

Causal Model Affecting the Satisfaction of Social Commerce Users in Websites: Mediating Effects of Benefit Factors

¹Seung-Yeob Yu

Abstract: Background/Objectives: The purpose of this study was to investigate the causal relationship between consumers' motivation to use social commerce sites and satisfaction factors of shopping mall satisfaction using social commerce. In addition, this study was to investigate the mediating effects of social commerce benefits on shopping mall satisfaction. **Methods/Statistical analysis:** We conducted research on 340 consumers who had shopping experience on the social commerce site. The data collection method used survey method to distribute the questionnaires to the subjects who had experience using social commerce and to collect the questionnaires. Exploratory factor analysis and confirmatory factor analysis were performed on each scale. In addition, covariance structure analysis was performed to confirm the causal relationship between the variables. Also, Cronbach alpha coefficients were used to confirm the reliability of each scale. **Findings:** The results of this study are as follows: First, social commerce convenience use motive has a significant effect on physical benefits. Second, social commerce economic use motive has a significant effect on price benefit. Third, social commerce economic use motive had a significant effect on physical benefits. Fourth, social commerce economic use motive had a significant effect on shopping mall satisfaction. Finally, price benefit factors had a significant effect on shopping mall satisfaction. **Improvements/Applications:** The results of this study are expected to provide data for establishing a strategy for activating consumer buying behaviors using social commerce sites.

Key words: Social commerce, Usage motivation, Benefit factors, Shopping mall satisfaction, Social commerce activation

I. INTRODUCTION

Since the launch of 'WIPON' in March 2010, the Korean social commerce market has been growing rapidly. The domestic social commerce market is expected to grow steadily, starting with sales of more than 10 billion won in 2010 and growing from 5,500 billion won in 2014 to 8 trillion won in 2015. Also, with the advent of mobile technology, which is a new technology all over the world, online-oriented consumption activities are expanding. In the online market, which is classified as E-commerce market, the social commerce market is growing together with the open market, which is a typical runner. In 2016, the online market size is estimated at 60 trillion won, and the mobile market is expected to reach 33 trillion won. Coupang, Tmon, and Wemap, three of the Korean social commerce companies, developed their business in 2008 based on the unique service method of US Group phone. However, we are dealing with

the market environment changing from the social commerce sales method to the hybrid model strategy that combines open market type and direct sales type[1].

Social Commerce, which showed its first line in Korea in 2010, began to spread word of mouth around local joint purchasing, gradually increasing the range of the region and introducing various cultural products such as industrial products, travel, and culture. This growth in social commerce has become a new shopping channel that threatens the open market. By leveraging mobile content to provide users with the convenience of shopping through applications, the social commerce market is creating a market of 3 trillion won in 2013 [2] and is causing hot issues.

Social commerce runs a marketing strategy called price discount by co-purchasing a specific product. This strategy is characterized by consumers using social network services to promote their products voluntarily and gathering collective buyers, so that companies use them as a marketing strategy tool to promote their products and companies. This means implementing a marketing strategy that can acquire advertising effect by selling differentiated product from existing price by utilizing social commerce of super discount sale method within a limited period in e-commerce without spatial, temporal, and accessibility limitation. Also, social commerce, which is showing various business models and promoting the era of e-commerce, activates e-wallet of electronic payment system digitizing data such as credit card and coupon, and has a lot of meaning from the viewpoint of forming and developing a new consumption culture.

The biggest issue in the online market in recent years is the emergence of social commerce, which means a change in the shopping paradigm. Companies can acquire advertisement effect by selling differentiated product from existing price by utilizing social commerce of super discount sale method within a limited period in e-commerce without limitation of space, time and accessibility. In addition, social commerce, which advertises diverse business models on the corporate side and promotes the e-commerce era in earnest, shows that an unspecified number of consumer form and develop a realistic and smart consumption culture in online purchasing. As such, the emergence of social commerce has given a lot of meaning from the viewpoint of executing business management through online commerce and marketing communication strategy using it.

