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Abstract

Understanding the demand profile of rural tourism is a necessary condition for the successful diversification of any rural economy. Although descriptive analyses have been conducted on this issue, a more generalised framework is required that allows us to explore economic analyses. This paper evaluates the leisure behaviour of households that have a preference for rural tourism in Japan. First, we give conceptual consideration to the notion that leisure behaviour should be regarded as a form of a home production and explain that households that undertake rural tourism have undergone an upward shift in the home production function to realise a higher utility level. We propose that a preference for rural recreation causes this shift by improving the efficiency of the home production of leisure. Second, as an actual behaviour of rural tourism, the characteristics of visitors to pick-your-own farms were statistically tested using data from a nationwide survey on tourism. Finally, the rural preference function was estimated. The results revealed that the profile of households showing a preference for rural tourism demonstrated both up-market and niche market characteristics, which mirrored findings in European countries emphasizing the importance of a higher academic background, stronger orientation towards outdoor recreation, and greater discrimination with respect to the quality of services and goods received. Preference for rural recreation can be enhanced through the provision of authentic, high quality service and goods and the preservation of the rural environment. Therefore, there will be an increased demand for a farm policy that integrates both agricultural and rural measures.

Keywords: rural tourism, home production, service goods, rural infrastructure, leisure behaviour

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1. Introduction

Rural tourism has attracted growing concern from in relation to multiple aspects, such as sustainable rural development and diversification of the rural economy. To address these concerns, it is necessary to determine the profile of visitors. This is also true of tourism in general and consequently there are several established approaches: for an example of a marketing approach see Swarbrooke and Horner (1999) and for a psychological approach see Ryan (1995). However, economic approaches to these issues have not been fully explored. Here, we attempt to shed some light on the economic behaviour of rural tourists (for a discussion of rural tourism in general, see Butler and Jenkins, 1998).

Rural tourism is clearly an up-market pursuit (Haines and Davies; 1987, Blunden and Curry, 1988; Sharpley, 1996; Sharpley and Sharpley, 1997; Ueno, 1974). Although people with a high educational background and high income usually command correspondingly high opportunity costs of time, there has previously been no economic explanation for seeking such time-using recreational activities. Labour economics explain that the rising demand for leisure is the outcome of a backward-bending labour supply curve, which has been described as the income effect.

The second apparent feature of rural tourism is the niche market (OECD, 1995a, b). Because not all high-income individuals prefer rural tourism, the demand for it cannot be completely explained by the income effect, so we need to take into account additional factors. For this purpose, we should first consider rural tourism within the more general framework of leisure behaviour. Economists have usually examined leisure behaviour in connection with labour: for one of the pioneering works from this stance, see Owen (1970). From this perspective, the present paper treats rural tourism as one of the set of leisure behaviours that can also be included in the category of home production. Leisure behaviour has not been included in the category of home production even in tourism economics (see Sinclair and Stabler (1997) for an example of tourism economics). However, there are no substantial differences between leisure behaviour and home production (Kooreman and Wunderink (1997) give a comprehensive review of household models). Viewing leisure behaviour as a service goods, it has simultaneity of production and consumption, meaning that consumers have to be physically present where the production takes place. This means that home production is not necessarily based solely at home, although since Becker's pioneering work (Becker, 1976) studies have tended to be focused on production at home. Because household members work for their family, home production can actually take place anywhere. Another focal point is that leisure activity has been playing an increasingly important role in easing the stressful life frequently experienced by urban households. Thus, the concept of home production should be extended to include leisure activity in

the household. Opperman (1997) points out that the definition of rural tourism included the family market, an appropriate characterisation that supports our stance. We consider leisure behaviour conducted by the household unit to be a form of home production that enhances its utility level.

By incorporating the home production framework, we give conceptual consideration to the question of why high-income people prefer this time-using type of leisure behaviour. We evaluate leisure behaviour from the perspective of home production by considering that the intensity of rural preference among this group of people is connected with the level of home production. Then, within the conceptual framework, we clarify the demand characteristics of rural tourism focusing on visits to “pick-your-own” farms, estimating the rural preference function to determine the actual factors forming a rural preference. Finally, implications for the future development of rural tourism are discussed.

