

*Full Length Research Paper*

# **The influence of structural changes in a local commercial district on local consumer consumption behavior in South Korea: Using the multinomial logit model**

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**This research determined how structural changes in local commercial districts influence local consumer behaviors. First and foremost, to investigate structural changes to commercial districts around South Korean traditional markets, we conducted a correlation analysis by examining changes in population and in employee numbers, by market type. We then analyzed local consumers' consumption behaviors by using the multinomial logit model. Analytical results indicated positive correlations among the population, employee numbers in businesses in traditional markets, and employee numbers in other businesses in South Korea. According to analytical results vis-à-vis consumer behaviors, the most influential variable is the physical characteristics of the traditional markets; the government support most desired by the merchants in the traditional market, is a measure that seeks to improve the market environment and modernize the facilities within traditional markets in South Korea. The most urgent policy in revitalizing traditional markets is that which will improve the convenience of using those markets. There are several reasons as to why consumer use of traditional markets in South Korea has been in decline, and so, merchants and local consumers should establish self-rescue plans for revitalizing traditional markets; the government and the national and/or local level should support and promote such plans.**

**Key words:** Commercial district, consumer behavior, multinomial logit model, traditional market.

## **INTRODUCTION**

Traditional markets have existed for millennia and, historically, ensured that the residents of towns and cities had access to affordable and fresh food and other commodities (NABMA, 2009). Today's traditional markets offer economic opportunities for aspiring entrepreneurs; it is a place for the community to meet and enjoy, and an industry at the forefront of good environmental practice (The UK Department for Communications and Local Government, 2010). The traditional markets have acted as a key source of retail innovation, creating many of today's multinational retailers, such as the British grocery retailer Tesco. However, in South Korea, traditional markets have dwindled due to the proliferation of certain outlets, including large supermarkets and internet shopping malls. Andrew and Alan (2010) point out the

reasons for a decline in the fortune of traditional markets; the continued growth of supermarkets' market share, the rise of the internet as a forum of exchange for both customers and traders, and the rise of discounters in non-food sectors. Since opening the distribution market in 1996, the internal and external conditions surrounding the traditional markets in South Korea have changed significantly; examples include franchises of large distributing retailers, the appearance of new types of business, the rapid growth of e-business, and changes in consumers' purchasing behaviors. Along with income and lifestyle improvements, these changes have borne significant influence on the traditional market. During the transition, new types of business, such as discount stores, convenience stores, internet shopping malls, and the like,

have rapidly proliferated, whereas, most of the traditional markets have been in gradual decline as they fail to respond effectively to internal and external environmental changes.

The South Korean government is making diverse efforts to promote the modernization of traditional markets and balanced growth within the distribution industry; one key effort has been to enact and enforce 'the Special Act for Nurturing Traditional Markets and Shopping Districts' (2004) to strengthen the competitiveness of traditional markets. The metropolitan council and other local governments in South Korea are also making diverse efforts to revitalize the traditional markets under their control. However, despite the central and local governments' provision of policies that look to revive traditional markets, those markets continue to decline. Although the South Korean government's support project for revitalizing traditional markets is being promoted as a principal part of the policy for nurturing small- to middle-sized distributors, outcomes thereof have been unsatisfactory. The effects of the existing measures in revitalizing traditional markets have been limited to facility-modernization or management-modernization projects, but because foregoing policies have been ineffective, a relatively effective measure is required to revitalize traditional markets. To resolve this problem, changes in the overall conditions of and around traditional markets should be analyzed scientifically and systematically, to establish a strategic measure for nurturing South Korea's traditional markets. Moreover, the main causes for their decline should be analyzed to produce alternative means by which to strengthen the competitiveness of those traditional markets.

The research process and methodology of the current study are detailed further. The main drivers of consumption behavior were selected, based on existing research and related literature, and data were collected via a survey that had been conducted with local consumers, traditional market customers, and traditional market merchants within the selected regions. In cases where spatial information - distances and the like - was unobtainable via the survey, a geographic information system (GIS) was used. To analyze consumption behavior among local consumers, the probability of use by market type, including the traditional market, was analyzed by using the multinomial logit model.

