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Original Article

Internal processes of Geographical Indication and their effects: an evaluation framework for geographical indication applicants in Japan



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ABSTRACT

Background: The internal processes of geographical indications (GIs) by the applicants in rural specific regions primarily remain unexplored, although GIs can facilitate retention of long-term accumulated traditional knowledge in ethnic foods. This article sheds light on (1) analysis of phase-wise internal processes of GI registration and (2) examine relationships between the duration of application and perceived effects of GI registration in Northwestern Japan. GI in Japan is a comparatively a new system introduced in 2015.

Methods: This article applied thematic analysis. The criteria for evaluating the gap of GI registration effects among the seven GI cases were descriptive and analytical with the information and data coming from official documents, questionnaire survey, and personal communications with key informants of the GI applicants. Qualitative information with quantitative data was also applied to visualize the complex internal GI registration processes and their effects.

Results: This article identified that GI applicants who took a relatively long time to complete GI registration tended to perceive the relatively weak registration effects. Alternatively, GI applicants who took a relatively short time to complete their GI registration tended to evaluate the effects of the registration highly. For the preparation process, the most difficult phases for applications were drafting the application documents and long-term communication with a GI regulator.

Conclusion: This article provides insights on the methods to uncover the complex, both ex-ante and ex-post, GI registration processes to reorganize current members of GI applicants and to fill the gaps and enhance the effects of GI registration.

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1. Introduction

The geographical indication (GI) has proliferated as a legal protection for foods with terroir or taste of place, a concept most often associated with traditional foods produced by small farmers in specific regions. In this respect, GIs can facilitate retention of long-term accumulated traditional knowledge in ethnic foods. Actually, the number of GIs registration has increased worldwide following the emergence of various international and regional agreements, with the most prominent one being the World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights [1–3]. Following its introduction in the EU, members of ASEAN such as the Japanese Ministry of Agriculture, Forestry, and Fisheries (MAFF) have enforced the Act on Protection of the Names of Specific Agricultural, Forestry, and Fishery Products

and Foodstuffs [4]. Extending the protection by GIs would benefit ASEAN countries; GIs can reinforce the economic fabric in local communities through the presence of additional industries and stimulating quality. ASEAN countries have also acknowledged GIs in agriculture, food, and handicrafts from which they might profit. Facilitating market differentiation by GIs for a variety of common commodities such as tea, coffee, and rice that would secure an opportunity for emerging economies to use intellectual property rules which improve their living standards by generating wealth for their communities and preserve their cultural heritage and landscape [34]. By introducing the GI in June 2015, MAFF aims to increase the added values of agricultural products and increase Japan's exports of agriculture, forestry, and fishery products. Japan has finalized negotiation for the Economic Partnership Agreement with EU (The EU-Japan EPA) on December 8, 2017. The GI-registered products in EU can be registered in Japan and vice versa. For example, Japan's National Tax Agency approved 139 EU-proposed GIs for wine, spirits, and other alcoholic beverages on January 19, 2018 [5].

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The Japanese GI system for agricultural products and foodstuffs was officially launched in June 2015. As of December 15, 2017, 58 products are registered for GI in Japan [6]. The Japanese laws legislated by the MAFF require the same standard set of rules adopted in the EU. They include consensus building within the members of a GI applicant group, preparing written common rules (listed in the product specification), and establishing a control system for monitoring compliance to these rules and an enforcement system [7,8]. To meet these requirements, GI applicants in Japan need to collect data that show historical, cultural, and environmental relationships between the products and production areas before GI registration [9]. The current Japanese GI legal framework is new, and the level of understanding amongst GI applicants is often too weak to establish a consensus building system for GI registration. The GI system is frequently used by farmers, small size to midsize agricultural companies, or organizations to survive in an increasingly competitive and saturated agrifood market [10]. Under these circumstances, local producers and processors must organize and collectively define the area of production and the nature of the final product [11]. These standard rules are summarized in the so-called “product specification” or *Meisai sho* in Japanese, which is mandatory for all applications.

There are existing studies on the GI registration process related to quality control, products promotion, and effects of the registration. However, little is known about the processes of collective institutional efforts for GI registration among various GI applicants [12]. To date, there is limited literature on the interlinked processes of GI applicants' recognition and efforts [13,14]. To explore these internal processes largely overlooked in the existing literature, we look at GI applicants in the Tohoku region of Japan. GI applications in Tohoku are primarily by smallholders in rural areas. The smallholders' attempts to revive Japan's rural areas are now shifting from productivity-based approaches to broader landscapes and tourism-oriented approaches [15–17]. GIs are useful tools in these approaches to promote products embedded in local socioecological landscapes.

This article sheds light on the black box of GI registration processes in rural GI production areas in Japan. Considering both the ex-ante and ex-post of GI registration, this study provides empirical insights into the GI registration processes by highlighting the associated efforts of GI applicants, the expectations before GI registration, and the effects of registration. This research aims to identify the perceived gaps of GI applicants, and to develop a new systematic evaluation framework of GI effects observed before and after GI registration. Our suggestion for an evaluation framework might contribute to making coherent policies that facilitate the innovative processes and sustainable management of local products using GI.

2. Materials and methods

2.1. Study site

We selected seven registered GI cases out of eight in the Tohoku region as of 15th December 2017. Aomori Cassis and Jusankosan Yamato Shijimi (freshwater clam) from Aomori Prefecture, Odate Tonburi (processed Kochia seeds) from Akita Pref., Yonezawa Beef and Higashine Cherry from Yamagata Pref., Maesawa Beef from Iwate Pref. and Miyagi Salmon from Miyagi Pref. were selected. Each product is located in a delimited territory (Fig. 1).