2. Background to the analysis

2.1. Policy background in Japan

In this section we give a brief overview of rural tourism in Japan in the context of the following analyses. Green tourism, Japanese rural and farm tourism, including agriculture, forestry and fisheries, has been promoted by the Japanese government since 1992 to counter the depopulation of the rural community and loss of agricultural competitiveness that has arisen following the liberalization of global trade. Green tourism was given a legal framework in 1994 (Yamazaki *et al.*, 1993). By March 2000, a total of 752 farms were registered: for an assessment of the connection between farm-based accommodation in Japan and multifunctionality, see Ohe (2001); for a comparative analysis of Japanese farm based accommodation and Italian agritourism, see Ohe and Ciani (1999).

Under the administration of the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF), a new policy framework for food, agriculture and rural areas was enacted in 1999, entitled *The basic law for food, agriculture and rural areas*. Within this law, rural policy measures promoting green tourism are clearly stipulated.

2.2. Evolution of leisure behaviour in Japan

Many studies conducted in Western Europe have pointed out that the demand characteristics of rural tourism and farm tourism have up-market features, such as higher educational background and social status, and consequently it is understood to be a niche market.

During the period of high economic growth, Japanese leisure behaviour in general was characterised as mainly urban oriented, less time consuming and concentrated during weekdays rather than at weekends (Ueno, 1974). However, the results of a questionnaire conducted by the Leisure Development Center indicates that in recent

years individuals spending time in the natural environment, such as forest, waterfront, and rural areas, possess one or more of the following characters (Watanabe, 1998): 1) they are professionals, students or business managers, 2) they have a high academic background, 3) they live in large cities. Watanabe (1998) also highlights the relationship between perceived stress and the express desire to visit places of natural beauty. These demand features are consistent with the up-market characteristics prevalent in studies of European countries.

A major question to be resolved is why people of higher socio-economic status, who have the ability to demand high opportunity costs of time, prefer to engage in time-consuming rural excursions. We explore this point next from both conceptual and empirical stances.

3. Conceptual model of leisure behaviour

3.1. Evolution of leisure behaviour and rural tourism

We characterise rural tourism as part of the leisure behaviour of a household. Leisure goods are service goods that have spatial and temporal simultaneity: to consume leisure goods it is necessary to visit the place of production. Figure 1 illustrates the evolution of leisure behaviour including overnight and day trips. A household's leisure utility function, U_1 , is determined by the amount of time available for leisure and consumption of market goods. Time for leisure is measured on the horizontal axis and market goods on the vertical axis. W_1 denotes a low wage level and is tangent to the line U_1 at point A . At this point, a time-using leisure type such as TV viewing is undertaken, in which the consumption of market goods is low: the opportunity cost of time is low. The line H_1 depicts the ratio of the combination of time and market goods for this type of leisure.

Following an increase in wage rate as a result of economic development, the wage line W_2 is tangent to U_1 at point B . This rising wage rate means that the opportunity cost of time also increases, which results in time saving and market goods using types of leisure activities, such as short duration overseas package trips, being undertaken, as depicted by line H_2 . At this stage, the demand for rural tourism is still not apparent.

Rural tourism leisure is depicted by the line H_3 , and is more time-using but with a lower consumption of market goods. The slope of H_3 is therefore steeper than that of H_2 . Equilibrium for the new utility function U_2 is attained at point C . Here, the evolution from point A to point C can be decomposed into two effects: the effect of evolving from points A to B , and the effect of evolving from points B to C . The first effect is the substitution effect due to the rising opportunity cost of labour caused by the rising wage rate, which leads to an increased preference for work. The second effect is explained partly by the income effect, which results in an increased preference for leisure time. However, the income effect does not entirely explain the shift from B to C . This is because rural tourism is a niche market, which means that not all those enjoying higher income choose to partake in rural tourism: only people having a pre-existing

preference for rural life and the environment do so. To understand this shift fully, we must therefore in addition to the income effect consider a second cause, which we term the rural preference effect. Thus the shift from B to C is explained by the interaction between the income effect and the rural preference effect. Rural tourism takes place when this mixed effect of income and rural preference is greater than the substitution effect.