## LITERATURE REVIEW

### Consumption behavior theory

A consumer is a person who purchases goods and service supplied by other people for use in daily life; the concept of a consumer mirrors the concept of a business. Scholars have variously defined the concepts of "consumer" and "consumer behavior." Burk (1967) defines

"consumer behavior" as including all the activities related to the processes of selecting and using goods and services. Engel and Blackwell (1982) define "consumption" as the behavior of an individual who obtains and uses economic goods and services, and it includes the decision-making process that takes place prior to action. Runyon (1980) emphasizes that "consumer behavior" involves planning, purchasing, and using behaviors related to the purchase of economic goods and services.

Consumption behavior theory can be divided into two areas; general consumption behavior theory and irrational consumption behavior theory. First, with general consumption behavior theory, consumption behavior involves consumption size, consumption structure, and the use of belongings, among other factors. In general, consumption behavior theory is a focus on regular income; nonetheless, Keynes (1936) asserts that consumption level depends on one's absolute (that is, current) level of income. Keynes's "absolute income hypothesis" asserts that consumption is affected by one's income level, regardless of others' income levels; if income rises, consumption will rise, and if income decreases, consumption will revert to original levels. In other words, Keynes believes that consumption is determined by one's current income level, rather than by one's past or anticipated income. General consumption behavior theory focuses on factors other than income - including different theories that have arisen as the concept of "income" has expanded - and so, it is possible to assume that consumption can be determined by factors other than income level.

There are a number of factors other than income level that one can consider, which are detailed further. First, there is the influence of socioeconomic characteristics, such as education level and customs regarding consumption expenditure. Second, there are factors related to the influence of psychological factors, such as the intention to purchase, and preferences and the like, regarding consumption expenditure. Third, there are system factors such as health insurance systems, the minimum wage system, and the like; consumption behaviors tend to change as reforms to, and improvements in these systems take place. Finally, there are monetary factors such as changes in income level, interest rates, and the like, that influence consumption changes.

### Previous research

In terms of its similarities to the current study research, previous research can be divided into two categories. One category includes research that proposes to measure the revitalization of declining traditional markets through material research, case analyses, and surveys. The other category includes research that analyzes

consumer behaviors.

In research into measures for revitalizing traditional markets, researchers have analyzed the causes of the decline of traditional markets and suggest measures that can help reverse that decline. Traditional markets, in serving a local distribution function, offer opportunities to retailers and customers to trade products directly; not only do they vitalize the local economy by attracting domestic and foreign shopping tourists as a source of tourism, they also maintain the community by providing leisure and cultural spaces to residents in the area (Ibrahim and Leng, 2003; Kim et al., 2004). Some studies show that consumers consciously seek out unique merchandise from a wide variety of merchants in a traditional market, rather than from modern department stores (Brennan and Lundsten, 2000; Nobel et al., 2006). Kim et al. (2004) show the importance of markets vis-à-vis the social fabric of the community, citing physical redevelopments in Dongdaemun, a 100-year-old traditional marketplace in South Korea that has revitalized the support and conservation of merchant organizations. Lee et al. (2008) show that traditional markets are considered important places in China for the trade of medicinal plants, and so, those markets play a social role by facilitating, at the local level, exchanges among different cultural and social groups of traditions regarding the use of herbal medicines.