We focused on the Tohoku region for two reasons: first, with its heavy dependence on agriculture, forestry, and fishery production, this region has a relatively high potential for the use of GI. Second, the area needed to expand the supply channels in the region using local and traditional products after the heavy damage caused by the Great East Japan Earthquake and Tsunami in 2011. Following this historic event, producers and retailers suffered heavy losses in market shares, both domestically and internationally. Additionally, there is a nationwide initiative to improve the promotion of traditional products. For example, traditional Japanese cuisine, *washoku*, which include GI products such as local vegetables and seafood, was registered as intangible cultural heritage by the

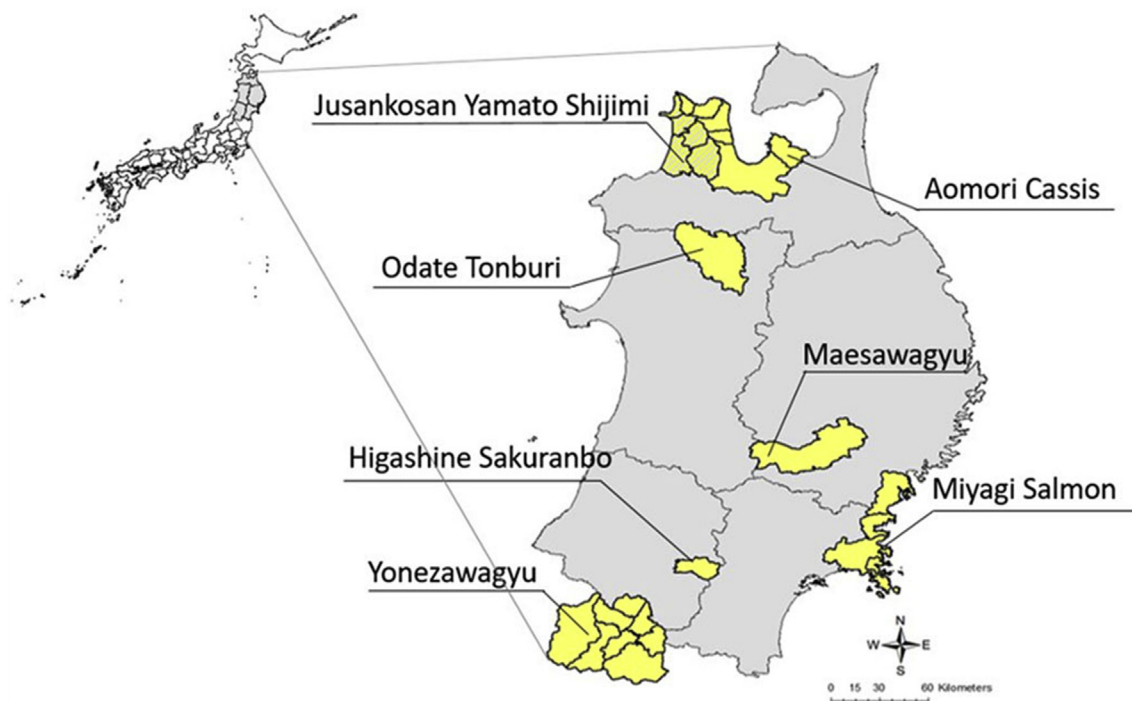


Fig. 1. Case study sites for GI products in northeast Japan (Tohoku region). GI, geographical indication.

United Nations Educational, Scientific, and Cultural Organization in 2013. This provides a nationwide opportunity for local and traditional products to enhance their presence and to receive attention in connection with *washoku* and strengthen food exports [18–20].

2.2. Research design

Based on a comparative case study design of the seven GI cases from the Tohoku region, we employed a well-established qualitative research method [21,22]. The study concept and research design are shown in Fig. 2. We qualitatively examined the characteristics of GI cases (e.g., sector type, registration periods, length of productions) (Table 1).

The data used in this study came from interviews evaluating the comprehensive understanding the GI registration process, structured interviews assessing the time, effort required for GI registration (clarifying the efforts and gaps between expectations vs. effects), and MAFF official documents on product specifications and national GI regulations. A survey of seven GI applicants was conducted from June 2017 to April 2018. The interviewees were representatives of the GI applicants who were involved in the GI application process.

To evaluate GI registration, a survey based on a five-point Likert scale using predefined answer frames was used [23]. According to Folkson [24], this method can support the analysis of GI effects. We examined GI registration effects from the responses of interviewees and compared their perceptions before and after the GI registration effect. Qualitative information is useful to have in this framework because the perception of each interviewee might be different even if they selected the same grade on the Likert scale. The contents of the questionnaire are shown in Appendix 1.

3. Results

3.1. Characteristics of GI applicant group

In this section, we illustrate the characteristics of GI applicants (Table 1). For GI registration in Japan, a product must have a production history of 25 years. The mean historical length of production of the seven cases in Tohoku is relatively long (142.9 years, range: 40–500 years), compared to the mean of all Japanese GI products, 185.5 years, calculated using MAFF data (MAFF, HP). The proportion of marine products in Tohoku was higher than that of the rest of Japan (Tohoku: 38%, others: 8%), but the production of vegetables in Tohoku was lower (Tohoku: 13%, others: 41%), reflecting the rich coastal and marine resources in the area. The duration of GI registration processes ranged from 6 to 18 months, and the mean of the duration was 10.4 months. Yonezawa Beef took 18 months for GI registration, which was the longest of the seven GI products. The results shown in Sections 3.2 and 3.3 suggest that the lengths of registration processes were influential in satisfaction levels and perceived effects.

3.2. The preparation phase of the GI registration process

The interview survey of the GI registration processes highlights the challenges experienced by applicants during the GI registration process. Table 2 shows the results of the survey focusing on before and after the GI registration of the seven cases in the Tohoku region.

