality attributes positively affect food trust in the effects of quality attributes on trust, satisfaction, and reuse intentions for consumers using platform-based online food shopping malls[11].

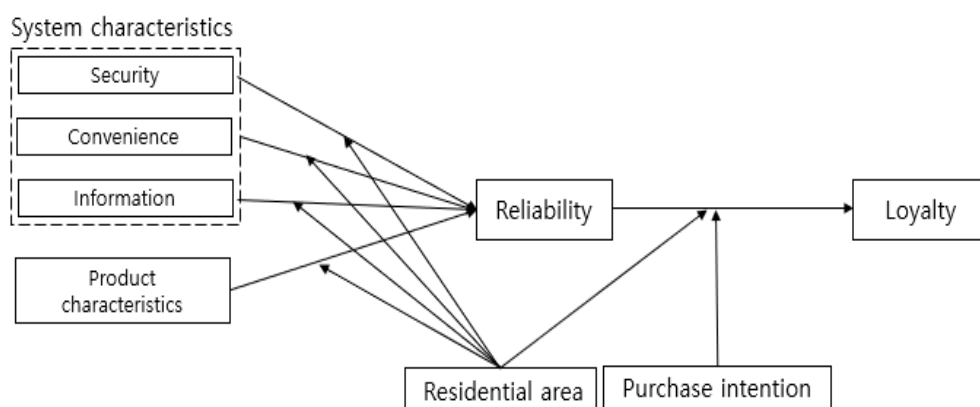
#### 2.1.5. Ethical purchase intention

Ethical purchase intention refers to whether the purchase intention for the product of a social economy enterprise has an ethical orientation. Previous studies have shown that product purchase and repurchase intentions have a positive effect on social economy and ethical consumption propensity[12, 13, 14].

### 2.2 Research Model and Methods

#### 2.2.1 Research Model

The research model is composed of factors such as system characteristics, product characteristics, reliability, and loyalty of Internet shopping malls, as shown in Figure 1.



**Figure 1** Research Model

### 2.2.2 Hypothesis

The hypothesis according to the research model is shown in Table 1.

**Table1** Research hypothesis

[H1] Among system characteristics, security will have a significant effect on reliability.
[H2] Among the system characteristics, convenience will have a significant influence on reliability.
[H3] Among system characteristics, Information will have a significant influence on reliability.
[H4] Product characteristics will have a significant effect on reliability.
[H5] Customer trust will have a significant impact on customer loyalty.
[H6] Reliability will play a mediating role between system characteristics and customer loyalty.
[H7] Reliability will play a mediating role between product characteristics and customer loyalty.
[H8] The residential area will act as a control between system characteristics and reliability.
[H9] The residential area will have a moderating action between product characteristics and reliability.
[H10] The residential area will act as a moderator between reliability and customer loyalty.
[H11] Purchasing intention will play a moderating role between reliability and customer loyalty.

### 2.2.3 Data collection and Analysis methods

An online survey was conducted to collect data for this study. A total of 267 respondents participated from May 25 to June 20, 2020 for members of the 'greenanum' site, and were used to conduct statistical analysis. The analysis method of this study used the SPSS 22 program. Frequency analysis, descriptive statistical analysis, and exploratory factor analysis identified the distribution and general characteristics of the sample. And multiple regression analysis, mediating effect analysis, and moderation effect analysis were performed to verify the hypothesis.

## 3. Results

### 3.1. Analysis Results

#### 3.1.1. Basic statistical analysis

Frequency analysis was used for demographic characteristics of the sample. First, N=267 people participated, and the gender was 42.7% for men and 57.3% for women. The ages were 42.3% in their 40s, 37.1% in their 30s, and 39 (14.6%) in their 50s. The highest level of education was college graduates with 54.7%, 42.3% of managers/office workers, 29.6% of income level less than 2~3 million won, and 23.2% of more than 5 million won.

A separate frequency analysis was conducted on the attitude of using social economy products. As for the residential area, Gwangju&Jeonnam was the most common with 144 (53.9%), followed by Incheon&Gyeonggi 15%. As for the purchase intention, social economy ethics was 39.6%, product reliability 28.1%, various benefits 25.8%, other easy accessibility, and preference for brand image. The use experience was less than one year, 59.2%, and it was found that there was a promotion effect for recruiting members with the recent site reorganization, and 24.7% for more than 5 years. The average transaction amount was 10,000~30,000 won with 64.4%, and the number of purchases was 1~2 with 69.3%. As for the reason for the low percentage of using the site, the low site awareness was the highest at

61%.

