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3) Attitude Formation toward Internalization of Educational Tourism in Agriculture: A Way to New Viable Role of Farm Sector

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This paper econometrically evaluated the hypothesis that operators need to expand their identity from a traditional to an enlarged identity that will enable them to successfully embark on a new activity such as educational service that attracts the growing number of visitors by focusing on the Educational Dairy Farms (EDFs). First, the main findings were that the EDF successors tended to have longer and more varied training experience across the country and/or abroad than their counterparts in ordinary dairy farms and to have higher female involvement. This means that EDF successors have both a wider perspective and more extensive human networks from social learning opportunities. These aspects should be promoted further as factors that will enable the next generation of operators to develop an enlarged identity. Support measures will be more effective if expansion of identity is considered in addition to conventional training to improve technical skills.

1. Introduction

Educational tourism in agriculture is attracting growing attention as a potential new market segment of rural tourism along with mounting demands for experience-oriented tourism. This activity is an emerging opportunity for farm operators to expand their activities from traditional ordinary farm production to farm activity that involves direct communication with consumers by providing intangible educational services as a measure of farm diversification amid stagnant consumption of farm products. This educational activity also can be expected to create a new social role for the farm sector by informing consumers about the close connection between life and food, and about rural heritage — factors that are often forgotten in the modern urban daily routine. Examples of such activities that already have been implemented are the Farming And Countryside Education (FACE) program in the UK (Graham, 2004; for more recent developments, Gatward, 2007), Ferme Pédagogique in France, Fattorie Didat-tiche in Emilia-Romagna in Italy (Canavari et al., 2009), children's gardening in the USA (Moore, 1995) and educational dairy farms (EDFs) in Japan (Ohe, 2006, 2007).

This educational activity, however, is not always economically viable because some farmers provide the educational services free of charge on a voluntary basis, while others levy a service charge. As a result, it is necessary to clarify the activity operator's attitudes toward these differences in charging behaviour because this point is crucial to the sustainable development of educational tourism in agriculture. Thus, this paper examines the attitudes of farm operators toward the educational activity by focusing on the next-generation successors who are already involved in the operations of an EDF. The EDFs comprise a network of dairy farmers in Japan that aims to provide educational services, and is one of the most advanced and organized programs of farmers that provide educational services to farm visitors.

The hypothesis here is that a farmer's identity determines their attitude toward educational tourism. Unless a farmer's identity changes from that of a conventional farm producer to that of

a farm resource manager with a wider perspective on conducting tourism, a new activity such as educational tourism is not well implemented. To examine this hypothesis, this paper has investigated the experience and views of EDF operators of the younger generation toward the educational activity on the basis of data collected by questionnaire surveys directed to-ward the successors of both EDFs and ordinary dairy farms. To clarify the point, I compare the attributes of respondents between EDFs and ordinary dairy farms. Then, I evaluate the behaviour of EDFs toward service charging, which is considered as a criterion of difference in identity. Finally, I discuss policy implications regarding the viability of educational tourism in agriculture.

2. Literature Review

Economic approaches to identity issues were firstly explored fully by Akerlof and Kranton (2000, 2002, 2010). Akerlof and Kraton (2000) defined identity as a person's sense of self and proposed the utility function that identity is associated with different social categories and how people in these categories should behave. Akerlof and Kraton (2002) investigated the connections between school and work. Akerlof and Kraton (2010) also considered gender and race issues in connection with work and minority poverty. Further, Akerlof (2007) dealt with the relationship between norms and macroeconomics. From a conceptual viewpoint, Sen (1977) noted the significance of commitment observed in groups such as class and community and Sen (1985) also mentioned that identity is associated with rule-based con-duct. Sen (2006) discussed the idea that norms and identity will mitigate violence. Bowles (1998) focused on endogenous preferences, such as motivation and values, influenced by economic institutions. Nevertheless, empirically agriculture and tourism have not been explicitly studied in relation to identity issues.

Ohe (2011) evaluated the productivity of rural tourism activities in Japan, but DEA and the stochastic frontier function have not been applied yet. Educational tourism in agriculture has not been extensively explored except for reports by Ohe (2011, 2012), which dealt mainly with internalization of the educational externality generated by dairy farming, and not directly with

the identity aspect of farmers. To summarize, to my knowledge there has not been an exploration of identity and an evaluation of efficiency with regard to farm diversification and rural tourism. It is for this reason that I conducted this study.