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Seung-Yeob Yu, Professor, Department of Advertising & Public Relations, Namseoul University, Korea

In this context, this study is concerned with how to use the social commerce for marketing communication of the company, the activation of the social commerce industry, and the satisfaction of consumers who use social commerce in order to activate smart shopping and reasonable consumption of price sensitive consumers Respectively.

The purpose of this study is as follows. First, we examined whether consumers' motivation to use products (social commerce usage motivation) when purchasing products using social commerce site affects satisfaction or benefit (benefit factor) after using social commerce site. Second, we confirmed whether consumers' satisfaction or benefit (benefit factor) after using social commerce site affects shopping mall satisfaction. Third, consumers 'motivation (social motivation for using commerce) when purchasing product using social commerce site affects consumers' satisfaction on using social commerce site. Third, this study confirms whether consumers' motivation (social commerce use motive) when they purchase products using social commerce site affects satisfaction of users of social commerce site. Finally, we investigated which of the factors (psychological, physical, price benefits) influence shopping mall satisfaction more significantly when consumers use social commerce site to purchase.

II. REVIEW OF LITERATURE ON SOCIAL COMMERCE

Research on the characteristics of social commerce mainly used multidimensional variables. For example, Zhou and his colleagues have proposed the business, technology, people, and information variables that should be considered in conducting social commerce research [3]. Seo and Lee suggested five variables of social commerce as usefulness, ease, price, participation, and speed [4]. Ease of use is that most social commerce methods are based on easy, intuitive, and not difficult interfaces. Price means the advantage of low price that is not comparable with existing offline. And participation in social communication provides a variety of means of communication to share the experience of participating in social commerce [5].

Stephen and Toubia, who studied the economic value of social networks in the social commerce market, found that the social commerce market was an independent individual rather than a seller's company, and sellers linked their connections to individual stores. Research shows that linking sellers to each other through hyperlinks creates high economic value. In addition, the value of the network has been confirmed by consumers to increase the accessibility of the store to the market [6].

Kim and An have found four types of consumers: low-priced users, impulsive purchasers, disbelievers purchasers, and convenience-seekers. The results of this study have implications for understanding and predicting consumption behaviors of social commerce consumers [7].

Jeon and Kang conducted empirical studies on consumers' behavioral aspects of social commerce. The results of this study confirm the structural relationship between information quality on the social commerce site and consumer satisfaction and continuous use intention [8]. As a result, it was confirmed that product, customer service, and seller information quality, excluding price information quality, affects consumer satisfaction. In addition, we confirmed that consumer satisfaction with social commerce affects the intention of continuous use. This research implies that the information provided by social commerce is subdivided into commodities, prices, services, and sellers, and a research model that analyzes the quality of information is more important.

Kim and Kim discussed the problems of social commerce and argued that it is necessary to expand the social commerce positively. In addition, they argued that social commerce should be promoted in order to revitalize effective government policy, strengthen national cooperation system, and support user diffusion [7].

As a result of the above studies, the study of social commerce is based on the concept and characteristics of social commerce [9,10], the value of social commerce [11], Social commerce consumer types [6], A study on behavioral aspects of social commerce users [8], Analysis and Activation Policy of Social Commerce [6] and so on.

III. RESEARCH MODEL

The biggest issue in the IT industry in recent years is social commerce. The new social commerce, which is a fusion of existing online shopping and SNS, has various usability and efficiency in terms of consumers, sellers, and contents business and is evaluated as a new business model in the IT market. Consumers can be seen as shopping convenience and low price, sellers can get the effect of spontaneous promotion of consumers, implement marketing strategy with minimum cost, and revitalize contents industry of IT market.

In this context, this study presented a business model of consumer shopping behavior to present the paradigm of shopping business culture and shopping culture of e-commerce. The purpose of this study is to investigate the causal relationship between social commerce usage motives and benefit factors on shopping mall satisfaction in order to establish policies to activate social commerce. In order to achieve these research objectives, the following research model was set up(see Figure 1).