We can summarise this relationship as follows:

Income effect + rural preference effect > substitution effect

$B \rightarrow C$ shift > $A \rightarrow B$ shift

Time-using effect > time-saving effect

Rural tourism can therefore be expected when the income effect plus rural preference effect ($B \rightarrow C$ shift) is greater than the substitution effect ($A \rightarrow B$ shift). In other words, the dominance of the time-using effect over the timesaving effect is a feature of rural tourism as leisure behaviour, resulting from a rural preference among participants.

This effect can be observed not only in the light of time-series but also in cross sectional population analyses. However, the above model does not explain how this rural preference is formed in the household, and in the following section we consider ways in which this might be achieved.

3.2. Home production and rural preference

Based on the considerations outlined above, the purpose of this section is to give further conceptual consideration to the question of why households possessing a rural preference actually undertake rural tourism. To this end, wage rate is assumed as given to focus upon the rural preference effect. We make the following assumptions, which have previously been neglected.

First, it becomes increasingly necessary for urban habitants find ways in which to ease stress. In this era of joint participation by both sexes, home production is not limited to traditional household jobs such as cooking, cleaning, washing and childcare, but also now extends to leisure behaviour conducted by the family unit as a whole, which should thus also be included in the definition. On the one hand, it is nowadays common in urban areas to buy leisure service goods from markets. On the other hand, rural tourism can be regarded as a form of leisure goods, using both time and the rural environment to experience farming and rural life. It is therefore possible for visitors to positively combine their time and the rural resources to create a diverse composition of recreational forms, unlike market produced leisure goods. This flexibility is major difference from the urban amusement parks, in which visitors can only choose from a limited range of activities. In this sense, rural tourism depends on home production much more than other urban leisure behaviours. Home produced leisure goods are made by combining leisure time and other market goods. Home produced leisure goods

influence household utility in a different way from mere leisure time. This is because the level of home production is converted into utility function as consumption, because household utility is a function of both leisure time and consumption, see for instance Granou (1977). Leisure goods thus work either at the utility level through home production, or by their purchase from the market. However, leisure goods have not been fully discussed in the context of home produced leisure goods. Thus we concentrate here on home production activity as leisure behaviour.

Second, there are several ways to increase the level of household utility. One is that increasing wages can lead to a tendency to increase the number of hours of paid work undertaken by a household, leading to a decrease in the level of home production. This is a substitution effect and eventually results in an increase in household utility level. However, sharp rises in the opportunity cost of labour are unlikely in industrialised countries. Alternatively, the income effect can bring about an increase in the utility level of a household: the most common example of this effect is the assets effect. However, another factor must be involved because as mentioned above the income effect does not completely explain the demand for rural tourism. The third cause is an upward shift in the home production function, which also increases the level of utility. Innovations such as the widespread adoption of labour saving electric appliances are traditionally invoked as causes of the shift in the home production function. However, it should be noted that a similar effect relating to innovation applies to service goods such as leisure behaviour. Thus, it is considered that partaking in rural tourism has a similar effect to innovation on home production.

Third, why do households make the shift in the home production function? Of course there is no guarantee that an upward shift always happens for every household. We consider that the level of rural preference is reflected in the shift of home production function. However, the intensity of this preference is assumed to differ between households. Thus the more intensive the rural preference, the higher the shift in the home production function. This is because increasing rural preference leads to the substitution of market produced leisure goods with home produced ones, making it easier to produce leisure goods at home. If the expected utility level after the shift in home production function is higher than the present level of utility, it is rational for the household to make the shift. This selectivity is a major difference between the innovation of material goods that diffuse universally and the shift of home production function through differences in rural preference. This also implies that downward shifts might also occur in some cases.

Figure 2 depicts this case of subjective equilibrium of one household of time allocation and home production. The horizontal axis measures time and the vertical axis consumption. Here, other home production such as house chores is assumed as given because the focus should be on leisure behaviour. In industrialised countries household chores are carried out using electrical and gas appliances, so this assumption is not

unrealistic. Thus, the shape of the home production function is determined by the level of rural tourism activity.

