

ANALYSIS OF LEISURE EXPENDITURE AND POLICY IMPLICATIONS: USING KOREAN URBAN HOUSEHOLDS DATA

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***Abstract:** This paper analyzes a household's leisure expenditure by exploring data on Korean urban households and provides policy implications. Among the major findings from quantitative analyses are the significant correlations between leisure consumption and disposable income, and between leisure consumption and the relative price of leisure. It is noteworthy that the income and price elasticities of leisure expenditure differ across household groups with different levels of income. In contrast, an institutional change such as the introduction of a five-day workweek and the shock of an economic crisis appear to be unrelated to leisure expenditure. Policy implications based on these findings are provided.*

***JEL Classifications** C13, D12, R28*

***Keywords:** Leisure expenditure, price index, household income*

I. INTRODUCTION

Leisure-related consumption is believed to be important in government circles, in particular because of its characteristics of “merit good” (Musgrave and Musgrave, 1980). Crompton (2008) also suggested five contributions that leisure provides to alleviating social problems. These explain why governments in many countries implement various policies that affect leisure consumption.

It has been argued that the market for culture, entertainment and leisure related goods and services¹ (hereinafter referred to as ‘leisure goods’ for the sake of convenience) has grown very rapidly, coupled with a rapid increase in individual or household income (Kelly and Freysinger, 2001; Torkildsen, 1992). This argument has particular bearing on Korea, as it experienced both an expansion of the leisure market as well as unprecedented economic growth, despite the

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economic crisis circa 1997-98. According to the Korean government (2006), the expansion of the market was aided by changes in government policy such as the introduction of the five-day workweek.² This belief naturally led to forecasts that spending on leisure goods would increase in the future as people's incomes increased or more leisure-friendly schedules became more ubiquitous (Kim, 2006; Chang and Kang, 2007).

However, it is important to identify accurately what the significant determinants of leisure consumption are in order to discuss future changes in such trends. The identification of these trends is also important to governmental policy, especially in terms of affecting leisure activities among the population.

As pointed out by previous studies, leisure consumption in general appears to increase rapidly, taking up a larger share of total income. For example, Nakamura (1997) analyzed US consumer data for the years 1959, 1974, and 1994 and found an increased share of spending on luxury goods and recreation in each case.

Another variable to be considered is price. Traditional consumption theories hold that, in addition to income, the price of goods is among the most important determinants of demand. However, it is striking that relative prices are frequently overlooked when leisure consumption is discussed. This study takes into consideration this important variable and its deterministic effect on consumer behavior.

The major reason Korean data was utilized is that critical variables such as income and price may be clearly traceable within this context. As it has been well documented, Korea has succeeded in transforming itself from a war-ravaged underdeveloped country to a dynamic developed economy in the span of just one generation. The rapid increase in income associated with this development is expected to allow people more disposable income and the accompanying leisure spending. The fast restructuring of the whole economy and globalization over the past 20 years are also believed to have substantially changed the relative price of leisure goods.

In addition, the time for leisurely pursuits and consumerism has increased thanks to legislation regulating the length of the workweek. The nation also experienced an unprecedented financial crisis in the late 1990s, which might have played a role in reversing leisure consumption trends. While the crisis might have affected leisure consumption through changes in current earnings or relative prices, it is also possible that the crisis directly affected leisure consumption by changing the social environment, which is not reflected in the changes in income or price.

The importance of this study in terms of contributing to government policy is fourfold: First, the impact of relative price which has been ignored in previous studies in spite of its potential importance, will be addressed, as well as the impact of income. Second, the role of changes in government policy, namely the introduction of the five-day workweek, will be examined. Third, the effect of dramatic societal changes such as the economic crisis will also be analyzed. Finally, the effects of these variables are to be compared across different economic strata and across occupational groups as the data allows this kind of categorization. The results will show how people in different occupations or income groups react when changes in these critical variables occur. These findings will provide invaluable implications for academics, practitioners, and policy makers.

This paper consists of four chapters. Chapter II discusses the theoretical basis of the study and the research methods used. Chapter III quantitatively analyzes the effect of critical variables on leisure consumption and interprets the empirical findings, especially in the context of policy implications. Chapter IV sums up the findings of this study.

II. RESEARCH METHODS

1. Leisure Spending in Korea

The importance of leisure consumption to policy makers is due to the following factors:

- (i) leisure consumption rapidly increases as income increases, which has critical implications for modern societies,
- (ii) the right to leisurely pursuits is one of the most basic human rights, and
- (iii) an increase in leisure consumption is beneficial to the overall society (Korean Government, 2006; Nelson, 2001). The leisure and entertainment industry, in particular, is regarded as an economic catalyst, as growing patronage has caused it to grow phenomenally.

Figure 1 shows the share of leisure spending in Korean urban households from 1986 to 2007, compared to major budget items such as food and housing. Food has been the largest share, reaching about 45% in early 1986 and then continuously declining with seasonal fluctuations. The share of housing expenditure has been decreasing with moderate seasonal fluctuations as well. The share of leisure expenditure surpassed that of housing in the early 1990s and has been increasing with seasonal fluctuations.

Figure 2 compares the growth rate for the three items. The possibility of a unit root problem, which may be found in Figure 1, does not seem to exist anymore, but seasonality is observed. The figure shows that fluctuation in leisure outlays is relatively stable compared to shelter. This finding differs from our prediction that the fluctuation in leisure spending would be greater since it represents luxury items while housing is a necessity. This may also reflect a large fluctuation in housing price during the survey period.

