

論文の内容の要旨

論文題目 Determinants of Obtaining JAS Organic Certification in Japan
(日本におけるJAS有機認証取得の決定要因)

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Conventional agriculture, which main aim is to maximize production, is currently prevalent in the world. Negative consequences of such approach include various environmental impacts and may cause problems to human health. To alleviate negative impacts of conventional agriculture, since late 1990s the Japanese Government has undertaken attempts to promote environmentally friendly agriculture (*kankyō hozen gata nōgyō*), which includes organic farming.

To ensure that trustworthy information about agricultural products is provided to consumers, national certification scheme for organic farming, namely “JAS Standards for Organic Plants” (JAS Organic) was established in 2000. Despite the efforts to promote organic farming, the share of organic farming land in Japan accounted for only 0.22% in 2017. Although almost two decades have passed since the certification scheme was established, the results of introducing JAS Organic certification have not yet been fully analyzed.

The ultimate objective of this research is to examine current status of JAS Organic certification and identify the reasons for relatively low adoption rate of this certification in Japan. In line with this objective, three following research questions have been established:

- 1) Are there any prefectural differences among JAS Organic certified farmers? What are the reasons behind those differences?
- 2) What are possible determinants of JAS Organic certification adoption?
- 3) How can JAS Organic certification be further improved?

Thesis consists of six chapters. Chapter 3 follows Introduction (Chapter 1) and Literature Review (Chapter 2), addressing the first research question by analyzing geographic distribution of “JAS Organic” farmers and farming lands in 2010-2015. For this purpose Location Quotient (LQ) methodology was employed to calculate concentration of certified organic farmers and farming area in each prefecture. Statistical data open for access by Ministry of Agriculture, Forestry and Fishery (MAFF) on number of certified JAS Organic farmers, certified farming area size as well as number of commercial farmers and farming area size under the crop for sale was utilized for the analysis. Calculation results were mapped with ArcGIS.

Top five prefectures with the highest concentration of JAS Organic certified farmers in 2015 were Hokkaido, Kochi, Kumamoto, Yamagata and Kagoshima. The analysis has identified two distinct groups of prefectures: a) where concentration for both number of farmers and farming area size is lower than the national average; and b) where concentration for both number of farmers and farming area size was higher than the national average.

Further, the trend in LQ for each prefecture was analyzed to see how the concentration of JAS Organic farmers and farming land was changing from 2010 to 2015 in each prefecture. For both, number of farmers and farming area, concentration grew only in 15 prefectures while staying stagnant or declining in the rest of prefectures. On a regional level, the concentration of JAS Organic certified farmers either stayed the same or declined over time in all regions except for Kyushu and Okinawa. Growth in Kyushu region was steep, but happening in all prefectures.

Based on the two parameters, namely, LQ2015 for the number of farmers (concentration) and LQ2015-2010 for the number of farmers (trend for 2010-2015), prefectures have been categorized into four groups:

- Group A: High & Decline
- Group B: High & Growth
- Group C: Low & Growth
- Group D: Low & Decline

This typology is further utilized in Chapter 4 of the thesis to identify the determinants of certification adoption by comparing farmers’ characteristics across these four groups.

Chapter 4 addresses the second and the third research question by summarizing characteristics of JAS Organic farmers comparing them among the four Groups (ABCD) retrieved from Chapter 3 and with self-proclaimed organic farmers (further referred to as non-JAS organic farmers). Information about JAS Organic certified farmers and their opinion about the certification scheme was collected through conducting a questionnaire survey. The questionnaires (n=1252) were sent by post to certified JAS Organic farmers in 47 prefectures, and 45% response rate allowed for collecting 572 responses (for non-JAS Organic farmers: 189 – sent, 62 – returned, 33% return rate).

Majority of JAS Organic certified respondents were male (90.9%) in their 60s, most of them being high school graduates (38.8%), followed by university graduates (26.4%) and junior college/technical college graduates (22.4%). For 74.7% of the respondents the income from agriculture represents main income source.

The results of the questionnaire have also indicated that most of JAS Organic certified farmers have not been practicing organic farming from the start, with organic farming experience being on average around 12 years shorter than overall farming experience. JAS Organic certified farmers also were found not to cover all of their farming land under certification. On average only 44% of all farming area hold by a certified farming unit is certified as organic, with this share varying for rice paddies, orchards and vegetable fields, being the highest for orchards (58%).

When questionnaire results were compared among the four groups (ABCD). The difference were found in how farmers obtain information about JAS Organic with respondents from groups A (High & Decline), B (High & Growth) and C (Low & Growth) demonstrating more information exchange between the farmers compared to Group D (Low & Decline). Number of farmers willing to renew JAS certification they currently hold was around 5% less in Group D compared to other groups. Group B respondents also showed the highest percentage of responses when asked about benefits of obtaining the certification at least for a half of the options suggested (e.g., secured sales channels, gained consumers' trust, improved natural environment, personal satisfaction). The discrepancies among incorporation types across for groups suggest it might be a potential factor

influencing certification adoption.

Chapter 5 summarized the result of questionnaire survey of both JAS Organic certified farmers and uncertified organic farmers. Comparison of results for JAS Organic and non-JAS Organic farmers should differences in their motives for practicing organic farming with the former being driven more by opportunities to increase products price and address requests of retail, while the latest showing more interest in protecting natural environment. Non-JAS Organic also expressed more concerns regarding certification fee with 77% of respondents (51% for JAS Organic farmers) saying that certification fee is too high. Overall, non-JAS Organic farmers expressed more critique towards the certification requirement stating that following them does not guarantee that the natural environment will not be harmed.

Based on free comments from respondents main concerns of farmers towards the certification include critique of certification itself (e.g., high fee, paperwork burden, loose requirements), low awareness (of farmers, consumers, retails), policy related issues (e.g., lack of subsidies, loopholes in the regulations, low competitiveness compared to other certifications) and difficulties in establishing stable distribution network. These findings indicate that the burden (e.g. financial as well increased workload) still overweighed the benefits that certification adoption may bring.