F_0 is the present home production function. oi shows the income effect of assets because it represents a character of up-market households. Subjective equilibrium with the condition of wage rate W is attained on F_0 at the point a for home production and on U_0 at the point e_0 for household utility. The household allocates time of ($=ij$) to home production, fm ($=js$) to paid labour and mt solely to leisure. If the home production function is shifted from F_0 to F_r (depicted by the broken curve), a new subjective equilibrium will be established at point b on F_r and point e_r on U_r , indicating that a higher welfare level will be attained. This is because the shift of the home production function means that the home production of leisure is done more efficiently than before, as the productivity of home produced leisure goods increases. In this case, the time allocated for home production will increase from of to og even if leisure time decreases from mt to ht . However, the purchase of leisure goods from the market decreases from e_0r to $e_r y$. This is because rural tourism is a time-using activity. Consumption of home produced goods increases from aj to bk , an increment of bn , which is attributed to improved efficiency of home production. In this case, higher efficiency means that rural tourism works in easing stress and effectively imparts educational effects on family members, reducing their need to buy leisure goods for these purposes in the market. Thus, in a household with a high rural preference it is recognised that there is a similar effect to innovation for making home production more efficient. The stronger the rural preference, the larger the shift in the home production function.

Conversely, if rural preference is not strong enough to cause an upward shift, the expected utility level after the shift U_n could be lower than the present U_0 : it is therefore not rational to make the shift in the home production function from F_0 to F_n , as illustrated in Figure 3. In this case, those households that do not undertake rural tourism expect the downward shift to result in lowered utility. Households preferring to partake in urban leisure tend to do so, rather than engage in rural leisure.

It is considered that a household that participates in rural tourism has efficiently shifted its home production function upwards. It is also assumed that such households have a higher productivity of home production in terms of rural tourism than households that do not participate in rural tourism.

Therefore, only an upward shift that brings about a higher utility level is meaningful.

In this context, it is safe to say that rural preference is an indicator that raises the utility level by shifting the home production function upwards for households that have a high opportunity cost of labour. In other words, the magnitude of the shift differs from one household to another because of differences in the intensity of rural preference.

The above model explains why those households that have a high opportunity cost of labour select leisure behaviour such as rural tourism. This model also illustrates that the shift in the home production function is determined by the intensity of rural preference.

This raises the important policy question of how to promote an upward shift in the home production function.

Therefore, we can assume the following:

$$\text{maximize } E(u) = U(c, l) \quad (1)$$

$$\text{s.t. } E(z) = rf(h) \quad (2)$$

$$z = f(h) \quad (3)$$

$$r = g(\mathbf{x}) \quad (4)$$

$$T = t_w + h + l \quad (5)$$

$$y = wt_w + a \quad (6)$$

$$c = E(z) + y \quad (7)$$

where,

$E(u)$ = expected household utility

$U(.)$ = household utility function

$E(z)$ = expected household production function

z = home products

$f(h)$ = present household production function

r = level of rural preference, where $r > 0$

$g(.)$ = rural preference function

\mathbf{x} = vector of household factors influencing rural preference

w = wage rate

t_w = paid labour time

y = expenditure on bought market products

a = unearned income

c = consumption

l = leisure time

Supposing that the level of rural preference $r > 1$, the expected household production is greater than the present one ($rf(h) > f(h)$), meaning the upward shift resulting in $E(u)$ is greater than the present level of utility, U_0 . By contrast, suppose $0 < r \leq 1$, then, $rf(h) \leq f(h)$, meaning that the downward shift resulting in $E(u) \leq U_0$. These relationships are not predetermined, but are instead empirically determined.

It is important to clarify the factors that induce the shift: this is an empirical question, which we approach by estimating the rural preference function in a real system.

4. Data and Methodology

It is often difficult to assess the demand for rural tourism as a whole because of the scarcity of high quality data. The data used in this paper were obtained from the 16th National Survey on Tourism Behaviour in Japan, conducted by the Japan Tourism Association in 1994 using a two-stage random sample drawn from throughout the country. In these survey data, trips connected with rural tourism include visiting pick-your-own farms (e.g. for apples, pears, strawberries, grapes or other agricultural

produce) and collecting clams at coastal fish farms. Although the data do not cover all types of rural tourism, as far as we are aware, they are the only data that enable the analysis of demand characteristics of rural tourism in the context of tourism behaviour as a whole, including demographic aspects at the national level.