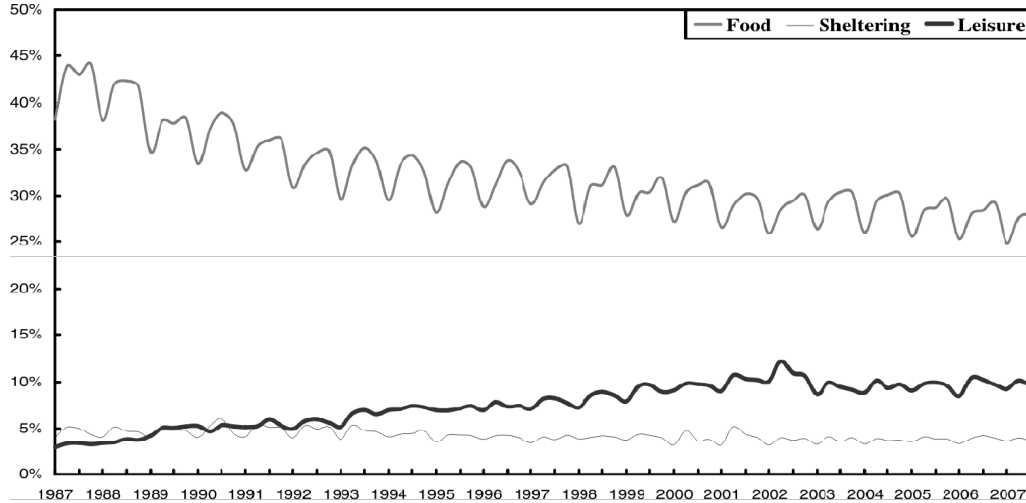
2. THEORETICAL BACKGROUND

(1) Consumption Analysis Using Divisia Moments

Traditional consumer theories, such as the classical Marshall (1890), try to analyze consumption patterns by concentrating on the relationship between prices and volume based on the assumption that spending power or discretionary outlays do not change. While this methodology is clear-cut and convenient, the assumption is extreme to some extent as most variables related to consumer behavior are expected to change over time.

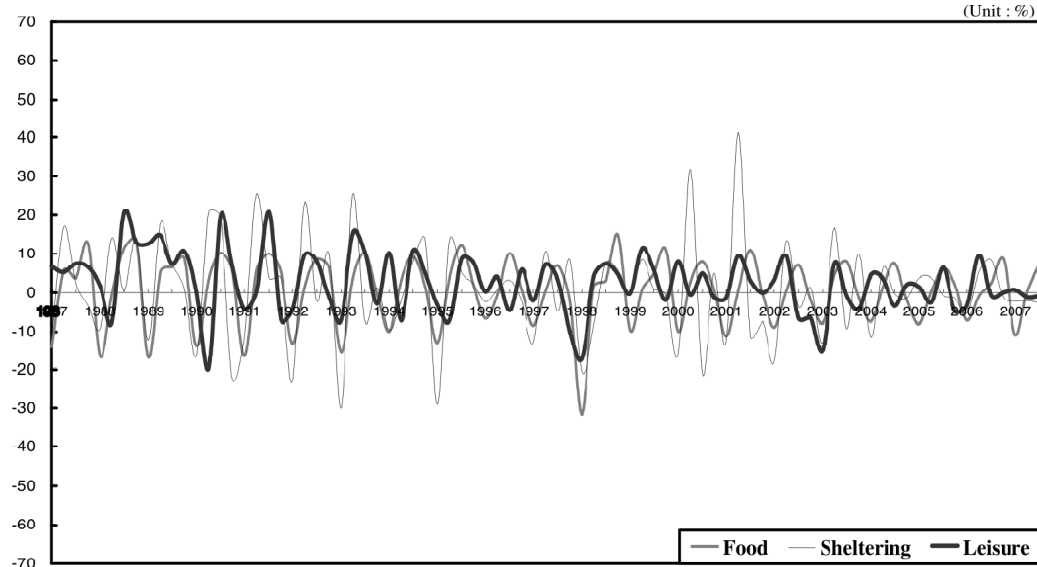
To address this weakness, alternative methods were introduced (for example, Theil, 1967). In particular, analytical methods using Divisia moments have been widely applied to measure consumption patterns in dynamic contexts (for example, Clements, 1982, 2008; Chen, 1999). However, the Divisia moment methodology has rarely been used in the field of leisure research except for Sul (2009) and Nelson (2001) who attempted to analyze entertainment or leisure

Figure 1: Household Spending for Selected Items (Average, 1985~2007)



Data: Urban Household Survey, Bureau of Statistics, 1986~2007 (from Sul, 2009)

Figure 2: Growth Rates of Household Spending for Selected Items (Average, 1986~2007)



Data: Urban Household Survey, Bureau of Statistics, 1986~2007

consumption in Korea and the US, respectively. Nonetheless, this study is different from Sul (2009) in dealing with data in empirical analyses and Nelson (2001) in selecting variables that included and handled seasonal factors.