Next, descriptive statistics analysis was performed on the measured variables. As the result values were less than 3 standard deviation, less than 3 absolute skewness, and less than 3 absolute kurtosis, it was confirmed that the individual measured variables had a normal distribution.

### 3.1.2. Validity and reliability evaluation

This study conducted exploratory factor analysis on system characteristics (security, convenience, information), product characteristics, reliability, and customer loyalty to verify the validity of variables. For all measured variables, principle component analysis was used to estimate the constituent factors. In order to simplify the factor loading value, a varimax was adopted, and variable selection was based on an eigenvalue of 1.0 or more and a factor loading value of 0.5 or more.

The total variance explained was 82.66%, and it was extracted as a total of 6 factors. The extracted factors were named as reliability, security, convenience, customer loyalty, information, and product characteristics. It was composed of 4 items for each factor, of which information 4 and product characteristic 1 were removed. The Cronbach's  $\alpha$  value for variables was .716~.950, excluding the product characteristic 4, showing high reliability (Cronbach's  $\alpha > 0.7$ ).

### 3.1.3. Correlation analysis

Correlation analysis was conducted to find out the relationship between variables, and Pearson correlation coefficient was used. According to the results, the correlation was found to be a significant relationship at 0.01 level for all variables. The correlation coefficient with the magnetic variable is always 1 and appears on the diagonal in the matrix table.

## 3.2. Hypothesis test

### 3.2.1. Regression analysis result

For hypothesis testing, multiple regression analysis and simple regression analysis were performed. To carry out regression analysis, the autocorrelation of the dependent variable and the multicollinearity between the independent variables were examined. Durbin-Watson index was used for autocorrelation of the dependent variable, and Durbin-Watson index was 1.949 in multiple regression analysis, and 2.168 in simple regression analysis. The multicollinearity (VIF) between independent variables was 1.387~1.722, less than 10, indicating that there was no multicollinearity. Therefore, this data is suitable for performing regression analysis. Convenience was excluded as a result of multiple regression analysis. The remaining independent variables, security ( $p < 0.001$ ), information ( $p < 0.001$ ), and product characteristics ( $p < 0.05$ ), had a significant effect on reliability ( $p < 0.001$ ). Table 2 shows the test results for the H1~H5 hypothesis in this study.

**Table 2** Results of basic hypothesis test

Hypothesis (Path)	B	SE	$\beta$	t	P	VIF	R <sup>2</sup>	Choice
H1(Security→Reliability)	.413	.054	.457	7.717	***	.716	.341	adopt
H2(Convenience→Reliability)	-.100	.060	.116	-1.670	.096	.522	.341	reject
H3(Information→Reliability)	.205	.058	.221	3.549	***	.650	.341	adopt
H4(Product characteristics→Reliability)	.128	.055	.144	2.322	.021	.653	.341	adopt
H5(Reliability→Loyalty)	.551	.053	.538	10.390	***		.289	adopt

\* $P < .05$  \*\* $p < .01$  \*\*\* $p < .001$

### 3.2.2 Mediated effect test

Baron&Kenny's mediating effect test was performed to find out whether reliability mediates the effect of security, convenience, information, and product characteristics on customer loyalty. Before the parameterization effect test, the autocorrelation of the dependent variable and the multicollinearity between the independent variables were reviewed, and the Derbit Watson index was 1.939, independent without autocorrelation, and the VIF was 1.387~1.722, indicating that there was no multicollinearity. An effect test was conducted.

As a result, information ( $p < .001$ ), security ( $p < .001$ ), and product characteristics ( $p < .001$ ) significantly affected reliability in the first stage. The higher the information ( $B = .240$ ), security ( $B = .423$ ), and product characteristics ( $B = .312$ ), the higher the reliability. The explanatory power of reliability is 32.7%. In step 3,

informationality ( $B=.047, p>.05$ ) and security ( $B=.022, p>.05$ ) were not significant, and the regression coefficient decreased to  $.151 \rightarrow .047, .206 \rightarrow .022$ . It appears that reliability is completely mediated by the impact of information and security on customer loyalty. Since product characteristics have a significant effect on loyalty, reliability is found to partially mediate the effect of product characteristics on loyalty. The results of verifying the mediating effect of the H6~H7 hypothesis are shown in Figure 2.