3.2.1. Phase I: GI registration preparation

In this section, we aim to clarify the internal perspectives within the preparation phase of the GI registration. According to

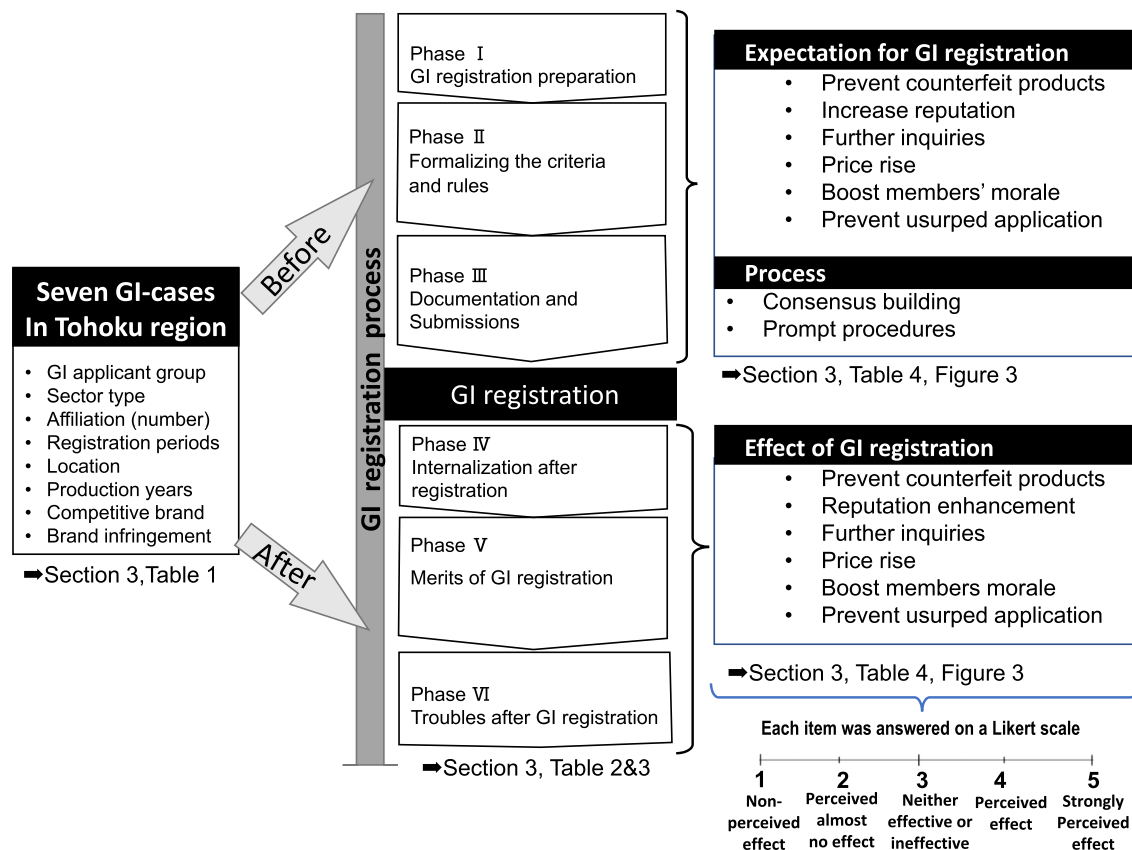


Fig. 2. Study concept and research design. GI, geographical indication.

Table 1
Characteristics of GI applicants.

GI cases	Miyagi Salmon	Jusankosan Yamato Shijimi	Yonezawa Beef	Maesawa Beef	Higashine Cherry	Aomori Cassis	Odate Tonburi
Product type	Coho Salmon	Shellfish (Freshwater clam)	Fresh meat (Beef)	Fresh meat (Beef)	Fruit (Cherry)	Fruit (Cassis)	Processed vegetables (Kochia seeds)
Representative of GI application	Miyagi Gimzake Cooperative Association	JF Jusanko, JF Syariki	Yonezawa Beef Brand Promotion Council	Iwate Furusato Agricultural Association	Kajuhokoku Higashine 6 th Industrial Promotion Council	Aomori Cassis no kai	Akita kita Agricultural Association
Sector type	Private	Private	Private	Private	Public	Public	Private
Total number of GI producers	74	-	64	64	158	166	11
Supportive organizations (number)	JF (55) Local Fishery organization (19)	JF (1) Fishery (-)	Municipality (1) MAFF Tohoku (1)	Maesawa Beef Association (13)	Municipality (1) JA (1) Products association (-) Fruit farmers (900)	Municipality (1)	JA (1) Farmers (10)
Date of application	Mar 11, 2015	Jan 8, 2016	Sep 3, 2015	July 14, 2016	Oct 20, 2016	June 2, 2015	July 11, 2016
Date of registration	May 26, 2017	Dec 7, 2016	Mar 3, 2017	Mar 3, 2017	Apr 21, 2017	Dec 22, 2015	May 26, 2017
Registration period	14 months	11 months	18 months	8 months	6 months	6 months	10 months
Location	Miyagi (Ishinomaki, Onagawa, Minamisanriku, and Kesennuma)	Aomori-Goshogawara (including Jusanko), Tsugaru, and Kitatsugaru	Okitama region, Yamagata	Oshushi, Maesawa ward, Iwate	Higashine, Yamagata	Aomori eastern area	Odate town, Akita
Location area	232 km ²	2544 km ²	549 km ²	72.3 km ²	202 km ²	1477 km ²	205 km ²
Annual yield	11977 t	18 t	1000	2700	3910 t	6.6 t	145 t
Production year	40 years	160 years	120 years	40–45 years	100 years	40 years	500 years

JA, Japan Agricultural Cooperatives; JF, Japan Fisheries Cooperatives; Furusato nozei: tax cuts given to taxpayers who donate to local municipalities; -, unknown.

the results of our interviews, all GI-registered groups faced difficulties during the stringent process of GI registration. All applicants utilized the GI support desk, an official supporting body set up by the MAFF operated by the Agriculture and Livestock Industries Corporation. Applicants also reported utilizing other means of support via MAFF, the local Fishery Coordination OfficeFCO, local Japan Fisheries Cooperatives (JF) (an organization for fishers in local areas), and JF Zengyoren (federal JF). JF is responsible for the facilitation of fishery management and livelihood protection of JF fishers, fostering rich marine resources, contributing to the enrichment of local communities, and improving the social and economic statuses of cooperative members. In only one of the seven cases (Odate Tonburi), the applicant only consulted the GI support desk, as that was the only channel available to them. GI applicants primarily consulted these official support systems for drafting applications and collecting evidence on historical information, quality standards, and management of products.