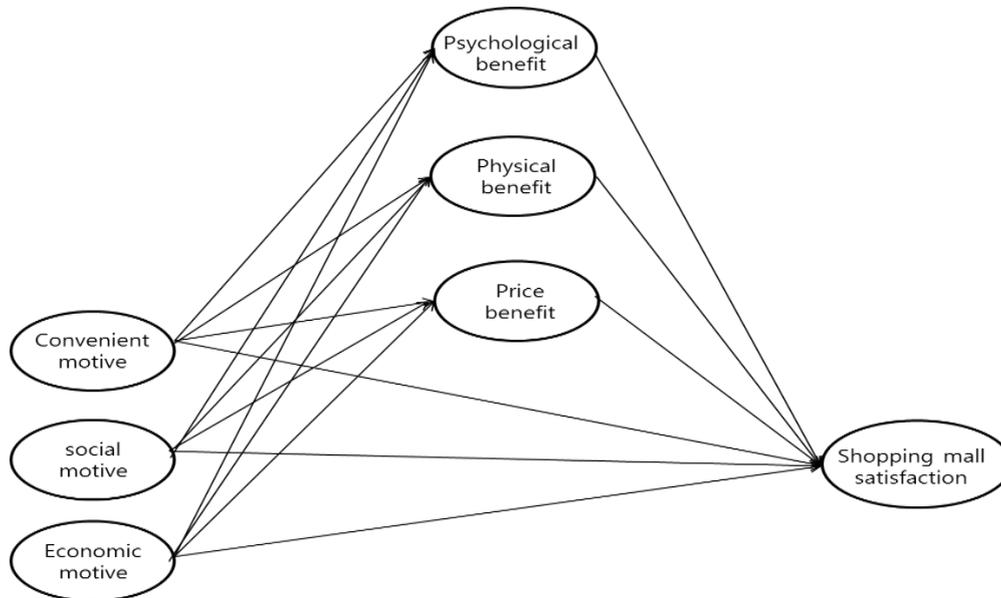


Figure 1. Social Commerce Shopping Satisfaction Causality Model

IV. RESEARCH METHOD

4.1 Respondents

This study was conducted for college students at N university in Cheonan. The total number of participants in the study was 340, and 330 were used for the final analysis except for the unfair questionnaires which were not suitable for data analysis. The data collection method used survey method to distribute the questionnaires to the subjects who had experience using social commerce and to collect the questionnaires. The data collection period was five days from September 11 to 15, 2017.

4.2 Operational definition and measurement tools of variables

4.2.1 Motivation for Using Social Commerce

The motivation for using social commerce generally means the purpose or purpose of shopping using social commerce site [12]. To measure social commerce motivation, we used 18 items developed by Kim [13]. These items were measured by Likert type 5 scale (1 = not important at all, 5 = very important) and 4 factors were found by exploratory factor analysis. The results of the scale were as follows: The convenient motivation had a Cronbach alpha coefficient of .864, the opportunistic motivation had a Cronbach alpha coefficient of .768, the social motivation had a Cronbach alpha coefficient of .767, and the economic motivation Cronbach alpha coefficient is .746, which is interpreted as good.

4.2.2 Benefits of Using Social Commerce

Benefit factors can be defined as meaning satisfaction or benefit consumers experience when shopping using a social commerce site. The scale to identify the benefits of using social commerce is 10 items used by Yu and Kim[14]. These items were measured using the Likert-type 5-point scale (1 point is not so to 5 points very much). Exploratory factor analysis revealed three factors. The results of the reliability analysis are interpreted to be good, with psychological benefits (Cronbach α =.884), physical benefits (Cronbach α =.694), and price benefits (Cronbach α =.808).

4.2.3 Shopping mall satisfaction

Shopping mall satisfaction means consumers' satisfaction

with the coupon or product that they use or purchase from the social commerce site. The three items used in the studies of Kim and Lee were measured using the Likert-type 5-point scale (1 point = not at all, 5 points = very much) [15]. The reliability of the scale was found to be good with Cronbach alpha coefficient of .868.