A number of previous studies analyze consumer behavior and come to some worthwhile conclusions. Customers can purchase the same products at a lower price in one place called a "traditional market," using information obtained from traditional market retailers (Nobel et al., 2006). Shin (2005) analyzes changes in consumer behavior, by income level, in Seoul; that study analyzes the trade-off between the travel time spent for shopping and the characteristics of the central place. Ahn (2005) establishes and verifies a purchasing-choice model, by commercial facility that examines the purchasing choices and shopping behaviors of consumers. Kim (2006) meanwhile, analyzes the correlation between dependent variables and the locational decision factor variable by examining the multicollinearity among the locational decision factor variables, with the endpoint of analyzing consumers' use of large stores; this behavior is denominated in terms of consumer characteristics. Choi (2007) suggests an operation strategy for large discount stores, introducing the generalized model after taking into account both the buyer's behavior in large discount stores and his or her consumption behavior. Lee et al. (2009) suggest a measure for revitalizing traditional markets; they look at the inconvenience inherent in shopping in traditional markets, by examining consumer satisfaction data captured through a survey and by making relevant comparisons of large discount stores and traditional markets. Goldman and Hino (2005), whose study is based on research conducted with a minority group, suggest that product freshness, cultural factors, accessibility, and certain other factors influence a

consumer's selection of supermarket versus traditional retail shop use. Studies related to traditional market revitalization measures suggest that policies be implemented that consider local characteristics; studies related to consumer behavior analysis meanwhile, have promoted analysis models that are becoming increasingly elaborate and scientific, giving rise to estimation methods that are more systematic.

## EMPIRICAL ANALYSIS

### Selection of regions for analysis

Regions with fast-growing populations - and hence rapid changes in urban spatial structure - are more suitable foci of consumption behavior analysis than regions showing signs of stagnation. Today, modern cities are changing much more quickly than they did in the past, but the rate of growth need not be reflected in the analysis. Moreover, in macroscopic aspects, certain environmental changes such as the urban spatial structure now have a stronger influence on consumption behavior than they have had in the past. For the current study, we selected sample regions via the four-step process detailed further.

In Step I, we analyzed changes in urban spatial structures. We selected regions where the populations have increased by more than 30% between 1993 and 2008; those regions included cities (si), counties (gun), boroughs (gu), and other areas where there are traditional markets. We chose to observe population changes in this 15-year period because many new cities, including the first new cities in the capital area, were developed and constructed nationwide in the early and mid-1990s and the populations of those cities rapidly increased. In Step II, we selected regions where the numbers of businesses in traditional markets had increased; we did this in order to analyze both the structural changes in the commercial districts surrounding the traditional markets, and the types of businesses found in those traditional markets. In most cases, retail stores were mainly located in traditional markets. Increases in the consumer use of such business types are highly likely to be directly related to population increase; therefore, in such cases, we can also examine changes in spatial structure. For the analysis of structural changes to the commercial districts surrounding the traditional markets, we examined cases in which the numbers of businesses had increased between 2002 and 2007, using the five-digit sub-classification codes of the Korea Standard Industrial Classification (KSIC). In Step III, we selected regions with fast-growing markets that compete with traditional markets; in order to revitalize themselves, traditional markets must be able to hold "hold their own" in competition with other, competing markets. Accordingly, regions in which there are high growth rates among these other, competing markets are in greatest need of traditional-market revitalization. The growth rates of other markets that compete with traditional markets were analyzed on the basis of the number of businesses in each of the following categories; large discount stores, online stores, and other types of businesses. In Step IV, we researched the general characteristics of traditional markets; the revitalization policies of the central government, local governments, and the markets themselves; and those regions selected in Step II that have shown a high level of performance. With respect to the revitalization policies themselves, the study analyzed the number of facility-modernization projects and management-modernization projects, by converting data concerning performance into figures that pertain to the total building floor area of the traditional market; this allowed us consider the size of the traditional market. The general characteristics of traditional markets were analyzed with an eye to the size of the commercial district, the existence of markets, and what type of markets were involved. Also, the revitalization

policies for traditional markets were analyzed while considering the formation of merchants' clubs, and the progress of both facilities and management modernization, among other things. Through this process, the study selected four sample regions; it also set a reference region against which it could compare and contrast the sample regions.