For the purpose of this section, the data are classified into two groups depending on whether individuals made an overnight trip to pick-your-own (PYO) farms or not (hereafter referred to as visitors and non-visitors), which were the only farm related trips included in the survey. The sample size was 2387, comprising 46 visitors and 2341 non-visitors. The sample size of visitors is small, clearly indicating that visiting a PYO farm is a niche market activity. It also indicates a fact of severe data availability on this topic and suggests that comparison of the two groups also implies not only the comparison between visitors and non-visitors, but also the comparison between visitors and the average characteristics of all tourists.

5. Empirical model

Based on the above analysis, the main purpose of this section is to estimate the rural preference function using a binominal logit model and then to identify the most important factors leading to the formation of a rural preference.

The estimation model with respect to PYO farm visits undertaken by a household is as follows:

If $E(U) > U_0$, visiting a PYO farm is rational. Then $\lambda = 1$ (8)

If $E(U) \leq U_0$, visiting a PYO farm is not rational. Then $\lambda = 0$ (9)

When the target utility for making a trip equals the opportunity cost for visiting PYO farms, $\lambda = 1$ indicates that a household will visit PYO farms.

When the above condition does not hold, $\lambda = 0$; the household will not visit PYO farms.

Where $E(U)$ = expected utility after the shift in the home production function,

U_0 = present utility level of the household,

$$\lambda = \ln\left(\frac{\theta}{1-\theta}\right) \quad (10)$$

$$\lambda = \beta_0 + \sum_{j=1}^m \beta_j x_j + \varepsilon \quad (11)$$

Where

θ : probability of making a trip to PYO farms

λ : the natural log of odds

β_j : parameters to be estimated
 x_j : explanatory variables
 \ln : natural logarithm
 ε : stochastic error

The dependent variable refers to the visiting experience to PYO farms; visiting households are assigned a value of one, non-visiting households are assigned a value of zero. Six explanatory variables, the actual variables of the vector x , are used here for overall evaluation to avoid possible multicollinearity. All variables are dummy variables because they all describe qualitative data. Those explanatory variables are used to be consistent with up-market and niche market characteristics. Therefore, we consider three effects: the substitution effect, income effect, and rural preference effect.

Two variables relating to the income effect and substitution effect are described below.

- 1) **Academic background:** college graduates are assigned unity, otherwise zero. In connection with the framework, this variable represents the mixed effects of the substitution and income effects. Because this mixed effect is assumed to be larger than the substitution effect, a higher academic career results in higher social status and income level. Thus, those who have a stronger academic background can afford to go out. Therefore, a positive sign is expected in the model.
- 2) **Housing situation:** those owning their house with garden and with no mortgage payments outstanding score unity, otherwise zero. Those in a better housing situation tend also to be able to afford to go out. This is because they are more satisfied with their current lifestyle, an asset effect that is a type of income effect. Thus, a positive sign in the model is also expected here.

The remaining four variables below are proposed to be factors contributing to a rural preference effect.

- 3) **Size of municipality in which an individual is based:** a metropolitan area scores unity, otherwise zero. It is supposed that the larger the conurbation, the more the inhabitants seek a rural atmosphere.
- 4) **Those who enjoy making trips** score unity and otherwise score zero. Individuals who enjoy going to rural areas more tend also to visit farms more often.
- 5) **Method of information gathering:** using travel related magazines results in a score of unity, other methods score zero. The more people are interested in travelling to rural areas, the more they tend to actively seek information.
- 6) **Demanding levels of quality of service:** complaints about visits. Individuals who are more demanding in respect to the quality of services and goods offered throughout the trip are more likely to seek qualities such as freshness and authenticity of rural produce. PYO farms can satisfy one of these demands.

Concerning complaints, three variables are used, one of which is used for each estimation: these centre on restaurants, level and condition of facilities, and souvenirs. Individuals filing complaints score unity, those who did not score zero.

The expected signs of all these variables are positive.

6. Results

Estimates were determined using the maximum likelihood method. Table 1 gives three estimation results that each used a different type of complaint variables. The expected sign conditions were all satisfied and the results of likelihood ratio test on the model significance registered at the level of 1% significance. The parameter estimates listed were standardized to allow easier comparison between estimates. Although due to the small sample size we should be very cautious when interpreting these results, we cannot ignore the many commonalities in the demand characteristics of rural tourism found here that were similar to those found in previous studies in terms of the characteristics of up-market and niche market.

Academic background was positively associated with the number of farm visits. However, it was not sufficiently statistically significant (10%, 20%). This suggests that the income effect is not much larger than the substitution effect.