3.2.2. Phase II: formalizing the criteria and rules

The motivations behind GI registration varied from case to case. For example, two applicants aimed to improve common management methods. In the case of Miyagi Salmon, the common production methods were not shared. In the case of Jusankosan Yamato Shijimi (freshwater clam), management of production areas and traceability had proved to be difficult. Some other reasons for GI registration include direct recommendations from MAFF (Yonezawa Beef), raising producers' revenue (Maesawa Beef), and contributing to regional development (Aomori Cassis, Higashine Cherry, and Odate Tonburi). All applicants drafted their quality standards, and except Miyagi salmon, all applicants applied some form of existing management methods. As an overall trend, the effects of GI registration seemed to depend on the duration of the application process. The applicants who took a long time to complete the registration tended to feel burdened and harbor negative impressions of the registration processes, while those who took less time tended to have more positive impressions.

3.2.3. Phase III: documentation and submissions

The most burdensome phase perceived in all cases was submitting documents with appropriate contents and evidence that appropriate as GI products (Table 3). In the case of Miyagi Salmon, the applicant responded that the Great East Japan Earthquake and Tsunami of 2011 led to the loss of statistical data and relevant documents, which made the submission of evidence for traditional management difficult. In the case of Jusankosan Yamato Shijimi, they faced difficulty in reaching a consensus building among fishers on the definition of the products and the quality standard of it. Aomori Cassis and Odate Tonburi applicants also faced difficulty during the consensus building phase on the definitions of the GI products. Yonezawa Beef applicants felt that the overseeing governmental organizations did not understand the objectives of their application.

3.2.4. Phase IV: internalization after registration

The results of semistructured interviews highlight the changes in the following four aspects: sale prices, sales amount, recognition of GI products, and the willingness for further promotion of the GI-registered product among members after the GI registration. Positive changes in product price or sales amount were observed for Jusankosan Yamato Shijimi, Aomori Cassis, and Odate Tonburi. All GI applicants except Yonezawa Beef responded that they felt an increase in confidence in their brands after registration. In the case of Higashine Cherry, they experienced higher evaluation at

Table 2
Ex-ante and ex-post GI registration processes in the Tohoku region, Japan.

GI registration processes	Miyagi Salmon	Jusankosan Yamato Shijimi	Yonezawa Beef	Maesawa Beef	Higashine Cherry	Aomori Cassis	Odate Tonburi
(a) Before GI registration: registration processes and register-related efforts							
Support institution for GI registration (ratio, %)	<ul style="list-style-type: none"> GI support desk (20%) MAFF (30%) Local FCO (50%) 	<ul style="list-style-type: none"> GI support desk (-) MAFF (-) Local FCO (-) Research Institute (-) 	<ul style="list-style-type: none"> GI support desk (60%) MAFF (40%) 	<ul style="list-style-type: none"> GI support desk (20%) MAFF (20%) Prefecture (60%) 	<ul style="list-style-type: none"> GI support desk (20%) MAFF (30%) Local FCO (50%) 	<ul style="list-style-type: none"> GI support desk (-) MAFF (-) Prefecture (-) 	<ul style="list-style-type: none"> GI support desk (100%)
Support details	Confirm the application contents.	Data collection	Draft application documents	Draft application documents	Draft application documents	Draft application documents	Draft application documents
How the applicant became aware of GI registration	Introduction from JF	Introduction from prefecture and MAFF	Introduction from MAFF	From press and media	From JA	Introduction from MAFF, press, and media	Introduction from Odate municipality
Reason for GI registration	<ul style="list-style-type: none"> A lack of uniformity A fall in the price of fish caused by earthquake and tsunami disaster in 2011. 	<ul style="list-style-type: none"> Protect producers Enhance traceability 	Recommendation from MAFF	To increase producers' income	Regional development	Regional development	<ul style="list-style-type: none"> Regional development To preserve traditional vegetables
Initial impression of GI registration process	Might take some time to complete the registration	Easy to register	Easy to register	Easy to register	Relatively easy to register	Easy to register	Easy to register
GI registration process (Preparation stage/ Documents prepared for application)	<ol style="list-style-type: none"> Introduced GI from MAFF Announcement and discussion within JF Applied on Mar 11, 2016 Exchanged opinions with scholars Registered on May 26, 201 	<ol style="list-style-type: none"> Investigated GI system Prepared application documents and contacted GI support desk 	<ol style="list-style-type: none"> Guided by GI support desk Prepared application documents Many times, pointed out that the documents were not in order Staff of MAFF directly instructed 	<ol style="list-style-type: none"> Investigated GI system Prepared application documents and contacted GI support desk 	<ol style="list-style-type: none"> Consideration at special committees Prepared application documents and contacted GI support desk Registered 	<ol style="list-style-type: none"> Investigated GI system Shared information at officers' and general meeting Reviewed criteria Prepared application documents and submitted Modified production process management Amendment submitted 	<ol style="list-style-type: none"> Investigated GI system Prepared application documents and contacted GI support desk
How they obtained evidence to satisfy GI requirements	Own documents and data	Used prefecture's database	Obtained data from MAFF and prefecture	Obtained data from prefecture.	Obtained data from prefecture	Obtained data from prefecture and data based on test planting of cassis	Own documents and data
(b) After GI registration: several changes							
Price	No	Yes	No	No	No	Yes	Yes
Amount of sales	No	Yes	No	No	No	Yes	No
Awareness about GI product	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Motivation of members	Yes	Yes	No	Yes	Yes	Yes	Unknown
Other changes	-	-	-	-	-	-	-
Perceived merit of GI registration	Increased reputation, inquiries about product, improved motivation	Received authoritative assurance as a GI product	Nothing	Increased media exposure	GI registration led to city promotion. Improved farmers' awareness of cherry and its quality.	Increased opportunities to get to know Aomori Cassis. Increased inquires and patronage from confectionery stores.	Nothing
Level of confidence in GI product	More confident than before GI registration	Tend to be confident	No change	Tend to be confident	More confident than before GI registration	Tend to be confident	More confident
Issues after GI registration	Increased cost. Out of stock due to increased orders.	Increased cost. Increased tasks.	Dissemination and GI handling. GI label cost.	Reluctant to stick a seal. Complicated sticker work	Nothing.	Increased cost and management tasks.	Increased cost. Increased tasks (GI labeling). Renewal cost for packages and booklets.
Requirement for GI governance	Increased the publicity of GI products	Promote GI to consumers	Promote GI to consumers	Detailed explanation about GI in advance	Like to know consumers' reactions and comments	Promote GI to consumers	Promote GI to consumers