### Analysis of the consumption behavior of local consumers

The study conducted an analysis of the probability of consumer use by market type of local consumers, in order to analyze consumption behavior; it also analyzed the competitiveness of the traditional markets, based on those results. Especially, the study examined the probability of consumer use by market type, depending on changes among the factors (that is, independent variables); it did so by analyzing elasticity in the probability of the independent variables. Through this process, the study sought an effective policy that would increase the probability that consumers would use traditional markets. It analyzed the probability of consumer use, by market type and among local consumers, using the multinomial logit model of probabilistic choice models. It secured the necessary data by conducting surveys and collaborating with a trustworthy research center.

### Multinomial logit model

The probabilistic choice model is a model used to determine the functional relationship between a selection of products chosen by consumers and the characteristics of the stores through which consumers select those products. The multinomial logit model was used in the consumption behavior analysis of this research, because there are more than two types of market from which consumers can choose. The probabilistic choice model is based on probabilistic utility theory, which assumes that the main decision maker selects the most useful alternative, based on choice behavior theory. This theory was first suggested by Luce (1959) and then theoretically developed and systemized by McFadden (1981). Recently, it has been widely used in selecting products, residential location, and house type.

### Data and variables

The study obtained the data needed for the analysis by conducting a survey with local consumers. The survey was conducted for 10 days (December 2<sup>nd</sup> to 11<sup>th</sup>, 2009), during which time, the surveyors individually visited stores in traditional markets and executed individual interviews. In all, 423 people respondents took part in the survey: 136 people in Goyang city, Gyeonggi province; 107 people in Gumi city, Gyeongsangbuk province; 105 people in Gimhae city, Gyeongsangnam province; and 75 people in Gangneung city and Gangwon province. The dependent variable used in the analysis of local consumers' consumption behaviors was the number of visits by market type. It would have been reasonable to set the expenditure as the dependent variable, but as many respondents had not answered survey questions related to expenditure, the number of visits by market was used instead. Independent variables were selected through the use of precedent studies and related literature searches.

For the consumption behavior analysis, we categorized the factors that influence consumption behavior; consumers' socioeconomic characteristics, psychological factors, goods price factors, market's physical characteristics, and system factors. For the socioeconomic factors, referring to Oh et al. (2005), the study set as variables, the number of vehicles owned and the average monthly income, each of which has a direct influence on consumption

behavior. For the psychological factors, referring to Lee et al. (2009) and Kim (2005), we set purchase amount, product price, quality, diversity, and overall satisfaction as the consumer satisfaction variables. The physical characteristics by market comprise the characteristics of traditional markets and large discount stores. Since this research is based on an analysis of consumption behavior while focusing on traditional markets, it is natural to select the characteristics of the traditional markets as the variable, whereupon it is also necessary to select as a variable the characteristics of large discount stores that are in direct competition with traditional markets. It includes the variables such as the travel time between a residence and each type of markets, the number of stores and parking capacity of a traditional market, the distance between a residence and a large discount store or a traditional market, the area of a large discount store, etc.

Finally, as system factors, the study selected policy variables related to traditional markets; the amount of training for merchants, the amount of advertising, arcade installation, overall deterioration assessment, acceptance of credit cards as payment, and others.

The study determined the variables by using a diversity of data sources. For the socioeconomic and psychological factors, it conducted a bespoke survey; for the physical characteristics, it used internal data from the Agency for Traditional Market Administration and from GIS spatial analysis. Internal data from the Agency for Traditional Market Administration were used as system-factor variables. Table 1 outlines, in tabular form, these aforementioned variables.

## ANALYTICAL RESULTS

### Results of estimated coefficient

For the estimated coefficients, we set the "other market" as the reference market for the four markets, and we estimated the coefficients, by independent variable, of other types of markets against the other market as the independent variable changed. The study also examined the difference between the other market and the counterpart market, and differences from the other markets. It set the other market as the reference group because it was judged as the least influential market with respect to the decline of the traditional markets; we estimated the coefficients, by independent variable, of large discount stores and online stores, both of which compete directly with traditional markets.