The housing parameter, i.e. own house with garden with no outstanding mortgage, was positive, but not highly significant (10%). This suggests that the income effect is not particularly influential on the number of visits.

With respect to parameters relating to the rural preference effect, the variable concerning living in metropolitan areas was positive, but not significantly so (10% or 20%).

Conversely, 'being fond of making trips' was the largest among the parameters positively connected with the PYO farm visits (5% significance). This means that people oriented towards outdoor activities tend to prefer visiting PYO farms.

Similarly, the parameter for the variable describing the collection of travel information was positive (5% significance), indicating that visitors collect information in a positive manner.

All three estimates about complaints also showed highly positive significance (1% or 5%).

These results suggest that a rural preference is more influential on farm visits than either the income or substitution effects, suggesting that a rural preference is an important part of the lifestyle of visitors. On the other hand, this group of people is more demanding in terms of the quality of services they receive when travelling. We suggest that this is because this group experiences higher levels of mental stress during their urban activities, and consequently perceive a greater need to relax in the rural open spaces. These factors are reflected in the rural preference expressed by the visitor group.

Consequently, the active provision of information in relevant magazines, quality control of services provided and authentic local products are crucial for rural tourism operators if they are to attract greater numbers of potential visitors. This is because these factors are considered to be essential for the upward shift in the home production function, and thus are effective measures to enhance rural preferences among urban people. In this sense, the question of how to harmonize the development of authentic rural tourism while preserving the rural environment must be considered. This highlights the importance of more coherent integration between farming policy and rural policy.

7. Summary and Conclusions

We have evaluated the rural tourism behaviour of households by focusing on PYO farms in Japan, from the perspective that leisure behaviour should be included in home production. The main points discussed in this paper are as follows:

- 1) Demand for rural tourism by urban habitants is characterised by the income effect and the rural preference effect (i.e. desire for experience of rural life and the rural heritage). We suggest that rural tourism is an integral part of home production and that individuals expressing a strong rural preference undertake rural tourism as a leisure activity that increases their utility level. This is because a rural preference causes an upward shift in the home production function to make home produced leisure (i.e. rural tourism) more efficient, resulting in a higher household utility level.
- 2) The results of the logit model suggest that visitor's rural preference plays an important role in determining the demand for rural tourism and also that it is already an integral part of their lifestyle. Among the factors determining visitor's rural preference, an appreciation for the high quality of goods is observed, indicating that this group is demanding with respect to the quality of services received. Although it is too early to generalise the profile of rural tourists due to the severe data availability, it cannot be denied that these are the characteristics of an up-market and niche market, which is roughly similar to early findings in Western Europe and Japan concerning rural tourists.
- 3) There are several policy implications. It is important to enhance rural preference by providing authentic local products, service and information and preserving the rural environment. These are effective measures to increase the magnitude of the shift in the home production function, which will attract potential visitors who have an existing rural preference. In this respect, the need for integration between farming policy and rural policy will increase in the future. Finally, considering rural tourism as a form of home production suggests that the educational effects of rural tourism should be quantified: this is another topic that merits further investigation.

References

Blunden, J. and Curry, N. (1998). *A Future for Our Countryside*. Oxford: Blackwell,