GI, Geographical Indications; FCO, local Fishery Coordination Office; JF, Japan Fisheries Cooperatives. MAFF, Japanese Ministry of Agriculture, Forestry, and Fisheries.

Table 3
Applicant responses to the most burdened phase of the GI application.

GI Cases	Description
Miyagi Salmon	<ul style="list-style-type: none"> Owing to the 2011 earthquake and tsunami, historical data and documents were difficult to acquire Difficult to provide evidence for uniqueness of the traditional <i>ikejime</i> method On-site testimonies, evidential document from 22 years ago Had little time to discuss GI and reach consensus between stakeholders
Jusankosan Yamato Shijimi	<ul style="list-style-type: none"> Facilitated consensus building efforts among fishery Defined products as GI Defined its production area Administrative procedures (application to registration)
Yonezawa Beef	<ul style="list-style-type: none"> Many times over discussion and exchanges of emails with MAFF for GI application Difficult to gain understanding by MAFF
Maesawa Beef	<ul style="list-style-type: none"> Many times over discussion and exchanges of emails with MAFF for GI application Difficult to get understanding by MAFF
Higashine Cherry	<ul style="list-style-type: none"> Drafting the application; a difficult but meaningful process.
Aomori Cassis	<ul style="list-style-type: none"> Defining the products as GI Administrative procedures (application to registration)
Odate Tonburi	<ul style="list-style-type: none"> Consensus building among applicants, producers, and stakeholders Administrative procedures (application to registration)

GI, geographical indication; MAFF, Japanese Ministry of Agriculture, Forestry, and Fisheries.

agricultural fairs after GI registration, which improved the morale of the producers and boosted collaborations in the region. Miyagi Salmon producers also responded that they gained confidence, despite competition from a similar product in Tottori Pref. (located in the southwestern part of Japan). Members of the Miyagi Salmon application felt a boost in their morale after improvements in product reputation following GI registration.

3.2.5. Phase V: merits of GI registration

Most of the applicants had positive impressions of the effects of GI registration, following improvements in product reputation and increased media exposure. These effects also brought attention to the regions from which the products originated. In collaboration with Higashine City, the Higashine Cherry applicants held various public events such as a marathon in honor of the cherry, a cherry pit spitting contest, and cherry picking events for tourists. The GI

registration offered support for farmers to sell cherries at these events. As for Aomori Cassis and Miyagi Salmon, inquiries and orders increased after their GI registration. Miyagi Salmon and Maesawa Beef applicants said that their media exposure increased after GI registration. However, Yonezawa Beef and Odate Tonburi applicants responded that they did not perceive any additional merits from the GI registration. Although the Yonezawa Beef applicants recognized that their media exposure increased, and counterfeit products were prevented, these were not the expected effects for GI registration.

3.2.6. Phase VI: troubles after GI registration

Some applicants also reported adverse effects as a result of GI registration. Most GI applicants responded that additional expenses involved in the management of GI labels were cumbersome. Although the Higashine Cherry applicant reported no quips post-registration, the other six applicants reported some adverse effects after their registration: increased costs (Aomori Cassis, Miyagi Salmon), increased in workloads in labeling (Yonezawa Beef, Maesawa Beef, and Jusankosan Yamato Shijimi) and stock management, and struggles to keep up with increased orders (Miyagi Salmon). Some applicants reported an unexpected increase in costs and workloads due to higher demands in cultivation standards (Aomori Cassis) or rebranding of packaging (Odate Tonburi).

3.3. Gaps between perceived effects and expectations by GI applicants

Table 4 summarizes the gaps between expectations and post-registration impressions of GI registration in the seven cases. We asked applicants to rate their expectations and the perceived effects of GI registration using the five-point Likert scale (Table 4). Our results identified that all applicants expected an increase in reputation and price as a result of GI registration. In the case of Odate Tonburi, applicants expected enhancement of GI producers' morale in addition to the increases reputation and sales (cf. Table 4). As for other expectations by applicants, Yonezawa Beef expected the GI system to prevent the misuse of branding and prevention of counterfeit beef while diminishing legal costs. Odate Tonburi expected that their GI registration would enhance the morale of producers and promote sustainable local production.

Were these expectations met? After their GI registration, GI applicants reported several discrepancies. Even though all applicants found a positive effect on their product reputations, except

Table 4
Changes to impressions of GI registration for each GI case in the Tohoku region.

GI product	Miyagi Salmon		Jusankosan Yamato Shijimi		Yonezawa Beef		Maesawa Beef		Higashine Cherry		Aomori Cassis		Odate Tonburi	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
MAFF concerns														
Preventing counterfeit products		3 (1m)	✓	3 (-)	✓	2 (-)		(a)		3 (3m)	✓	4 (12m)		2 (b)
Boosting members' morale	✓	4 (1m)		(-)	✓	2 (-)	✓	4 (6m)	✓	5 (3m)	✓	4 (6m)	✓	4 (6m)
Expectation														
Reputation enhancement	✓	5 (1m)	✓	3 (1m)	✓	3 (-)	✓	3 (a)	✓	5 (3m)	✓	4 (3m)	✓	4 (1m)
Price rise	✓	2 (1m)	✓	2 (-)	✓	2 (-)	✓	3 (a)	✓	3 (3m)	✓	4 (12m)	✓	4 (3m)
Process														
Consensus building among applicants, producers, and stakeholders		3		1		1		2		4		5		4
Prompt procedures		2		3		1		4		5		5		3

GI, geographical indication; MAFF, Japanese Ministry of Agriculture, Forestry, and Fisheries; m, month(s) after GI registration that the interviewees perceived each effect; (-), not answer; (a), unknown; (b), no effect.