This study uses Divisia moments to build a leisure consumption model. Households are expected to determine whether and how much they spend on leisure goods and services during each period.³ We define p_u as the (representative) relative price of leisure goods and services

during period t ($t = 1, 2, \dots, T$), and q_u as the amount of leisure goods consumed at time t ($t = 1, 2, \dots, T$). The share of leisure spending is $w_u = p_u^* q_u / M_t$, where M_t is the total household spending, i.e., $M_t = \sum_{i=1}^n p_{it} \times q_{it}$, and i stands for goods and services consumed by the household i ($i = 1, 2, \dots, n$). In this case, the share of leisure spending across periods ($t-1$) and t as a simple numerical average becomes $\bar{\omega}_t = \frac{1}{2}(\omega_t + \omega_{t-1})$.

The change in the price of leisure goods and services over periods ($t-1$) and t can be denoted in terms of a logarithm as $Dp_t = \log p_t - \log p_{t-1}$.⁴ The corresponding change in leisure consumption quantity is denoted in a logarithm as $Dq_t = \log q_t - \log q_{t-1}$.

The Divisia price index (DP_t) is calculated from the weighted average of n consumer prices, where the weight is computed from the share in spending. The Divisia quantity index DQ_t can be obtained by the same method.

$$DP_t = \sum_{i=1}^n \bar{\omega}_{it} \times Dp_{it}, \quad DQ_t = \sum_{i=1}^n \bar{\omega}_{it} \times Dq_{it}$$

DQ_t stands for the change in total expenditure on consumption goods and services that a household pays for from ($t-1$) to t , while Dq_u is the change in consumption of leisure goods and services for the same household over the same period.

(2) Regression Models and Variables

Using the Divisia moments discussed above, regression analyses will be carried out to determine the impact of relevant variables on leisure consumption. The basic model is adopted from Theil (1965) as follows:

$$Dq_t = \alpha_t + \eta_t \times DQ_t + \gamma_t \times Dp_t + \varepsilon_t \quad (1)$$

Here α_t is a constant that reflects the trend over time. The coefficient η_t can be interpreted as the elasticity of leisure consumption with respect to income, as it signifies percentage change in leisure consumption due to a 1% change in total consumer spending. The coefficient η_t is expected to be positive. Moreover, if the growth rate of leisure consumption is faster than that of income, or leisure consumption is elastic when income changes, the coefficient will be greater than 1, implying that leisure is a luxury good.

Since Dp is the relative price of leisure goods compared to all other goods and services, coefficient γ_t is the elasticity of leisure consumption with respect to the relative price of leisure goods. The coefficient is in general expected to be negative.

Equation (1) can be extended by considering some other variables. Another important determinant in leisure consumption is the availability of free time to pursue related activities. In particular, this study is concerned with the effects of policy changes on leisure consumption – more specifically, the introduction of a five-day workweek for the first time for large companies in 2002 and its application to smaller firms over time. By the third quarter of 2006, the system

was imposed on all businesses with more than 5 employees. Researchers and policy-makers in Korea firmly believed that this policy change increased leisure time, participation in leisure activities and leisure consumption. However, this belief has not been rigorously tested. This study attempts to find whether such policy changes actually increased household leisure consumption. If the policy did have such an effect, the coefficient for the variable will turn out to be positive.

Furthermore, one potentially important variable for leisure consumption is structural changes in society, which may have a shock effect on consumers. In the case of Korea, the economic crisis that beset the nation since the third quarter of 1997 was a well-known instigator of various changes in the nation. While it is beyond the scope of this study to identify the specific channels through which this crisis affected leisure consumption, this study seeks to confirm the existence of such effects.

This is modeled in equation (2) by including the two aforementioned changes as dummy variables.

$$Dq_t = \alpha_t + \eta_t \times DQ_t + \gamma_t \times Dp_t + \tau_t \times d_{FW} + \theta_t \times d_{EC} + \varepsilon_t, \quad (2)$$

where d_{FW} and d_{EC} are dummy variables representing the five-day workweek and the economic crisis, respectively, where

$$\begin{aligned} d_{FW} &= 0 \text{ before 2002} \\ &= 1 \text{ otherwise, and} \\ d_{EC} &= 0 \text{ before the third quarter of 1997} \\ &= 1 \text{ otherwise.} \end{aligned}$$

The coefficient τ_t is expected to be positive, and θ_t to be negative.

(3) Controlling Seasonal Effects

One variable that is controlled in this equation is the seasonal effect. As this study uses quarterly data, it is possible that the estimation does not accurately reflect the effects of relevant variables on leisure consumption. For example, it is expected that more leisure activities are common during a quarter with more holidays or better weather. In this case, the following quarter's leisure consumption is generally expected to decrease, which may not properly explain changes in leisure consumption patterns. In order to deal with this problem, this study directly converts data into 'quarter-over-quarter' (hereinafter q o q) rather than using a continuous time series. Therefore, equations (1) and (2) can be transformed by defining each variable as the difference between period t and $t-4$, rather than between period t and $t-1$. In other words, $Dq_t = \log q_t - \log q_{t-4}$.

While q-o-q data mitigates the problem of misinterpreting trends, it is still important to properly deal with the fluctuation of leisure consumption over quarters. This phenomenon can be captured in equation (3) by including seasonal dummies in equation (1), where q-o-q data are used. Equation (3) accommodates increases or decreases of leisure consumption with certain trends when the same quarter from the previous year was used for comparison instead of the previous quarter.

$$Dq_t = \alpha_t + \eta_t \times DQ_t + \gamma_t \times Dp_t + \sum_{j=2}^4 \beta_{jt} \times d_{jt} + \varepsilon_t, \quad (3)$$

where d_j is the dummy for quarter j where $j = 2, 3, 4$. As the first quarter is used as a benchmark, the coefficient β_{jt} indicates whether leisure consumption in a certain quarter j is different from that of the first quarter.