4.3 Data Analysis

The purpose of this study is to investigate the causal relationship between consumers' motives for using social commerce and satisfaction factors of shopping mall. To do this, exploratory factor analysis and confirmatory factor analysis were performed on each scale. In addition, covariance structure analysis was performed to confirm the causal relationship between the variables. Also, Cronbach alpha coefficients were used to confirm the reliability of each scale.

V. RESULTS

5.1 Validation of validity and reliability

In this study, we examined how much the validity and reliability of each construct were measured before the hypothesis test. First, exploratory factor analysis was conducted to verify the validity of the discriminant validity and construct validity among the variables. The factor analysis method used principle component analysis which is mainly used in the previous studies. The factor rotation was the method of the Varimax rotation which is the right angle rotation method. The KMO measure (kaiser-meyer-olkin) was 0.6 [16] and the commonality value was 0.4 [17].

On the other hand, acceptance criterion of factor loading is usually interpreted as more than 0.3 and 0.4 is generally regarded as a suitable criterion [18]. And it has a very high significance in case of 0.5 or more. Therefore, in the exploratory factor analysis of this study, the standard was applied up to 0.6 or higher for higher significance, and the eigenvalue showing the explanatory power of the variable for the common factor was higher than 1. On the other hand,

Cronbach alpha coefficients were used for the reliability test of all the scales used in the study. The statistical coefficients were tested by adopting Nunnally criterion of 0.7 or higher[19]. As a result of the analysis, 18 items (factor loading=.640~.874, total explanatory variable=58.70%) were found to motivate consumers to use social commerce. Consumers' use of social commerce was 8 items (factor load=.702~.927, total explanation variance=62.30%). The satisfaction level of the shopping mall was found to be a single factor with 3 items (factor load=.813~.877, total explanation variance=72.06%). As a result of the analysis, 18 items (factor loading= .640 ~ .874, total explanatory variable=58.70%) were found to motivate consumers to use social commerce. Consumer benefit factors related to social commerce were 8 items (factor loading=.702~.927, total explanation variance=62.30%). The satisfaction level of the shopping mall was found to be a single factor with 3 items (factor load= .813~.877, total explanation variance=72.06%).

5.2 Confirmatory Factor Analysis

Based on the exploratory factor analysis, confirmatory factor analysis was conducted to verify the validity of the variables used in this study. The results of this study are

Table 1: Model fit of measurement variables

Variables	χ^2	df	p	GFI	AGFI	RMR	NFI	CFI	TLI
Motivation for using social commerce	79.919	41	.002	.962	.940	.047	.915	.961	.947
Benefits of social commerce	48.967	17	.000	.966	.928	.050	.945	.963	.939