Five-point scales indicate each value based on the questionnaire survey: unperceived effect 1-2-3-4-5 perceived effect.

Five-point scales indicate each value on stage of the GI registration process based on semistructured interviews: difficult 1-2-3-4-5 easy.

Aomori Cassis and Odate Tonburi, product sales did not increase. Consequently, Aomori Cassis and Odate Tonburi evaluated the effects of GI registration highly, while Jusankosan Yamato Shijimi and Yonezawa Beef gave relatively low evaluation scores. It needs to be noted that perceptions of such effects were complicated by time lags between before and after GI registration. Time lags for appreciation of certain GI effects exist, for example, the improvement in reputation and protection from counterfeit products might be realized quickly, but boosting morale and raising sales generally require more time [8]. On the other hand, even if they answered the same evaluation score for each question in Table 4, the interviewees' recognition and the interpretation of score could be different depending on the contexts of answers, especially selected score 3. Based on the survey results on the GI processes, efforts, and expectations of GI applicants, we have visualized the factors that cause the gaps among the cases (represented as a logic tree in Fig. 3).

This logic tree shows that the gaps between expectations and perceived GI effects are determined by how the applicants were

aware of their GI registration process, and what GI effects they expected. According to the results in Section 4.3 regarding the burdens of GI registration, the applicants' evaluation of the GI process seemed to be influenced by two main factors: "consensus building" and "the complicatedness of the application procedure". In other words, whether they could build consensus over GI registration steadily and whether the application procedures were smooth were determinants of the overall impression of the GI registration process. Furthermore, the logic tree shows that expectations on the GI registration were mostly determined by "reputation enhancement" and "rise in sales" in Table 4. To demonstrate the characteristics of the individual cases concerning factors closely related to perceived GI effects, determinant factors plotted in the logic tree were transformed into a two-dimensional matrix (Fig. 3) based on the results in Table 4. This matrix helps us to understand the discrepancies between GI applicants' and initial reactions and the effects of the GI registration process. In this matrix, the vertical axis indicates the results of the evaluation of "GI process." The evaluation of the GI

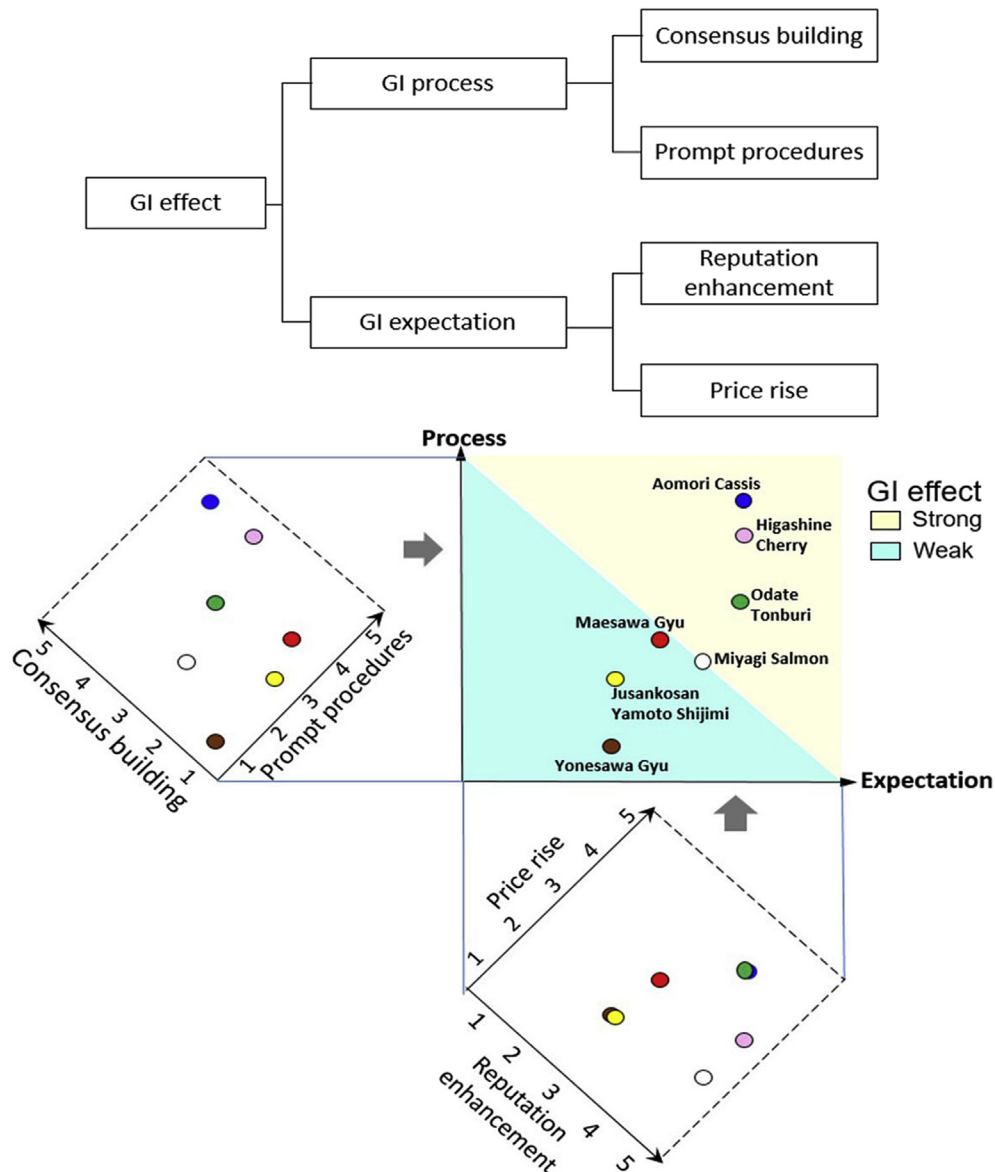


Fig. 3. Factors that determine GI effects in a logic tree and the results of GI effect gaps. Results of the seven GI cases in Table 4 are plotted in the two-dimensional matrix. GI, geographical indication.