### 3.2.3 Moderated effect test

A moderation effect test was conducted to find out whether the ethical purchase intention and the residential area control the effects of security, convenience, information, and product characteristics on reliability. Table 3 shows the results of verifying the moderating effect of the H8~H9 hypothesis. In the second stage, where the categorical control variable was introduced, the residential area was added, which significantly increased by 2.1% ( $p<.01$ ), and the overall explanatory power was 36.2%. It was found that residents of Gwangju and Jeollanam-do had a greater influence on reliability than residents of other regions. In the third stage of testing the moderation effect, the coefficient of determination increased significantly by 5.2% ( $p>.01$ ), and it was found that the residential area did not adjust the impact on reliability in terms of security and information, but convenience ( $B=-.050, p<.05$ ) and product characteristics ( $B=.294, p<.01$ ) were found to control the effect on reliability. In addition, convenience, product characteristics, and residential area of the controlling variable have a significant effect on reliability, so the residential area of the controlling variable is a similar controlling variable.

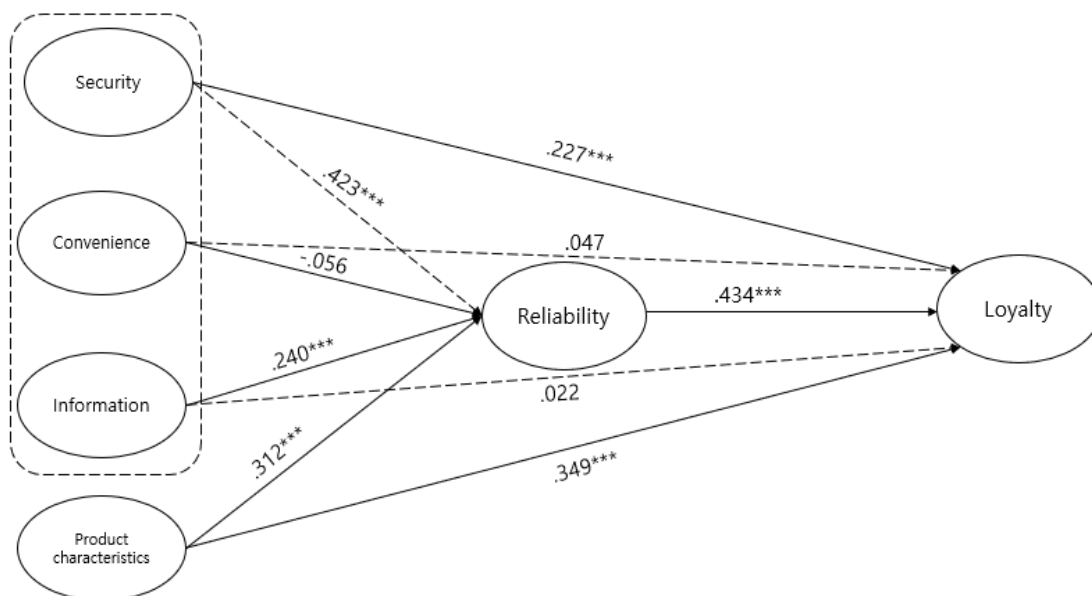


Figure 2 Test result of mediated effect

In addition, it was found that the residential area of the modulating variable has a modulating effect in the relationship between reliability and loyalty. However, in the residential area ( $B=-1.469, p<.001$ ), it was found that the influence of reliability on customer loyalty was controlled in other areas other than the Gwangju-Jeonnam area. The results are shown in Table 4.