Taking into account all of these variables, the most comprehensive estimation is carried out as equation (4).⁵

$$Dq_t = \alpha_t + \eta_t \times DQ_t + \gamma_t \times Dp_t + \sum_{j=2}^4 \beta_{jt} \times d_{jt} + \tau_t \times d_{FW} + \theta_t \times d_{EC} + \varepsilon_t, \quad (4)$$

(4) Data

The *Urban Household Survey* data used in this study contains a rather broad classification for leisure-related expenditure, such as “culture, entertainment and leisure-related expenditure.” In accordance with this data, we use this classification for leisure spending. The data period covers the first quarter of 1985 to the third quarter of 2007, with a total 91 observations. The prices of leisure goods relative to all other goods were calculated using the weighted average of all the consumer goods and services included as components of household spending, where the weight was given based on shares of overall spending.

The survey collected data from about 9,000 urban households with more than one household member.⁶ The households included in the analysis differed every year. However, this change in sampling followed statistical rules and did not erode the representational validity of the study. The survey classified respondents into two categories: ‘employed’ and ‘non-employed.’ Employed households were defined as households whose breadwinners were ‘office workers’ or ‘production workers’; non-employed households were categorized as ‘self-employed’ or ‘unemployed’ head of households.

The descriptive characteristics of each group for the duration of the analysis are summarized in Table 1. On average, during this period, the expenditure of office workers’ households was the highest, which was followed by the self-employed households. While spending by production workers’ households was the third highest, the difference between this group and the unemployed household group was quite narrow. In terms of free time for leisure activities, the assumption is that the self-employed and unemployed households should have more flexibility, whereas office workers and production workers would not.

III. RESULTS AND POLICY IMPLICATIONS

(1) Results

This study first analyzed the patterns of leisure consumption using equation (1), followed by the application of more sophisticated methods, including ‘environmental’ variables such as the economic crisis and the introduction of the five-day workweek, as well as seasonal dummy values.

Table 1
Household Characteristics – Summary Statistics

	<i>Overall</i>		<i>Employed</i>			<i>Non-employed</i>	
			<i>Office Workers</i>	<i>Production Workers</i>		<i>Self-Employed</i>	<i>Unemployed</i>
Percentage of Households	100.0%	60.6%	25.6%	35.0%	39.4%	29.2%	10.2%
Avg. Expenditure	1,516,736	1,523,999	1,880,317	1,258,271	1,512,645	1,634,427	1,186,889
Expenditure in 1987	431,951	416,575	546,903	339,741	459,728	479,740	386,561
Expenditure in 2006	2,580,882	2,684,750	3,341,708	2,151,419	2,435,927	2,711,472	1,865,221
Spending Growth Rate	9.87%	10.30%	9.99%	10.20%	9.17%	9.54%	8.64%

Source: Sul (2008)

For all analyses, ‘q-o-q’ data was used. While all the nominal noise factors were neutralized by using the Divisia moment methodology, and seasonal impacts on growth rates were controlled by using q-o-q data, preliminary regressions left open the possibility of serial correlations. Therefore, AR(1) was adopted for all regression analyses, and the reported coefficients for the autocorrelation confirmed that the serial correlation existed.

Table 2 reports the results of the simplest regression. Real and q-o-q variables were used, where relative prices and income were adopted as independent variables. The model using the Divisia moments was structured so that the constant terms contained therein represent effects over time. Table 2 shows that the constants are significant and positive, indicating that leisure consumption trends move upward over time, *ceteris paribus*.

All the coefficients have expected signs and statistical significance. The coefficients for relative prices (of leisure goods compared to all other goods) for all household sub-groups appeared significant and negative. In particular, the results explained that unemployed households reacted very sensitively to the increase in prices of leisure goods, by reducing their consumption by 2.01% when the prices increased by 1%. By comparison, the self-employed households decreased their consumption of leisure goods the least (1.23%) when the prices increased by 1%. Following the definition of ‘elasticity’, leisure consumption in all household groups was elastic to price changes, implying that expenditure on leisure in fact decreased as the price increased.

The coefficients for income for all groups were positive and significant, indicating that they increased (or decreased) their leisure consumption (and thus expenditure) as their incomes increased (or decreased). The households of office workers had the highest coefficient; they increased leisure consumption by 1.46% as their income increased by 1%. Since, on average, their incomes increased by 10% each year, this suggests that leisure consumption went up approximately by about 15%. The coefficients for households of self-employed and unemployed workers were very close to one, implying that their consumption and spending on leisure changed proportionally to their change in income.