process is reflected in that of “consensus building” and “procedures of application.” The horizontal axis indicates the degree of expectation on GI registration. The expectation on the registration is reflected in that on “reputation enhancement” and “price rise”. From the results, Aomori Cassis, Higashine Cherry, and Odate Tonburi were classified into a group that realized strong effects of GI registration. Miyagi Salmon and Maesawa Beef were classified into a group that realized specific effects of the registration. Jusankosan Yamato Shijimi and Yonezawa Beef were classified into a group that perceived weak effects.

4. Discussions

In the GI registration process, GI producers, local public bodies, local nonprofit groups, and other GI supporters are conventionally required to meet, negotiate, and reach an agreement on the terms and conditions of the product specification [25]. However, this study showed GI producers themselves were not involved in all application processes; in other words, GI applicants or application main bodies frequently are the administrative offices of producer associations or a branch in a municipality, supposedly representing GI producers but frequently have discrepancies with GI producers due to a lack of time and resources or underpinning differences in norms. The process can be led by a limited number of GI producers or by a single entity from a municipality. It can be time-consuming to agree on standard definitions among GI applicant group members or groups of GI producers. Consequently, considerable collective efforts are demanded during the GI application process [14,26].

The critical and burdensome phases were the building consensus among GI applicant group members or groups of GI producers and carrying out the necessary procedures promptly. Notably, the most critical and burdensome phase was the drafting of the GI application documents (Phase I–III in Fig. 2). We found that the length of time needed in the registration process varies from case to case. While the speed of registrations of Higashine Cherry and Aomori Cassis was the fastest (6 months), Yonezawa Beef case, which invested comparatively little effort in the first registration phase, needed 18 months to complete its registration. Consequently, Yonezawa Beef did not find apparent benefits or effects from the GI registration. Most groups of GI producers might not have understood the concept of GI at their initial stage of the application. In this context, GI applicants would have gaps or miscommunications between them.

The interaction of heterogeneous actors frequently causes conflicts between the actors [27], but several interviewees referred to the “promotion of the region under one umbrella provided by GI registration” as a merit of the registration. Our findings show that intensified interaction and participation of producers in the GI process resulted in a better understanding of the concept of GI among GI applicant group members including producers and other actors.

The critical determinants of the GI effect perceived by the GI applicants were the process of GI registration and the expectations of the applicants. The burdensome phases of GI registration were that of consensus building among groups of GI producers and carrying out application procedures promptly. Furthermore, the GI applicants mainly expected an increase in reputation-based protection (especially from consumers) and a price rise.

Based on these findings, the central government or the MAFF needs to design and implement a GI scheme that considers the critical determinants of GI effect perceived by the applicants. To reduce the burden experienced by GI applicants in the registration processes, the MAFF needs to provide technical assistance to stakeholders throughout the registration processes [7]. Currently, the MAFF is working on a promotion strategy of GI and sharing it with GI applicants. However, this has taken the form of one-way lectures

from the MAFF to GI applicants, instead of an interactive conversation involving groups of GI producers and stakeholders. GI registration should not be understood as a linear process or one-time event but rather as a discursive and interactive process of cycles involving producers, applicants, retailers, and various other stakeholders.

As for the implementation of the GI system in Japan, the general problem is that the registration process is so demanding and time-consuming for GI applicants that they could not perceive the effects and outcomes of the registration. This burdensome process can cause unreasonable expectations by groups of GI producers. Clark and Kerr [28] mention that the current GI schemes entail various burdens or problems including difficulties in reaching a consensus, low representativeness and legitimacy of GI actors, inadequate and uneven information, unclear regulation, and weak bargaining power or deficiencies in contractual abilities. These burdens or problems generate power imbalances in the registration process [29–32] or in the governance of the GI schemes [7,33].

This article clarified the preparation process of GI registration and perceived effects of the applicants focusing based on the seven cases from the Tohoku region. Although it has a limitation in scope, it is one of the first studies to examine this process. Based on the results of this survey, this case study developed the new evaluation framework of GI registration, which includes perceptions of GI applicants and can contribute to GI governance with various stakeholders.

The overall number of GI registrations is growing nationwide, and Japan agreed with the EU on mutual GI systems and preparation. Grasping the status of GI applicants and their perceptions is an urgent task. This study identified the factors that primarily influence the perceived effects of GI registration. Uniquely, this article provided that GI applicants who took a relatively long time to complete GI registration tended to perceive the relatively weak registration effects. Alternatively, GI applicants who took a relatively short time to complete their GI registration tended to evaluate the effects of the registration highly.

Furthermore, our findings imply that satisfaction and merits perceived by the producers and applicants depend upon recognition or even awareness of the GI scheme for consumers and stakeholders. Such increased awareness of GI system is a prerequisite for producers of the individual products to perceive the merits of the registration. Sharing the aims and concepts of GI with stakeholders can facilitate innovation in the current GI scheme to enable informed choices for consumers.

Conflicts of interest

None declared.

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Appendix B. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jef.2018.07.004>.