The estimated coefficients that were meaningful from a traditional market perspective are detailed further, and shown in Table 2. Among the psychological factors, with higher purchase amount satisfaction from the traditional markets, the coefficient of the traditional market was found to be 0.012. This finding implies that South Korean consumers tend to use traditional markets more frequently; they less frequently use large discount stores (-0.008) and online stores (-0.003). An increase in purchase amount satisfaction among the large discount stores was found to increase the use of all types of markets; whenever the purchase amount satisfaction with all types of markets increased, the frequency of use of traditional markets and online stores also increased, whereas, that of the large discount stores decreased. An increase in product price satisfaction by market type



Figure 1. Four selected South Korean regions for analysis (denoted by circles).

indicated a higher satisfaction with traditional markets; the coefficients of the traditional market and the large discount stores were 0.027 and 0.090, respectively, whereas the coefficient of the online stores was -0.111. With higher product price satisfaction with large discount stores, the frequency of use of large discount stores (0.014) increased, but the frequency of use of traditional markets (-0.268) and online stores (-0.029) decreased. With higher product price satisfaction with online stores and other markets, the coefficient of the traditional market was -0.288 and -0.112, respectively, which means that consumers less frequently used traditional markets. In terms of quality satisfaction, when there was high satisfaction with online stores, the coefficient of the traditional market was -0.007, indicating that consumers were using traditional markets less frequently. It was estimated that an increase in quality satisfaction with respect to other markets increased the tendency to use the traditional market. The higher the overall satisfaction with the traditional market, the more frequently consumers used the traditional market (0.588). The higher the overall satisfaction with the large discount stores and online stores, the fewer the number of consumers who will use traditional markets.

In terms of physical characteristics, when it takes a consumer a long time to travel from a residence to the traditional market, the coefficient of the traditional market was estimated to be -0.033; this is a statistically significant result. This implies that a long travel time decreases the frequency of use of traditional markets; on the other hand, it tends to increase the frequency of use of either large discount stores or online stores.

In the physical characteristics, the longer it took for a consumer to travel from the residence to a traditional market, the coefficient of the traditional market was estimated to be -0.033 in the significance level of 0.001%, and that indicated a drop in frequency of using the traditional but an increase in frequency of using large discount stores and online stores. The more highly concentrated the stores in the traditional market were, the more likely consumers were to use the traditional market (0.020) - in which case, the use of large discount stores (-0.024) and online stores (-0.119) decreases. In cases where the parking capacity of the traditional market was for fewer than 30 vehicles, the estimated coefficient was -0.226; such a lack of parking at traditional markets decreases the frequency of use of traditional markets, but it increases the frequency of use of large discount stores

**Table 1.** Variables affecting the consumption behaviors of local consumers.

Variable	Description	Remark	Source
Dependent variable	Number of visits, by market type		Survey
Independent variables			
Psychological factors	Purchase amount satisfaction Product price satisfaction Quality satisfaction Product diversity satisfaction Overall satisfaction	Very dissatisfied: 1 Dissatisfied: 2 Average: 3 Satisfied: 4 Very satisfied: 5	Survey
Physical characteristics	Time taken Number of stores in traditional market Parking capacity of traditional market Distance between large discount store and traditional market Area of large discount store	≤30 units: 0 ≥30 units: 1 ≤2 km: 0 ≥2 km: 1	Survey Related literature Related literature GIS analysis data Related literature
System factors (Traditional market policy variable)	Amount of training for merchants Amount of advertising Arcade installation Overall deterioration Acceptance of credit cards	No: 0 Yes: 1 Very poor (1) to excellent (5)	Related literature Related literature Related literature Related literature
Socioeconomic factors	Number of vehicles owned Average monthly income	None: 0; 1 vehicle: 1; >2 vehicles: 2	Survey Survey

and online stores.

In terms of socioeconomic factors, individuals with more than two vehicles tend to use traditional markets and other markets less frequently, and consumers with higher average monthly incomes are highly likely to use other markets.