Table 2
Explaining Leisure Consumption by Household Characteristics (real, q-o-q)

Variables	Overall			Workers			Non-Workers					
	Coefficient	t_value	t_value	Coefficient	t_value	t_value	Coefficient	t_value	t_value			
				Office Workers	Production Workers	Self-Employed	Unemployed					
Relative Price	-1.1436*** (0.1773)	-6.45 (0.1878)	-1.0501*** (0.3550)	-3.81 (0.3162)	-1.3204*** (0.1424)	-4.18 (0.1987)	-1.1947*** (0.2736)	-4.37 (0.4184)	-1.2309*** (0.5599)	-2.94 (1.0505***)	-2.0102*** (0.2125)	-3.59 (0.0197)
Real Income	1.0702*** (0.1308)	8.18 (0.1341)	1.1565*** (0.1771)	8.25 (0.1424)	0.7233*** (0.0131)	5.08 (0.0176)	1.1492*** (0.0188)	5.78 (0.0409**)	1.0445*** (0.0188)	4.21 (0.0252)	1.0505*** (0.0252)	4.94 (0.0197)
Constant	0.0422*** (0.0118)	3.59 (0.0124)	0.0399*** (0.0135)	1.65 (0.1098)	0.0608*** (0.1089)	4.64 (0.1053)	0.0360** (0.1053)	2.04 (0.1053)	0.0409** (0.1054)	2.18 (0.1054)	0.0197 (0.1116)	0.78 (0.0644)
SSE	0.2743	0.2941	0.5885	0.5885	0.5158	0.7749	0.8286	3.1701	0.0396	0.4101		
MSE	0.0034	0.0037	0.0074	0.0074	0.0065	0.0097	0.0104	0.0396	0.6155	0.4101		
R_Square	0.8352	0.8142	0.7431	0.7431	0.5783	0.7070	0.6155	0.4101				
Obs.	84											

Notes: Standard errors corrected for heteroskedasticity in parentheses. *, **, and *** indicate significance at a 10%, 5% and 1% level, respectively.

It should be noted that unemployed households have (relatively) low income elasticity and high price elasticity. Low income elasticity is easily explained by low income levels: when income is low, a larger portion of it might be used for purchasing ‘necessities’, thus keeping the income elasticity for luxurious goods low. A recent study by Gabaldon-Quinones, Manas-Alcon and Garrido-Yseret (2008) used Spanish regional data and also confirmed the significant relationship between GDP per capita and leisure spending from simple regression.

Even when controlling the variable of income, the price elasticity of households of the unemployed is the largest, indicating that their limited income made them very sensitive to changes in real prices of leisure goods. In contrast, self-employed households had the lowest price elasticity. This combined with a high level of income may suggest that they should be more flexible in allocating their leisure time and thus be able to utilize various kinds of concessions for such activities.

Equation (2) introduced exogenous changes potentially affecting leisure consumption: the economic crisis that Korea experienced in 1997 and 1998, and the implementation of the five-day workweek. Table 3 summarizes the results. Most results are substantially similar to those from equation (1) as reported in Table 2. The importance of relative price and real income was reinforced, and the robustness of the results was confirmed. Nonetheless, the five-day workweek and the economic crisis did not seem to affect leisure consumption significantly. The coefficient for the five-day workweek turns out to be negative and significant. However, the significance was at only a 10% level. Moreover, when each sub-group was analyzed, this significance disappeared. These results suggest that exogenous and environmental changes did not affect leisure consumption substantially.

While seasonal variations were controlled by using q-o-q data, this does not preclude the possibility of systematic changes in leisure consumption across quarters. The changes in leisure consumption over the quarters may be different for each household group, as they may have different flexibility and tastes in using their time. Tables 4 and 5 are the results of regressions when seasonal dummy values are introduced. Table 4 includes only price and income variables combined with seasonal dummy variables, while Table 5 includes the five-day workweek and the economic crisis as well.

Table 4 shows that price and income variables are significant with expected signs. However, compared to Table 1, the magnitudes were slightly changed as more variables (seasonal dummy values) were introduced in the model. For employed households, dummy variables for the second and third quarters appeared positive and significant, indicating that they consume more leisure goods in the second and third quarters than in the first. The second quarter goes from mid-Spring to early Summer (April to June) which is characterized by mild weather, suitable for outdoor activities. In addition, Korea has many public holidays and important events during this period, such as Buddha’s Birthday, Children’s Day, Teachers’ Day and Parents’ Day. The third quarter (July to September) includes the summer holidays. Sometimes Full Moon Day (August 15 on the lunar calendar) falls in this quarter too.

Table 5 contains the results of estimation with all the potentially relevant variables. The table shows that, while the significance of price and income remained robust, that of seasonal dummy values dissipated when more variables were introduced. There were substantial increases

Table 3
Explaining Leisure Consumption by Household Characteristics with regard to the 5-Day Work Week & Economic Crisis (real, q-o-q)