References

- [1] Marie-Vivien D. From plant variety definition to geographical indication protection: a search for the link between Basmati Rice and India/Pakistan. *J World Intellect Prop* 2008;11:321–44.
- [2] Wanis H. Agreement on trade-related aspects of intellectual property rights and access to medication: Does Egypt have sufficient safeguards against potential public health implications of the agreement. *J World Intellect Prop* 2010;13:24–46.
- [3] World Trade Organization. Annex 1C agreement on trade-related aspects of intellectual property rights. TRIPS; 1994. p. 319–51.
- [4] WIPO. Japan act on protection of the names of specific agricultural, forestry and fishery products and foodstuffs (Act No. 84 of June 25, 2014) (http://www.wipo.int/wipolex/en/text.jsp?file_id=431677).
- [5] Riker C. Japan approves 139 EU-proposed GIs for wine and spirits. 2018. GAIN Report Number: JA8003.
- [6] Ministry of Agriculture, Forestry, and fisheries, information website on Japan's geographical indication. (<https://gi-act.maff.go.jp/en/>).
- [7] Belletti G, Marescotti A, Sanz-Cañada J and Vakoufaris H. Linking protection of geographical indications to the environment: Evidence from the European Union olive-oil sector. *Land Use Policy* 2015;48:94–106.
- [8] Belmin R, Casabianca F and Meynard J-M. Contribution of the transition theory to the study of geographical indications. *Environ Innovation Soc Transitions* January; 2017:1–15.
- [9] Kizos T and Vakoufaris H. Alternative agri-food geographies? geographic indications in greece. *Tijdschrift voor Economische en Sociale Geografie* 2011;102(2):220–35.
- [10] Gangjee DS. Proving provenance? Geographical indications certification and its ambiguities. *World Development*; 2015. p. 1–32.
- [11] Gugereff K, Uchiyama Y, Kieninger PR, Penker M, Kajima S and Kohsaka R. Do historical production practices and culinary heritages really matter? Food with protected geographical indications in Japan and Austria. *Journal of Ethnic Foods* 2017;4(2):118–25.
- [12] Bowen S and Zapata AV. Geographical indications, terroir, and socioeconomic and ecological sustainability: The case of tequila. *J Rural Stud* 2009;25(1):108–19.
- [13] Folkeson C. Geographical indications and rural development in the EU. 2015 <https://lup.lub.lu.se/student-papers/search/publication/1334511>.
- [14] Quinones-Ruiz XF, Penker M, Belletti G, Marescotti A and Scaramuzzi S. Why early collective action pays off: evidence from setting protected geographical indications. *Renew Agricul Food Syst* 2017;32(02):179–92.
- [15] Allaire G and Sylvander B. Globalization and geographical indications. Labels of Origin for food. *Local development. Global Recogn* 2011:106–21.
- [16] De Mattos Fagundes P, Padilha ACMH, Sluszz T and Padula AD. Geographical indication as a market orientation strategy: An analysis of producers of high-quality wines in Southern Brazil. *J Database Market Cust Strategy Manag* 2012;19(3):163–78.
- [17] Uchiyama Y, Tanaka Y, Matsuoka H and Kohsaka R. Expectations of residents and tourists of agriculture-related certification systems: analysis of public perceptions. *J Ethnic Foods* 2017;4(2):110–7.
- [18] Kohsaka R. The myth of washoku: a twisted discourse on the “uniqueness” of national food heritages. *J Ethnic Foods* 2017;4(2):66–71.
- [19] Uchiyama Y, Fujihira Y, Matsuoka H and Kohsaka R. Tradition and Japanese vegetables: history, locality, geography, and discursive ambiguity. *J Ethnic Foods* 2017;4(3):198–203.
- [20] Kohsaka R, Matsuoka H and Uchiyama Y. Capturing the relationships between local foods and residents: A case in the Noto region, Japan. *J Ethnic Foods* 2016;3(2):86–92.
- [21] Patton M. Qualitative evaluation and research methods. *Qual Eval Res Methods* 1990:169–86.
- [22] Shah SK and Corley KG. Building better theory by bridging the quantitative – qualitative divide. *J Manag Stud* 2006;43(8):1821–35.
- [23] Naito Y. The EU protection system of geographical indications and introduction of a protection system in Japan. *J Agric Policy Res* 2013;(20):37–73.
- [24] Folkeson C. Geographical indications and rural development in the EU. 2005. p. 120.
- [25] Vandecastelaere E, Arfini F, Belletti G and Marescotti A. Linking people, places and products. *Quality* 2010;220.
- [26] Rangnekar D. Demanding stronger protection for geographical indications: the relationship between local knowledge, information and reputation. Discussion Paper Series. University Nations University INTECH; 2004.
- [27] Dentoni D, Menozzi D and Capelli MG. Group heterogeneity and cooperation on the geographical indication regulation: The case of the “Prosciutto di Parma” consortium. *Food Pol* 2012;37:207–16.
- [28] Clark LF and Kerr WA. Climate change and terroir: The challenge of adapting geographical indications. *J World Intellect Property* 2017;20(3–4):88–102.
- [29] Barham E and Sylvander B. Labels of origin for food: local development, global recognition, Labels of origin for food local development global recognition. 2011.
- [30] Galtier F, Belletti G and Marescotti A. Factors constraining building effective and fair geographical indications for coffee: Insights from a dominican case study. *Dev Pol Rev* 2013;31(5):597–615.
- [31] Giovannucci D, Barham E and Pirog R. Defining and marketing “Local” foods: Geographical indications for US products. *J World Intellect Property* 2010;13(2):94–120.
- [32] Mancini MC. Geographical Indications in Latin America Value Chains: A ‘branding from below’ strategy or a mechanism excluding the poorest? *J Rural Stud* 2013;32:295–306.
- [33] Kizos T, Koshaka R, Penker M, Piatti C, Vogl CR and Uchiyama Y. The governance of geographical indications: Experiences of practical implementation of selected case studies in Austria, Italy, Greece and Japan. *Br Food J* 2017;119(12):2863–79.
- [34] Banerji M. Geographical Indications: Which way should ASEAN Go?. *Boston College Intellectual Property & Technology Forum*; 2012. p. 1–12.