### Comparison of analyzed regions and the reference region

The study compared the consumption behaviors of local consumers in Gangneung city, the reference region, with those of the analyzed regions; the results are discussed thus: The variables with respect to the psychological factors showed few differences, but the analysis indicated

that product price satisfaction with the traditional markets in Gangneung city did not influence the number of times the traditional markets were used. In this respect, Gangneung city was different from the other regions; even when the time spent in traveling to the traditional market or the average monthly income increased, local consumers were highly likely to use traditional markets in Gangneung city. The other regions showed negative (-) estimated coefficients for the two variables, whereas Gangneung city had positive (+) estimated coefficients. The variable that was found to most directly influence consumption is travel distance; it is also a generally accepted fact that consumers tend to purchase high-price products at a store as income increases. However, Gangneung city, the reference region, showed results that ran counter to these generally accepted correlations.

**Table 2.** Coefficient value and level of significance by variable (integration of sample regions).

Classification	Variable	Traditional markets		Large discount stores		Online stores		
		Coefficient value	P-value	Coefficient value	Level of significance	Coefficient value	Level of significance	
Psychological factors	Purchase amount satisfaction	Traditional markets	0.012	0.001	-0.008	0.033	-0.003	0.364
		Large discount stores	0.005	0.073	0.010	<.0001	-0.005	0.007
		Online	-0.024	<.0001	-0.012	<.0001	-0.015	<.0001
		Other	-0.001	0.040	0.000	0.896	0.001	0.067
		Total (of types of markets)	0.094	0.001	-0.038	0.088	0.128	<.0001
	Product price satisfaction	Traditional markets	0.027	0.776	0.090	0.201	-0.111	0.074
		Large discount stores	-0.268	0.006	0.014	0.853	-0.029	0.663
		Online	-0.288	0.001	-0.066	0.281	-0.132	0.017
		Other	-0.112	0.001	-0.111	<.0001	-0.088	0.000
	Quality satisfaction	Traditional markets	0.151	0.112	0.007	0.918	0.077	0.211
		Large discount stores	0.226	0.032	0.104	0.192	-0.066	0.362
		Online	-0.007	0.936	-0.128	0.047	-0.144	0.013
		Other	0.033	0.508	-0.023	0.529	0.081	0.014
	Product diversity satisfaction	Traditional markets	-0.032	0.663	0.006	0.915	0.103	0.036
		Large discount stores	0.227	0.026	-0.036	0.659	0.299	<.0001
		Online	-0.244	0.004	-0.302	<.0001	-0.337	<.0001
		Other	-0.055	0.177	0.033	0.288	-0.018	0.506
	Overall satisfaction	Traditional markets	0.588	<.0001	0.010	0.882	0.016	0.785
		Large discount stores	-0.476	0.000	0.081	0.411	-0.153	0.081
		Online	-0.125	0.176	-0.111	0.124	-0.062	0.335
Other		0.075	0.096	0.046	0.188	0.058	0.064	
Physical Characteristic	Time taken	Traditional markets	-0.033	<.0001	0.002	0.612	-0.007	0.023
		Large discount stores	-0.016	0.041	-0.016	0.005	-0.004	0.388
		Other	0.002	0.163	0.001	0.219	0.001	0.126
	Number of stores in traditional market		0.020	0.693	-0.024	0.465	-0.119	<.0001
	Parking capacity of traditional market (<30 vehicles)		-0.226	0.698	0.472	0.277	0.652	0.086

**Table 2.** Contd.

Physical Characteristic	Distance between a large discount store and a traditional market ( $\leq 2$ km)	-0.009	0.936	-0.071	0.298	-0.146	0.017
	Area of a large discount store	0.000	0.048	0.000	0.210	0.000	0.176
System factors (Traditional market policy variable)	Number of trainings for merchants	-0.403	0.251	0.163	0.513	0.415	0.058
	Number of advertising	-0.631	0.149	0.268	0.402	0.097	0.730
	No arcade	-0.029	0.828	0.031	0.776	0.034	0.722
	Overall deterioration	-0.156	0.011	0.027	0.507	0.051	0.165
	Credit card no accepted	-0.398	0.054	0.129	0.378	0.173	0.181
Socioeconomic factors	Number of vehicles owned (>2 vehicles)	-0.077	0.236	-0.020	0.688	-0.044	0.313
	Average monthly income	0.008	0.854	0.056	0.065	0.019	0.472