3. Definition of Identity and Hypothesis on Operator's Identity

Here, I define the identity of operators conducting the educational tourism; the identity sets a norm of operators about what domain of activity is undertaken as an economic activity. If the operators conduct an activity within their norm, they are willing to do it and they gain high satisfaction, and therefore the activity will be conducted efficiently. If the activity is not within their norm, the operators are less willing to do it and thus the performance of that activity will not be so efficient.

Keeping this in mind, I consider the relationship between a farmer's identity and the degree of diversification of the activity, i.e. milk production and the educational activity, based on observation of the EDF operators' behaviours. To simplify the discussion, suppose that a farmer might have two types of identity: traditional identity and enlarged identity. For those with traditional identity, the norm is that their main activity is farm production, so that the educational service is just a voluntary activity offered free of charge in their spare time. Thus, their managerial aim is to maximize milk production to the best possible extent. On the other hand, for those with enlarged identity, the norm is that they should engage in multiple economically viable activities including the educational service. Therefore, they will levy a service charge for the educational service in order to make it viable. Their aim is, thus, to attain overall managerial efficiency in farm resource allocation among all activities; this means that operators with enlarged identity have a wider perspective toward farm diversification than those with traditional identity.

In reality, however, we cannot observe identity itself, but solely behaviours that reflect our identities. In practice, if operators levy a charge for an educational service, we can say that they

are oriented toward the viability of that service. For this reason, it is considered that operators who charge have enlarged identity. In contrast, if EDF operators do not levy a charge, it is considered that they have an intermediate identity between the traditional and the enlarged identities. In this respect, whether a farmer levies a service charge is an easily observable criterion that indicates the identity of that farmer.

4. Data and Methodology

Data were collected by a questionnaire survey directed only toward EDFs that were mainly run by families to narrow data variation. Although the majority of EDFs are family farms, the EDF program also includes public ranches, ranches run by cooperatives and the dairy industry, college ranches and agricultural high schools. These types of non-family farm were not included in the present survey. The survey was implemented jointly with the Japan Dairy Council, which selected farms and is the founding body of this survey. The survey was sent by surface mail from the author's office to 248 farms and returned between September and December 2012. The response rate was 141 farms (56.8%). Over the same period, another questionnaire was distributed by surface mail to ordinary dairy farms through regional dairy cooperatives, which selected 470 mainly family-run farms across the country for comparison with the EFDs. The response rate was 48.5% (228 farms).

I conducted statistical tests, Chi-squared and t tests to compare the successors' attributes and farm diversification behaviours between EDFs and ordinary dairy farms. A probit model was applied to statistically evaluate factors that potentially influence an operator's behaviour toward charging for educational services.

5. Results

5.1 Attributes of respondents

First, the attributes of all respondents were tabulated in order to compare them between respondents from ordinary dairy farms, termed “ordinary respondents” hereafter, and those from EDFs (Table 1). The average age of the ordinary respondents was younger than that of the EDF respondents. In this sense, the EDF respondents were more experienced than the ordinary respondents. Interestingly, the proportion of females was much higher, nearly 20%, among EDF respondents than among ordinary respondents (18.4% and 3.5%, respectively). This fact indicates that female successors will play an important role in EDF activity. In terms of milk production, EDFs were larger. With respect to the type of management, the proportion of corporate family farms was higher among EDFs (17%) than among ordinary farms, of which more than nine out of ten were non-corporate family farms.

Furthermore, the EDF respondents had more experience abroad and/or across the country in terms of their job-training experience in dairy; that is, over 70% of the EDF respondents had job-training experience, whereas 36% of the ordinary respondents had no job-training experience (Table 2). In terms of job-training abroad, more EDF respondents went to Europe, where farm activity tends to be more diversified than other areas, as compared with ordinary respondents (40% and 25%, respectively). Furthermore, the EDF respondents tended to stay abroad for a longer period than the ordinary respondents. Another interesting difference between the two groups was observed in the content of the job-training; the EDF respondents were more eager to learn processing skills and skills related to the exchange with consumers, whereas the ordinary respondents were more inclined to learn dairy production skills.

Table 3 indicates how diversified activities are conducted differently between the two groups. It is apparent that EDFs have a more positive attitude toward diversified activities, including tourism-related activities such as running accommodation facilities and restaurants, than ordinary farms.

In short, as compared with the ordinary respondents, the EDF respondents ran larger farms of a more corporate nature with more female involvement, and had more active job-training experience. These facts indicate that the EDFs respondents had a wider perspective on dairy activities.