Variables	Overall			Workers			Non-Workers						
	Coefficient	t_value	t_value	Office Workers	Production Workers	Self-Employed	Unemployed						
Relative Price	-1.1878*** (0.1719)	-6.91 (0.1850)	-1.0726*** (0.1850)	-1.3059 (0.3506)	-3.72 (0.3211)	-1.2104*** (0.3211)	-3.77 (0.2712)	-1.2681*** (0.2712)	-4.68 (0.4201)	-1.1965*** (0.4201)	-2.85 (0.5753)	-1.9689*** (0.5753)	-3.42
Real Income	1.0005*** (0.1323)	7.56 (0.1379)	1.1077*** (0.1379)	1.3894 (0.1802)	7.71 (0.1545)	0.7134*** (0.1545)	4.62 (0.2070)	1.0840*** (0.2070)	5.24 (0.2685)	1.0157*** (0.2685)	3.78 (0.2232)	1.0053*** (0.2232)	4.50
5-Days Work	-0.0492* (0.0276)	-1.79 (0.0293)	-0.0400 (0.0293)	-0.0194 (0.0341)	-0.57 (0.0338)	-0.0390 (0.0338)	-1.15 (0.0456)	-0.0673 (0.0456)	-1.47 (0.0484)	-0.0618 (0.0484)	-1.28 (0.0736)	-0.0079 (0.0736)	-0.11
Economic Crisis	-0.0073 (0.0223)	-0.33 (0.0235)	-0.0056 (0.0235)	-0.0260 (0.0257)	-1.01 (0.0268)	-0.0043 (0.0268)	-0.16 (0.0367)	0.0076 (0.0367)	0.21 (0.0548)	0.0053 (0.0548)	0.14 (0.0388)	-0.0357 (0.0388)	-0.65
Constant	0.0567*** (0.0157)	3.60 (0.0169)	0.0514*** (0.0169)	0.0413 (0.0183)	2.25 (0.0190)	0.0705*** (0.0190)	3.72 (0.0249)	0.0454* (0.0249)	1.82 (0.0275)	0.0501* (0.0275)	1.82 (0.0362)	0.0398 (0.0362)	1.10
MSE		0.0034	0.0037	0.0074	0.0074	0.0065	0.0097	0.0097	0.0104	0.0104	0.0403	0.0403	
R_Square		0.8432	0.8197	0.7496	0.5868	0.7144	0.6239	0.7144	0.6239	0.6239	0.4147	0.4147	
Obs.													84

Notes: Standard errors corrected for heteroskedasticity in parentheses. *, ** and *** indicate significance at a 10%, 5% and 1% level, respectively.

Table 4
Explaining Leisure Consumption by Household Characteristics with Seasonal Dummies (real, q-o-q)

Variables	Overall			Workers			Production Workers			Non-Workers			
	Coefficient	t_value	t_value	Coefficient	t_value	t_value	Coefficient	t_value	t_value	Coefficient	t_value	t_value	
Relative Price	-1.0713*** (0.2088)	-5.13	-0.9098*** (0.2266)	-4.02	-1.1761** (0.4773)	-2.46	-1.0612*** (0.3893)	-2.73	-1.2803*** (0.3297)	-3.88	-1.8188*** (0.5700)	-3.19	-2.6160*** (0.6024)
Real Income	0.9721*** (0.1446)	6.72	1.1101*** (0.1497)	7.42	1.5811*** (0.2171)	7.28	0.6836*** (0.1798)	3.80	0.9397*** (0.2329)	4.03	0.6819*** (0.2959)	2.30	1.1754*** (0.2834)
Dummy (2 nd Quarter)	0.1062*** (0.0255)	4.16	0.1103*** (0.0264)	4.18	0.1794*** (0.0436)	4.11	0.0753*** (0.0292)	2.58	0.1133*** (0.0381)	2.97	0.0921** (0.0413)	2.23	0.1668** (0.0807)
Dummy (3 rd Quarter)	0.0282* (0.0150)	1.88	0.0444*** (0.0160)	2.78	0.0438** (0.0219)	2.00	0.0522*** (0.0206)	2.58	-0.0020 (0.0253)	-0.08	0.0092 (0.0279)	0.33	-0.0153 (0.0465)
Dummy (4 th Quarter)	-0.0262 (0.0222)	-1.18	-0.0461** (0.0221)	-2.09	-0.0185 (0.0345)	-0.54	-0.0469 (0.0288)	-1.63	0.0028 (0.0344)	0.08	0.0203 (0.0372)	0.55	-0.0377 (0.0747)
Constant	-0.0153 (0.0131)	-1.17	-0.0168 (0.0136)	-1.23	-0.0469** (0.0216)	-2.17	-0.0044 (0.0160)	-0.28	-0.0172 (0.0203)	-0.84	-0.0177 (0.0221)	-0.80	-0.0264 (0.0426)
SSE	0.4199*** (0.1015)	4.14	0.3755*** (0.1036)	3.62	0.4546*** (0.0996)	4.56	0.3524*** (0.1046)	3.37	0.3533*** (0.1046)	3.38	0.3156*** (0.1061)	2.98	0.4712*** (0.0986)
MSE	0.2182	0.2408	0.0027	0.0030	0.4964	0.0062	0.3797	0.5937	0.8264	0.0074	0.0102	0.1848	2.2154
R_Square	0.5746	0.6099	0.6119	0.4559	0.3641	0.0277	0.4567	0.0277	0.1848	0.0277	0.1848	0.0277	0.4567
Obs.	84												

Notes: Standard errors corrected for heteroskedasticity in parentheses. *, **, and *** indicate significance at a 10%, 5% and 1% level, respectively.