**Table 3.** Probability of consumer use, by market type.

Region	Traditional markets	Large discount stores	Online	Other	Total
Total of analyzed regions	0.044	0.275	0.515	0.167	1
Goyang city	0.028	0.267	0.480	0.225	1
Gumi city	0.173	0.286	0.323	0.217	1
Gimhae city	0.076	0.175	0.547	0.203	1
Gangneung city	0.075	0.282	0.417	0.227	1

In Gangneung city, even as income and time taken to travel to the traditional market increased, local consumers frequently used traditional markets. This result is attributed to the absence of other markets that compete with traditional markets. In other words, in Gangneung city, there are no other markets that can replace traditional markets. Such results uncover the paradoxical fact that when there are no other markets in a

region to compete with traditional markets - the very antithesis of "vitality" within a community - the traditional markets can be vitalized.

#### Probability of use, by market type

In the analyzed regions, the probability of consumers using traditional markets was 0.044, a

very low figure. Online stores showed the highest probability (0.515), while those of large discount stores and other markets were 0.275 and 0.167, respectively. In summary, the probability that consumers in the South Korean regions examined will use traditional markets is very low. Each sample region is slightly different from one another. Among all, Gumi city shows the highest probability of using traditional market, but still, less than 20%



of the consumers living in Gumi city use the traditional market. The remarkable point is that, although the probability of using large discount stores was not as high as expected, the probability of using online stores was very high. The analytical result of the probability of consumer use, by market type, showed that the traditional market is considered by the populace to be relatively inferior to other markets. If the consumer use of traditional markets is to be enhanced, there is an urgent need to exert measures that address this perception.

### **Analysis of elasticity for the probability of the independent variables**

According to the analytical results of examining elasticity in the probabilities of the independent variables across all sample regions, the factor that would most increase the probability of consumer use of traditional markets is an increase in the number of stores in the traditional market which is the concentration factor of stores in the market. If the number of stores in the traditional market were 10 larger than what is currently the case, the probability of using the traditional market would increase by 0.47, and the probability of using online stores would decrease by 0.25. The elasticity of the parking capacity of the traditional market follows next. If the parking capacity of the traditional market can accommodate more than 30 vehicles, the probability of using the traditional market will increase by 0.039, and those of using large discount stores and online stores will decrease by 0.016 and 0.109, respectively. Elasticity in the probability of the independent variables of the system factor, the policy variable for traditional market, shows a negative value; this means that it cannot significantly increase the probability that consumers will use traditional markets.

### **CONCLUSION AND IMPLICATIONS**

This study sought to investigate real structural changes in commercial districts in South Korea and analyze the causes behind those changes, to help suggest effective countermeasures by which traditional markets can respond to changes in the local central commercial district. This study analyzed consumption behavior with respect to traditional markets, by using a scientific empirical analysis model and thus overcoming the limits inherent in existing studies; its results also suggest measures by which traditional markets can be revitalized. To establish revitalization measures for traditional markets, especially as witnessed through an analysis of consumption behavior, we studied commercial district theory, analyzed consumption behavior via empirical analysis, and suggested a revitalization measure that derives from the analytical results thereof.

The analysis outcome using the multinomial logit model

is detailed further. First, consumption behavior analysis was conducted with the regions that have the fastest-growing population, and hence rapid changes to their urban spatial structures. The analytical result regarding correlations between the reference region and each of the three regions studied, indicated a positive correlation in terms of the population, the number of employees of business in the traditional market, and the number of employees of other types of businesses; it also indicated that the significance of other types of businesses was low, but that there was a positive correlation with an increase in the population. There was also a positive correlation between the number of employees of businesses in the traditional market and the number of employees of other types of businesses.