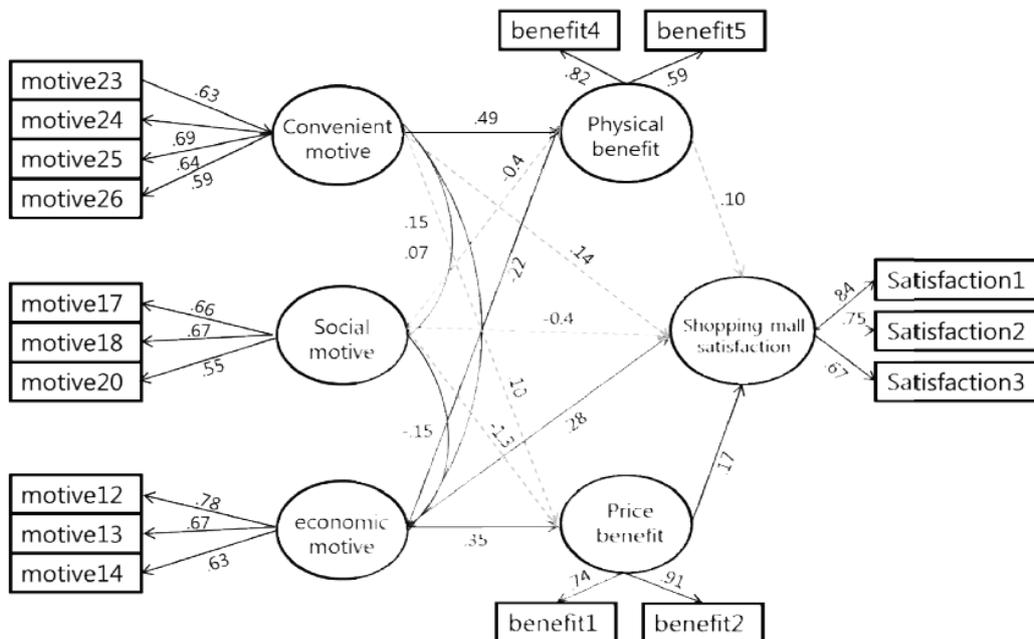
5.3 Hypothesis Testing

5.3.1 Verification of fitness of research model

The results of the study were as shown in Table 2. The fitness indices of the study model were $\chi^2 = 348.718$ (df = 191, p <.000), GFI = .914, AGFI = .886, RMR = .056, NFI = .855, CFI = .927 and TLI = .912 respectively. Therefore, it has been confirmed that it does not meet the acceptance criteria. In order to improve the fit of the research model, this study derives a correction model by removing observation

summarized as follows: First, in all 3 sub - factors that constitute the motive for using social commerce, the standardized loading value is .557 ~ .821, Average Variance Extracted (AVE) is .500 and Construct Reliability is.710. Second, in all 3 sub - factors constituting the beneficiary factor of social commerce, the standardized loading value was .555 ~ .951, Average Variance Extracted (AVE) index was .504, and the Construct Reliability was .725. Finally, since the shopping mall satisfaction level consists of three sub - items, no confirmatory factor analysis was needed and therefore it was not performed in this study. These results show that the standardized load value is 0.5, Average Variance Extracted (AVE) is 0.5, and Construct Reliability is 0.7. Therefore, the measurement items used in this study can be considered to have a centralized validity of the research concept [20,21,22]. In addition, the model fit of the research concept through confirmatory factor analysis is shown in <Table 1>, and it has been confirmed that it satisfies the acceptance criteria of the overall acceptance [23].

variables of measurement error with large modification index. The measured variables that are removed are the measurement items of one variable that constitute the convenience motive. In addition, psychological benefits were removed for benefit factors, One item constituting the physical benefit was deleted. Table 2 shows the results of the verification of the fitted modified models by removing the measurement variables that reduce the fitness by using the modification index.



✖The solid line (-) represents the adopted hypothesis, and the dotted line (---) represents the rejected hypothesis.

Figure 2. Modified model



Table 2: Comparison of the fit between the research model and the modified model

Model	χ^2	df	p	GFI	AGFI	RMR	NFI	CFI	TLI
Research model	348.718	191	.000	.914	.886	.056	.855	.927	.912
Modified model	149.383	105	.003	.949	.926	.036	.905	.969	.960

The fit coefficients of the modified models were $\chi^2 = 149.383$ (df = 105, p < .003), GFI = .949, AGFI = .926, RMR = .036, NFI = .905, CFI = .969 and TLI = .960. It was confirmed that the fit of the model was improved overall and satisfied the acceptance criteria. Therefore, this study adopts the revised model extracted through the above revision process and derives the revised model as shown in <Figure 2> for hypothesis verification.

5.3.2 Hypothesis Verification

First, the validity of the discriminant validity between the constructs of the modified model was verified before the hypothesis test. The results are shown in Table 4. The validity of the discriminant validity was compared with the square of

the correlation coefficient between the mean variance extraction index and the constitutional concept of each construct. As a result, the Average variance extraction index (AVE) of each construction concept was .500. And the maximum value of the correlation coefficient between the constituent concepts of each pair is larger than .498. Therefore, it is confirmed that there is no problem in the validity of this study. Table 3 shows the correlation between the constitutional concepts and Table 4 shows the comparison results.