Table 5
Explaining Leisure Consumption by Household Characteristics with the 5-Day Work Week, Economic Crisis and Seasonal Dummies (real, q=0-q)

Variables	Overall			Workers			Non-Workers						
	Coefficient	t_value	t_value	Coefficient	t_value	t_value	Coefficient	t_value	t_value				
				Office Workers	Production Workers	Self-Employed	Unemployed						
Relative Price	-1.1882*** (0.1752)	-6.78 (0.1886)	-1.0730*** (0.1886)	-1.3077*** (0.3575)	-3.66 (0.3275)	-1.2105*** (0.3275)	-3.70 (0.2764)	-1.2688*** (0.4283)	-4.59 (0.4283)	-1.1965*** (0.5874)	-2.79 (0.5874)	-1.9765*** (0.5874)	-3.36 (0.5874)
Real Income	1.0022*** (0.1349)	7.43 (0.1407)	1.1091*** (0.1407)	1.3904*** (0.1837)	7.57 (0.1577)	0.7134*** (0.1577)	4.52 (0.2110)	1.0861*** (0.2110)	5.15 (0.2739)	1.0189*** (0.2739)	3.72 (0.2278)	1.0040*** (0.2278)	4.41 (0.2278)
5-Days Work	-0.0492 (0.0282)	-1.74 (0.0300)	-0.0399 (0.0300)	-0.0192 (0.0348)	-0.55 (0.0346)	-0.0389 (0.0346)	-1.12 (0.0467)	-0.0674 (0.0495)	-1.44 (0.0495)	-0.0617 (0.0495)	-1.25 (0.0753)	-0.0076 (0.0753)	-0.10 (0.0753)
Economic Crisis	-0.0069 (0.0228)	-0.30 (0.0241)	-0.0052 (0.0241)	-0.0256 (0.0262)	-0.98 (0.0274)	-0.0043 (0.0274)	-0.16 (0.0375)	0.0083 (0.0375)	0.22 (0.0397)	0.0060 (0.0397)	0.15 (0.0560)	-0.0356 (0.0560)	-0.64 (0.0560)
Dummy (2 nd Quarter)	0.0029 (0.0157)	0.19 (0.0163)	0.0022 (0.0163)	0.0029 (0.0252)	0.12 (0.0232)	-0.0001 (0.0232)	-0.01 (0.0270)	0.0045 (0.0270)	0.17 (0.0277)	0.0024 (0.0277)	0.09 (0.0613)	0.0144 (0.0613)	0.23 (0.0613)
Dummy (3 rd Quarter)	0.0011 (0.0174)	0.07 (0.0181)	0.0005 (0.0181)	0.0002 (0.0268)	0.01 (0.0250)	-0.0007 (0.0250)	-0.03 (0.0298)	0.0029 (0.0298)	0.10 (0.0307)	0.0008 (0.0307)	0.03 (0.0631)	0.0065 (0.0631)	0.10 (0.0631)
Dummy (4 th Quarter)	0.0052 (0.0157)	0.33 (0.0163)	0.0039 (0.0163)	0.0075 (0.0252)	0.30 (0.0232)	-0.0001 (0.0232)	-0.01 (0.0270)	0.0085 (0.0270)	0.32 (0.0277)	0.0076 (0.0277)	0.27 (0.0613)	0.0106 (0.0613)	0.17 (0.0613)
Constant	0.0541*** (0.0192)	2.82 (0.0205)	0.0495*** (0.0205)	0.0384 (0.0247)	1.56 (0.0246)	0.0707*** (0.0246)	2.87 (0.0311)	0.0410 (0.0311)	1.32 (0.0336)	0.0469 (0.0336)	1.40 (0.0534)	0.0318 (0.0534)	0.60 (0.0534)
	-0.3201*** (0.1094)	-2.93 (0.1089)	-0.3335*** (0.1089)	-0.1453 (0.1142)	-1.27 (0.1134)	-0.1877* (0.1134)	-1.65 (0.1103)	-0.2950*** (0.1103)	-2.67 (0.1096)	-0.3147*** (0.1096)	-2.87 (0.1152)	-0.0650 (0.1152)	-0.56 (0.1152)
MSE	0.0035	0.0038	0.0038	0.0076	0.0067	0.0067	0.0101	0.0101	0.0108	0.0108	0.0419	0.0419	0.0419
R_Square	0.8436	0.8199	0.8199	0.7500	0.5868	0.5868	0.7148	0.7148	0.6244	0.6244	0.4152	0.4152	0.4152

Notes: Standard errors corrected for heteroskedasticity in parentheses. *, ** and *** indicate significance at a 10%, 5% and 1% level, respectively.

in the fitness of models, indicating that Table 5 might be a better model to explain leisure consumption patterns.

(2) Policy Implications

It is worthwhile to heed De Grazia (1962) and Kraus (1990), who warned that leisure inequality becomes deeply rooted in modern society as some groups of people cannot afford the utility of leisure activities. The affordability of leisure should be very closely related with income, price and time.

If government deems the right of people to leisure as important and agrees that recreation is crucial to keeping people healthy and sane, namely it treats leisure as a merit good, it may attempt to change people's incomes, the price of leisure goods, or leisure time to increase leisure consumption. In Korea's case, as households react to income and price changes in different ways based on their profiles, government policies must be formulated accordingly.

While the results changed slightly depending on the model used, in general, income elasticity was highest (and greater than one) for office workers' households, who had the highest average income. This confirms the traditional argument that leisure goods and services have the characteristics of luxury goods. The demand for leisure goods and services will increase faster than the income of the population.

In contrast, income elasticity for households in the lower income groups – production workers and the unemployed – turns out to be close to one or significantly lower than one. In this instance, a policy that encourages leisurely pursuits by providing income subsidies may not properly achieve its goal because a larger portion of such subsidies would be spent on other types of goods and services. If the government aims to increase leisure consumption of these people, it may be more effective to use devices such as 'leisure activity vouchers' rather than direct cash-transfers. However, the advice from traditional textbooks is still valid: Offering vouchers will distort consumption feasibility sets and activate a black market for the vouchers.