5.2 Identity of EDF operators and influential factors

Now I examine the behaviour of levying a charge for the educational service, which reflects the position of how EDFs treat this service (Table 4). Those who levy a charge entirely or partially on educational services accounted 53.9% of the respondents; the rest did not levy a charge, or levied a charge case by case. Because the charging behaviours were dichotomously divided in this way, I have used this classification as an indicator of differences in identity. Thus, it is reasonable to say that those EDFs who levy a charge have an enlarged identity, while those EDFs who do not levy a charge have an intermediate identity between the traditional and enlarged identities.

By utilizing this variable of whether respondents levy a charge (yes=1, no=0), I used a probit model to clarify determinant factors for an enlarged identity. The explanatory variables use in this model comprised the following three vectors: experiences of social learning, level of educational activity, and respondent's attributes. Regarding the variables that represent social learning experiences, I first considered what changes occurred in the respondent's consciousness, that is, whether they had an expanded human network (yes=1, no=0). This is because the EDF activity creates opportunities for respondents to get to know other EDF farmers, consumers, and school teachers, and enables the operators to gain both a wider perspective and prospects for the future direction of the educational activity by exchanging experiences and ideas with these people who have various backgrounds. The second variable representing social learning experiences was job-training abroad: specifically, whether the respondents had experience of job training in farm management (yes=1, no=0). This is because knowledge of farm management

enables operators to clearly recognize the potential of the educational activity as a new farm business.

As the first variable representing the level of EDF activity, I used the year that the EDF started, which encompasses the effect of accumulated experience on the educational activity. This is because more experienced operators can improve the quality of service, leading to raised awareness of levying fees due to the increased opportunity cost for the educational service. Specifically, this variable was coded as 1 for a starting year of 2004 or before, or 0 for a start year of 2005 or after. For the second variable, I used the number of visitors: 100 or more visitors was coded as 1, and fewer than 100 was coded as 0. Because this variable, which represents the size of the educational activity, tends to have a high correlation with other variables, I also used another variable that similarly represents the level of educational activity: namely whether the EDF provided a combined menu of tasks (yes=1, no=0). This is because the higher the number of visitors to the farm, the more the educational menu evolves from experiencing an individual operation, e.g., feeding or milking, to experiencing a combination of individual operations and food experiences, such as making butter.

As a variable of respondent's attribute, I used the sex of respondents where a female was coded as 1, while a male was coded as 0. This is because female operators often play a leading role in the educational activity, as shown in Table 1, whereas traditionally women have taken a supplementary role on the farm. For this reason, farm women are eager to develop their own area where they can be more economically and mentally independent. For example, female operators are generally better at teaching children softly with a smile and a gentle voice. Thus, the EDF activity makes it possible to utilize the potential of females as a farm resource. Consequently, it is reasonable to assume that the involvement of a female operator promotes a service-charging behaviour.

The results of the analysis, as shown in Table 5, were satisfactory because the estimation parameters had the expected signs and a 10% or higher significance level was attained. The results clarified that all of these factors, i.e., expansion of human networks, skills of farm management, accumulation of experience in EDF activity, positive involvement in EDF activity, and employing female operators have a positive influence on service-charging behaviour.

To summarize, it is effective to encourage social-learning opportunities, promotion of female involvement, enhancement of EDF activity in terms both of quantity and quality of the education service. These are factors that promote transformation of the operators' identity from a traditional to an enlarged identity that is more adaptable toward the new social role of dairy sector.

6. Discussion and Conclusion

Although farm visiting is gaining popularity as a type of experience-oriented tourism, this new service has not yet become an economically viable activity for farmers. In the author's view, it is not enough to solely address this issue from a technical aspect, such as improving skills, we also need to approach it from the aspect of the operator's identity, a factor that has been addressed rarely in the arena of rural tourism.

From this perspective, first, this paper statistically compared differences between EDFs and ordinary dairy farms by focusing on the views and experiences of the next-generation successors. The results revealed that EDFs operators were more experienced in job-training, had a positive attitude toward farm diversification, and had a higher percentage of female involvement in the educational activity as compared with their counterparts of ordinary dairy farms who are considered to have a traditional identity.

Second, I explored factors that influence service-charging behaviour among EDFs because those EDF operators who levy a charge for the educational service are considered to have an enlarged

identity. A number of factors were revealed to be influential, indicating that it is crucial both to widen operators' perspective through social learning opportunities and expansion of human networks and to establish skills of farm management. The study also clarified that female operators and experienced operators have a more positive attitude toward charging for the educational activity. Therefore, these aspects are effective factors that lead to the development of an enlarged identity.