Table 3 Test result of moderated effect(Reliability)

	Step1		Step2		Step3	
	B	$\beta$	B	$\beta$	B	$\beta$
(a constant)	3.998		3.882		3.862	
Convenience	-.100	-.116	-.126	-.146*	-.023	-.027
Information	.205	.221***	.207	.223***	.263	.284***
Security	.413	.457***	.461	.511***	.552	.611***
Product characteristics	.128	.144*	.085	.096	-.050	-.056
moderator variable(residential area)			.251	.161**	.251	.161**
Convenience-residential area					-.275	-.199*
Information-residential area					-.206	-.142
Security-residential area					-.130	-.087

Product characteristics-residential area			.294	.233**
R <sup>2</sup> (ΔR <sup>2</sup> )	.341	.362(.021)**	.414(.052)***	
F	33.830***	29.675***	20.144***	

\* p < .05    \*\* p < .01    \*\*\* p < .001  
 Dependent variable : Reliability

The purchase intention of the modulating variable was also found to have a modulating effect in the relationship between reliability and loyalty. In terms of purchasing intention (B=1.478, p<.001), the higher the ethical purchase reason, the higher the influence of reliability and customer loyalty was. The results are shown in Table 5.

**Table 4** Test result of moderated effect(Loyalty)

	Step1		Step2		Step3	
	B	β	B	β	B	β
(a constant)	1.662		1.644		2.235	
Reliability	.551	.538***	.541	.529***	.390	.381***
moderator variable (residential area)			.122	.076	-1.469	-.919***
Reliability-residential area					.395	1.040***
R <sup>2</sup> (ΔR <sup>2</sup> )	.289		.295(.006)		.330(.035)***	
F	107.949***		55.271***		43.145***	

\* p < .05    \*\* p < .01    \*\*\* p < .001  
 Dependent variable : Loyalty

**Table 5** Test result of moderated effect(Loyalty)

	Step1		Step2		Step3	
	B	β	B	β	B	β
(a constant)	1.662		1.690		.689	
Reliability	.551	.538***	.552	.540***	.808	.790***
moderator variable(purchase intention)			-.047	-.026	1.478	.812***
Reliability-purchase intention					-.386	-.907***
R <sup>2</sup> (ΔR <sup>2</sup> )	.289		.290(.001)		.322(.032)***	
F	107.949***		53.947***		41.593***	

\* p < .05    \*\* p < .01    \*\*\* p < .001  
 Dependent variable : Loyalty

According to the above results, the hypothesis test for the mediating effect and the moderating effect is shown in Table 6.

**Table 6** Hypothesis result of moderated effect, moderated effect

Hypothesis		Choice
H6	Security→Reliability→Loyalty	adopt
	Convenience→Reliability→Loyalty	reject
	Information→Reliability→Loyalty	adopt
H7	Product characteristics→Reliability→Loyalty	adopt
H8	Security→Reliability	reject
	Convenience→Reliability	adopt



	Information→Reliability	reject
H9	Product characteristics→Reliability	adopt
H10	Reliability→Loyalty	adopt
H11	Reliability→Loyalty	adopt

#### 4. Discussion

The discussion points of the results of this study are as follows.

First, it was assumed that the systemic characteristics and product characteristics of internet shopping malls that promote and sell products of Jeonnam social economy companies would have a positive impact on customer trust and loyalty, and as a result, the results of previous similar studies were supported.

Second, in the test of the mediating effect of reliability, convenience did not play a mediating role among the systemic characteristics of shopping malls, while information and security played a complete mediating role. Product characteristics were found to be partially mediated.

Third, in the hypothesis test, it was found that the residential area and purchase intention play a controlling role. Among the residential areas, residents of Gwangju & Jeonnam region played a mediating role between trust and loyalty to the Jeonnam social economy shopping mall, and ethical purchase attitude among purchase intentions showed a significant moderating effect between reliability and loyalty, and ethical purchase attitude among purchase intentions showed a significant moderating effect between reliability and loyalty. Therefore, the promotion of shopping malls and products nationwide should increase in order to promote and sell Jeonnam social economy corporate products.

#### 5. Conclusions

This study analyzed the effects of service characteristics of Jeonnam social economy internet shopping malls on customer trust and loyalty, focusing on the mediating effect and the moderating effect. However, this study has several limitations. First, it may be difficult to generalize in the results because the sample is limited to greenanum online members. Second, since greenanum is the only social economy internet shopping mall nationwide, there is also a limit to generalization in areas where comparative studies in other regions are insufficient. In the future, it seems that there should be a comparative study with products in other regions on the offline.

#### 6. Acknowledgements

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