Relative prices are also substantially important in determining leisure consumption. Price elasticity, in particular, is largest for low income groups such as unemployed households. Direct subsidies for leisure activities, such as a leisure activity voucher system, would effectively encourage leisure consumption of households with the highest price elasticity and whose breadwinner is unemployed.

For production workers in Korea, price elasticity is lower than one, indicating that this sort of policy that lowers the relative price would not effectively increase leisure consumption. One possible policy to encourage leisure consumption for this group is to institute flexible working and/or reduced working hours.⁷ The problem is that the coefficient for the introduction of the five-day workweek did not appear significant. This needs further discussion.

One possible explanation is that as relative prices and incomes are controlled in the model the leisure industry has not sufficiently developed to a point where it can absorb the increased demand from increased free time. For example, amusement facilities have failed to accommodate people with more free time in Korea. Alternatively, but more plausibly, it could be argued that the five-day workweek was not implemented nationwide until 2002, when it was gradually

implemented to a larger number of workplaces. Another possibility is that while the system was nominally implemented, it was not properly enforced so most workers could not reduce their working hours substantially. A recent survey by the Korean government (Ministry of Culture and Tourism, 2006) reported that the average duration of participating in a leisure activity per week increased by only four minutes or less than 0.5%, from 2003 to 2006. A striking discovery is that people had more leisure time during the weekdays and Saturdays, at the expense of significantly less leisure time during Sundays/public holidays.

This implies that the introduction of the five-day workweek has not increased leisure time, but in fact reallocated leisure time from Sundays to weekdays and Saturdays. In brief, a new system has not effectively been implemented. It is possible that the increase in leisure time reduces income and adversely affects leisure consumption. However, in the case of Korea, this argument is not valid because even with the introduction of the five-day workweek neither leisure time nor income level has substantially changed. In 2006 survey, the largest portion of people (44.1%) still pointed out that “the lack of time” was the major constraint to participating in leisure activity (Ministry of Culture and Tourism, 2006).

On the other hand, flextime is not commonly used in Korea. Most people start and finish work at about the same time. Allowing workers more flexibility in determining their working hours would encourage people to spend more time on leisure activities.

Dummy values introduced to account for seasonal change were significant in limited cases as in equation (3). While the second quarter was positive for all household groups, the third quarter was positive for only households of employed workers. This result is strongly correlated with scheduled vacations for the employed. In order to promote the development of the leisure and tourism industries by stabilizing demand throughout the year as opposed to concentrating on specific seasons, policy-makers should consider making holidays flexible and spread out over the course of the year. A change in school holidays could also achieve this. If each school had some autonomy in setting their vacation time, students and their families would have more flexibility in scheduling their leisure and travel, which would increase the industry’s stability and eventually help it grow.

IV. SUMMARY

This paper explored the determinants of leisure consumption using the *Urban Household Survey* in Korea from 1985 to 2007. The Divisia moment methodology was used to analyze the dynamic effects of relevant variables on spending. Regression analyses with various models show that the relative price of leisure goods and services significantly and negatively affected consumer behavior when it comes to leisure. Income also turns out to be a significant variable, where the highest income group’s elasticity is far higher than one. However, the introduction of the five-day workweek and the economic crisis were found to be insignificant. Depending on the estimation equation, seasonal dummy variables are positive for the second and third quarters for employed households, while only the second quarter was positive for non-employed households.

These findings imply that the increase in leisure consumption since the 1980s in Korea was mainly generated by the increase in income. While the coefficient for the price of leisure goods

turns out to be significant, the price variable has consistently been increasing. This indicates that the change in relative price only contributed to decreasing leisure consumption. In contrast, the general belief in Korea that a five-day workweek would stimulate leisure consumption does not appear to have a solid empirical foundation. The insignificance of the economic crisis in explaining leisure consumption implies that the crisis did not directly affect leisure consumption, but it could be affected by changes in income or relative price.

The differences in income and price elasticities for different groups of people, and some seasonal effects of leisure consumption for specific groups, should be carefully considered when the government attempts to use certain measures to encourage leisure consumption. The effectiveness of policies to alleviate budget constraints, to decrease leisure prices, to provide more leisure time, or to increase flexibility of working hours will depend on the target consumers' characteristics. These characteristics include income elasticity, price elasticity, and the amount and flexibility of free time. These policy implications derived from the findings were discussed in detail in Section III of this paper.

NOTES

1. The Korean government regularly publishes cultural, entertainment and leisure-related spending in its *Urban Household Survey*.
2. See Government of Korea (2006).
3. This part of building up the model follows Clements (1982).
4. The subscript l that stands for 'leisure' is omitted for simplicity.
5. It is possible that the economic crisis affected leisure spending for a limited time. To take this into account, more estimations were performed using different dummy values; however, the results were similar to those reported in this study.
6. Non-agriculture, non-fishery households in non-urban areas have been included in the survey since 2003, and the data for previous years are not available. Therefore, these households are excluded from the analysis for consistency.
7. For example, Table 4 shows that for non-employed workers the second quarter was significant while the third quarter was not. This might indicate that they were relatively more flexible in using their time and did not have to go on vacation during the third quarter when the resorts are crowded and prices rise.

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