Consequently, because simply looking at the charging issue does not provide a solution to the viability of the educational service in the farm sector, it will be necessary to redefine an operator's identity in line with the sustainable development of educational activity in the farmyard, in addition to improving technical skills for that activity. For this purpose, it is effective to design support measures toward widening the perspective of young operators, providing more job-training opportunities especially for learning farm management skills, and nurturing female facilitators. Thus, it is safe to say that we need to consider all of these comprehensive measures in the continuing development of educational tourism in agriculture.

Tables and Figures

Table 1 Attributes of respondents and dairy production

Item	Type of dairy farms		Test result	Test method
	Ordinary	EDF		
Milk production (t/farm)	399.9 (202)	731.1 (140)	N*	t test
No. of milk cows (Holstein)	55.1 (221)	72.1 (133)	N**	t test
Age of respondents	34.5 (226)	43.1 (137)	N***	t test
Starting age of farming	23.9 (224)	25 (127)	N+	t test
Sex (female)	3.4 (224)	19.1 (136)	***	Chi-square

Source: Questionnaire surveys of ordinary dairy farms and EDF conducted during September to December in 2012.
Notes: 1. when t test was employed, N means unequal variance, and E means equal variance between the two groups.
2. ***, **, *, + indicate 1%, 5%, 10%, 20% (reference) statistical significance, respectively, and ns means not significant.
3. Sample size is indicated in parentheses.

Table 2 Experience of job training		%	
	Ordinary	EDF	Test result
Place of job training			
Only in the country	49.1	39.0	*
Only abroad	1.3	6.4	**
Domestic & abroad	11.8	26.2	***
No experience either	36.0	24.1	**
Destination of job training abroad			
North America	6.6	15.6	***
Europe	4.4	17.0	***
Oceania	3.1	7.8	**
Other	1.3	2.1	ns
Period of job training abroad			
Les than three months	7.0	15.6	***
3 months-5 months	0.4	1.4	ns
6 months-11 months	0.9	5.7	***
one-two years	4.0	10.6	**
more than three years	0.4	1.4	ns
Topic of job training			
Dairy production skills	10.0	19.9	***
Dairy processing skills	0.9	7.0	***
Management skills	4.4	11.4	**
Exchange with consumers	0.4	7.1	***
Exchange with farmers	5.3	10.6	*
Other	1.3	2.8	ns
Source: Same as in Table 1.			

Table 3 Implimented diversified activity (multiple answers)			%
Item	Ordinary	EDF	Test result
Processing of milk	1.8	28.4	***
Raising and selling of milk cow	6.1	11.4	*
Accommodation facility	0.4	12.1	***
Restaurant	0.0	9.9	***
Soft/ ice cream	1.3	25.5	***
Café'	0.9	11.4	***
Ham and Sousages	0.0	3.6	***
Sweats	0.4	13.5	***
Souveniors	0.0	8.5	***
Other	0.4	4.3	**

Source: Same as in Table 1.

Table 4 Attitudes toward EDF service charge

Levying service charge	%	No. respondents
Whole charge	29.8	42
Partial charge	24.1	34
No charge	33.3	47
Variable	7.1	10
Other	3.5	5
No answer	2.1	20
Total	100.0	158

Source: Same as in Table 1.

Table 5 Factors determining behaviour of leying a service charge (probit estimation)

Explanatory variables	Model I		Model II	
	Standard	Robust	Standard	Robust
Job-training abroad: topic of farm management (yes=1, n=0)	1.2273* (1.65)	1.2273** (2.16)	1.1221** (2.04)	1.1221** (1.98)
Change afer EDF activity: expansion of human network (yes=1, no=0)	0.3459*** (2.95)	0.3459*** (3.09)	0.2770*** (2.63)	0.2770*** (2.63)
Type of educational service: individual and combined menu (yes=1, no=0)	1.7467*** (4.92)	1.7467*** (4.71)	–	–
Starting year of EDF in 2004 or before (yes=1, no=0)	1.0603*** (3.87)	1.0603*** (3.62)	0.4747* (1.68)	0.4747* (1.67)
100 visitors or more (yes=1, no=0)	–	–	0.8331*** (2.72)	0.8331*** (2.65)
Female (female=1, male=0)	0.7800** (2.17)	0.7800** (2.28)	0.6805** (2.17)	0.6805** (2.13)
Constant	-2.1157 *** (-4.20)	-2.1557*** (-4.24)	-1.4893*** (-3.36)	-1.4893*** (-3.29)
Sample size	129	129	129	129
Wald Chi-square	37.01***	57.52***	36.01***	25.16***

Source: Same as in Table 1.

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