Table 3: Correlation between the constructs of the final model

constructs	Convenient motive	Social motive	Economic motive	Physical benefits	Price benefits	Satisfaction of use
Convenient motive	1	.323***	.150**	.295***	.056	.198***
Social motive	.323***	1	-.105	.170**	-.107	-.009
Economic motive	.150**	-.105	1	-.099	.316***	.303***
Physical benefits	.295***	.170**	-.099	1	.140*	.133*
Price benefits	.056	-.107	.316***	.140*	1	.267***
Satisfaction of use	.198***	-.009	.303***	.133*	.267***	1

***p<.001

Table 4: Construct validity of the final model

Construct	Average variance extraction(AVE)	Correlation range	Correlation squared
Convenient motive	.501	.364~ .485	.124~ .235
Social motive	.520	.376~ .458	.141~ .210
Economic motive	.551	.411~ .541	.164~ .293
Satisfaction of use	.582	.513~ .645	.263~ .413

After confirming the validity of the discriminant validation, the hypothesis test proposed in this study was conducted. The results are shown in <Figure 2> and <Table 5>. First, Hypothesis 1 'Consumer's motivation to use convenience to social commerce will affect the perception of physical benefits'. As a result, the standardized path coefficient between the two variables was .384 (t=3.800, p<.001). Therefore, it was confirmed that convenience motivation had a positive effect, so Hypothesis 1 was supported. As a result of hypothesis 2, 'Consumer's motivation to use convenience for social commerce will affect the perception of price benefit', the standardized path coefficient between two variables was .076 (t=1.182, p>.05). Therefore, Hypothesis 2 was rejected.

As a result of hypothesis 3, 'the consumer's motivation to

use social services in social commerce will affect the perception of physical benefits', the standardized path coefficient between two variables is -.060 (t=-.469, p>.05). And it was confirmed that it did not have a meaningful effect, so Hypothesis 3 was rejected. As a result of hypothesis 4, 'Consumer's social use motive for social commerce will affect price perception', the standardized path coefficient between two variables is -.171 (t=-1.520, p>.05), But did not have a significant effect. Therefore, Hypothesis 4 became the basis.

Hypothesis 5: 'Consumer's motivation for economic use of social commerce will affect price benefits'. As a result, the standardized path coefficient between the two variables was .393 (t=4.551, p<.001). Economic use motives had a positive effect.

Therefore, Hypothesis 5 was supported. As a result of hypothesis 6,



'Consumer's motivation for economic use of social commerce will affect perception of physical benefits', the standardized path coefficient between two variables is $-.258$ ($t=-2.518, p<.01$). It was confirmed that it had a meaningful effect, so Hypothesis 6 was supported.

Hypothesis 7: 'Consumer's motivation to use social commerce for shopping mall will affect shopping mall satisfaction'. As a result, the standardized path coefficient between two variables was $.093$ ($t=1.425, p>.05$), and convenience motivation did not have a significant effect. Therefore, Hypothesis 7 was rejected. As a result of hypothesis 8, "The social use motive for the social commerce of the consumers will affect the satisfaction of shopping mall use". As a result, the standardized path coefficient of the two variables is $-.049$ ($t=-.508, p>.05$). Social motivation was not found to have a significant effect, so Hypothesis 8 was

rejected. Hypothesis 9 indicates that the consumer's motivation for economic use of social commerce will have an effect on shopping mall satisfaction. As a result, the standardized path coefficient between two variables was $.267$ ($t=3.265, p<.001$). Economic motivation was found to have a significant effect, and Hypothesis 9 was supported.

Hypothesis 10 indicates that the perceived physical benefits of the social commerce of consumers will have an effect on the shopping mall user satisfaction. As a result, the standardized path coefficient between the two variables was $.085$ ($t=1.264, p>.05$), and physical benefits did not have a significant effect. Therefore, Hypothesis 10 was rejected. Hypothesis 11 showed that 'the price benefit of consumers on social commerce will affect shopping mall usage satisfaction'. As a result, the standardized path coefficient between two variables was $.150$ ($t=2.430, p<.01$), and price benefits were found to have a significant impact, so Hypothesis 11 was supported.