Secondly, the study conducted a survey of 423 people in four regions of South Korea to analyze consumption behavior among local consumers. In this study, the consumption behavior analysis allowed a consumer to select more than two markets; therefore, we obtained the detailed results via use of the multinomial logit model. With regards to psychological factors, the higher the purchase satisfaction in the traditional market was, the more likely consumers were to use the traditional markets (0.012) more frequently, whereas the frequency of use of the large discount stores (-0.008) and online stores (-0.003) decreased. An increase in purchase amount satisfaction with large discount stores decreased the frequency of use of all types of markets, and an increase in the purchase amount of online stores tended to reduce the frequency of use of all types of markets. This indicates that if satisfaction were to become higher and more statistically significant, the frequency of use of traditional markets and online stores would increase, but that of large discount stores would decrease. The result of the increase in product price satisfaction by market type indicated that the higher the product price satisfaction with large discount stores was, the more likely the frequency of use of large discount stores (0.014) would increase; the frequencies of use of traditional markets (-0.268) and online stores (-0.029), however, decreased. The higher the product price satisfaction with online stores and other markets became, the lower the frequency of use of traditional markets became. With quality satisfaction, the tendency was that, the higher satisfaction with online stores became, the lower the frequency of use of traditional markets (-0.007) became; an increase in the quality satisfaction with other markets, furthermore, increased the use of traditional markets. The more satisfaction with the traditional market increased, the more frequency of use of traditional markets increased; moreover, as satisfaction with large discount stores and online stores increased, the more frequency of use of traditional markets decreased. In terms of physical characteristics, the longer it took to travel to a traditional market, the more the frequency of use of that traditional market decreased, whereas the frequency of use of large

discount stores and online store increased. The more concentrated stores were in traditional markets, the more likely consumers were to use traditional markets; on the other hand, in such a situation, consumers tended to use large discount stores and online stores less frequently. In cases where a traditional market's parking facilities accommodated fewer than 30 vehicles, the frequency of use of that traditional market was low, whereas the frequency of use of large discount stores and online stores increased. However, the analytical result indicated that neither the distance from the residence to the large discount store, nor that from the traditional market to the large discount store, was statistically significant. In terms of system factors, neither the amount of training received by the merchants at a traditional market, nor the amount of advertising, nor the overall deterioration assessment had a remarkable influence on the frequency of use of traditional markets. Especially in cases where a traditional market had no arcade installed and did not accept credit cards, consumers tended to use traditional markets less frequently.

Thirdly, the study analyzed the probability of consumer use by market type, based on the mean value and by using the multinomial logit model. The probability that the consumers would use the traditional market was found to be very low. There were regional differences, but even in Gumi city, which showed the highest probability of consumer use of traditional markets, use did not reach 20%. As a result, the study verified that traditional markets are generally considered by consumers to be relatively inferior to other competing markets; it ascertained this by analyzing the probability of consumer use by market type, and our results point to the urgent need to implement measures that promote the consumer use of traditional markets, if this market type is to be preserved.

The analytical result vis-à-vis the elasticity of the probability of the independent variables within the sample regions explained that increases in the numbers of stores in traditional markets constituted the most influential physical-characteristic variable in increasing the probability of consumers using traditional markets. The second-most influential variable was elasticity in the parking capacity of traditional markets.

This study's results highlight regional differences in consumption behavior, and that traditional markets can be revitalized by limiting the amount of competition from other markets. In addition, there are limits to traditional market revitalization policies in fundamentally improving the probability that consumers will use traditional markets.

There was also a limit to how analytical results could be interpreted, given that we had made the number of visits by market type the dependent variable, in order to conduct the analysis; in cases where there were many consumers who visited frequently to shop, it was clear that the explanatory power of the model was not sufficiently strong and could thus create a structural problem (that is, one that does not sufficiently reflect the meanings of comparisons with the reference region). In future

research, consumption behavior should be analyzed by setting expenditure as the dependent variable.

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