- 132-163.
- Becker, G. S. (1976). *The Theory of Human Behavior*. Chicago: the University of Chicago Press. 87-149.
- Butler, R., Hall, C. M. and Jenkins, J. (1998). *Tourism and Recreation in Rural Areas*. Chichester: John Wiley & Sons.
- Gronau, R. (1977). Leisure, Home Production, and work: the theory of the allocation of time revised. *Journal of Political Economy* 85(6): 1099-1123.
- Haines, M. and Davies, R. (1987). *Diversifying the Farm Business*. Oxford: BSP Professional Books.
- Kooreman, P. and Wunderink, S. (1997). *The Economics of Household Behaviour*. London: Macmillan Press.
- OECD, (1995a). *Niche Markets as a Rural Development Strategy*. Paris: OECD.
- OECD, (1995b). *Niche Markets and Rural Development*. Paris: OECD.
- Ohe, Y. (2001). Farm pluriactivity and contribution to farmland preservation: A perspective on evaluating multifunctionality from mountainous Hiroshima, Japan. *Japanese Journal of Rural Economics* 3: 36-50.
- Ohe, Y. and Ciani, A. (1999). Activities of farm tourism and attitudes of the operators: Japan-Italy comparison, *Proceedings of the 12th International Farm Management Congress*, 801-811. Durban.
- Owen, J. D. (1970). *The Price of Leisure*. Montreal: McGill-Queen's University Press.
- Sharpley, R. (1996). *Tourism & Leisure in the Country Side 2nd Edition*. Huntingdon: ELM Publications, 73-80.
- Sharpley, R. and Sharpley, J. (1997). *Rural Tourism: An Introduction*. London :International Thomson Business Press, 45-65.
- Sinclair, M.T. and Stabler, M. (1997). *The Economics of Tourism*. London and New York: Routledge.
- Swarbrooke, J. and Horner, S. (1999). *Consumer behaviour in Tourism*. Oxford: Buterworth-Heinemann.
- Opperman, M. (1997). *Rural tourism in Germany*. In Page, S. J. and Getz, D. (eds). *Business of Rural Tourism: International Perspectives*. London :International Thomson Business Press.
- Ryan, C. (1995). *Researching Tourist Satisfaction*. London and New York: Routledge.
- Watanabe, Y. (1998). Yoka no Ima, sosite kore-kara (Holiday now and future), Leisure Development Center (eds). *What Is the Nature for the City?* Tokyo: Nobunkyo, 169-209.
- Ueno, Y. (1974). Reija no Syouhi to Tenbou (Leisure consumption and prospect). In Abe, M. (eds). (Reija no Keizai (*The Economy of Leisure*)). Tokyo: Nihon Keizai Shinbun-sha, 43-105.
- Yamazaki, M., Koyama, Y. and Oshima, J. (1993). Green Turizumu (*Green Tourism*). Tokyo: Ie no Hikari Kyokai.

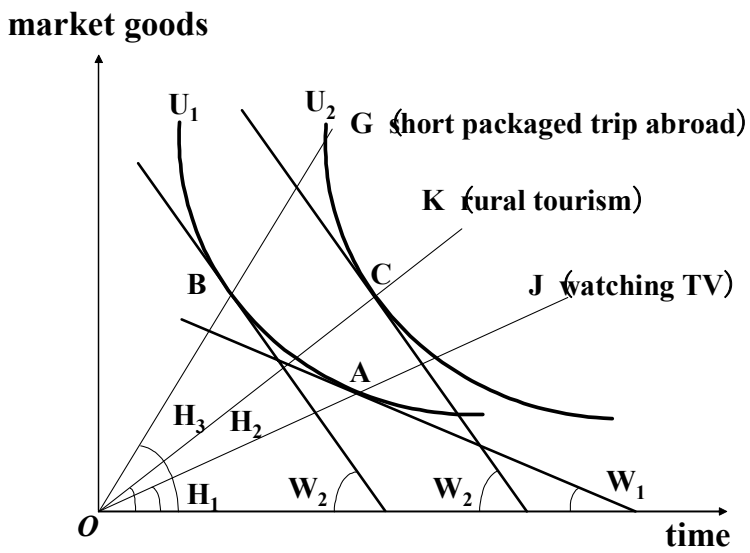


Figure 1 Evolution of household leisure behaviour

Note: Figures in parentheses are Wald Chi-square values.

Variables	Standardized Estimate		
	1	2	3
College graduates	0.1210* (2.8679)	0.1149+ (2.5944)	0.1167+ (2.6761)
Own house with garden	0.1780* (3.3899)	0.1630* (3.0849)	0.1598* (2.9978)
Living in metropolitan areas	0.1370* (3.1225)	0.1294* (2.7622)	0.1252+ (2.6050)
Being fond of making trips	0.2986** (5.0873)	0.3025** (5.2370)	0.3041** (5.2869)
Information gathering by travel related magazines	0.1454** (3.9084)	0.1587** (4.7475)	0.1562** (4.5722)
Complaint: quality of service of restaurants	0.1403*** (7.9353)	-	-
Complaint: quality of souvenirs	-	0.1139** (4.1462)	-
Complaint: facilities are not neat	-	-	0.0967** (4.0546)
Sample size	2387	2387	2387
-2log(LR)	34.232***	27.735***	27.434***