Table 5: Hypothesis Test Results

Hypothesis	Path	Path coefficient	Standard error	t	p	Hypothesis Verification
Hypothesis 1	Convenient motive→Physical benefits	.384	.101	3.800	.000	Accept
Hypothesis 2	Convenient motive→ Price benefits	.076	.064	1.182	.237	Reject
Hypothesis 3	Social motive→ Physical benefits	-.060	.127	-.469	.639	Reject
Hypothesis 4	Social motive→ Price benefits	-.171	.112	-1.520	.128	Reject
Hypothesis 5	Economic motive→ Price benefits	.393	.086	4.551	.000	Accept
Hypothesis 6	Economic motivation→ Physical benefits	-.258	.102	-2.518	.012	Accept
Hypothesis 7	Convenient motive→ Satisfaction of use	.093	.065	1.425	.154	Reject
Hypothesis 8	Social motive→ Satisfaction of use	-.049	.096	-.508	.611	Reject
Hypothesis 9	Economic motivation→ Satisfaction of use	.267	.082	3.265	.001	Accept
Hypothesis 10	Physical benefits→ Satisfaction of use	.085	.067	1.264	.206	Reject
Hypothesis 11	Price benefits→ Satisfaction of use	.150	.062	2.430	.015	Accept

VI. CONCLUSION AND DISCUSSION

As smartphones become popular, new forms of marketing have emerged. This flow has been fused with the existing e-commerce as the social network service has exploded and created a new paradigm called social commerce. The purpose of this study is to clarify the factors that should be taken into consideration in order to activate shopping behavior using social commerce. In other words, this study sought to clarify the causal relationship between consumers' motivation to use social commerce sites and satisfaction or benefit factors of shopping commerce satisfaction.

In this study, 11 research hypotheses were set up. <Hypothesis 1> Consumers' convenience motivation to use social commerce affects perceived physical benefits, and <Hypothesis 5> Consumers' motives for economic use of social commerce affect the perception of price benefits, and <Hypothesis 6> Consumers' motivation for economic use of

social commerce affects the perception of physical benefits, and <Hypothesis 9> Consumers' motives for economic use of social commerce affect shopping mall satisfaction, and <Hypothesis 11> Consumer price perception affects shopping mall satisfaction. Only these hypotheses were adopted with statistically significant results. The results and implications of this study are summarized as follows.

First, hypotheses were tested on whether consumers' convenience motivation to use social commerce on physical benefits perceptions was statistically significant. It was confirmed that convenience motivation had a positive effect. This is interpreted as a high perception of physical benefits during shopping through social commerce sites, where convenience is an important motive when consumers use social commerce. The results of this study support the contents of previous research.



Second, if consumers are motivated or motivated to shop within a social commerce site for economic reasons, the price benefit perception is high,

whereas physical benefit perception has the opposite direction. In addition, consumers who use social commerce sites are more satisfied with shopping behavior because of economic motivation. These results suggest that the causal variables that most strongly explain the shopping behavior of consumers using social commerce can be interpreted as economic motivation. Therefore, there is a need to be considered as a top priority when developing a policy to activate social commerce shopping behavior in the future.

Third, the more consumers feel the price benefits during social commerce shopping, the higher the satisfaction of shopping use. Therefore, emphasizing the price benefits of social commerce shopping tribe will provide a basis for the importance of shopping satisfaction. These results are interpreted as consumers' consideration of economic motivation and price benefit because shopping behavior using social commerce is still at an early stage. However, convenience motivation is also an important factor in the important social commerce use behavior. Therefore, it is necessary to find another cause or motivation factor in the future.

The results of this study are valuable in that it shows the factors that should be considered in activating the shopping behavior using social commerce and the causal relationship between these factors. Especially, it suggests that marketing strategy that emphasizes economic motivation and price benefit is necessary in the early stage of social commerce use behavior. However, in order for social commerce shopping behavior to enter the development stage, it is necessary to identify other influencing factors in the future.

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