

Article

Intellectual Property Strategies for Timber and Forest Products: The Case of Regional Collective Trademark Applications by Japanese Forestry Associations

Shuichiro Kajima ¹, Yuta Uchiyama ² and Ryo Kohsaka ^{2,*}

¹ Graduate School of Environmental Studies, Tohoku University, Sendai 980-0845, Japan; shuichiro.kajima.r4@dc.tohoku.ac.jp

² Graduate School of Environmental Studies, Nagoya University, Nagoya 464-8601, Japan; uchiyama.yuta@k.mbox.nagoya-u.ac.jp

* Correspondence: kohsaka@hotmail.com

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Abstract: In this study, we clarify the motivation for applying for regional collective trademarks (RCTs) and the effects perceived by the right holders of wood and forest products. We further examine the historical contexts and social circumstances of production regions with RCT registrations. A survey of eight right holders, including forestry associations that applied for RCTs, was conducted in this study. We obtained a sufficient quantity of perception data for comparisons across different production sites. The primary motivations of forest associations applying for RCTs were preventing counterfeit goods and improving awareness and familiarity. It was identified that the relative lengths of the brand histories have impacted the current branding strategies, including the motives for RCT applications. In terms of the perceived effects of RCTs, four RCT right holders perceived the former positive effect of preventing counterfeit goods, and seven perceived the latter positive effect of improving awareness and familiarity. All of the forest associations intend to renew their RCTs. The primary motivation of the RCT holders is not price enhancement. It remains to be seen whether the RCT brands can differentiate themselves to consumers and constructors in terms of quality or brand stories.

Keywords: intellectual property; regional collective trademarks; forestry association; regional brand

1. Background and Purpose

A number of rural development activities have been implemented to correct economic imbalances in rural areas worldwide towards global sustainability. Measures like subsidies and direct support for products are sensitive issues in terms of free trade agreements.

Governments and enterprises, including those at the local level, are exploring measures to differentiate and brand their products, such as the “one village, one product” movement, which is mainly for agricultural products.

Japan is not an exception, and competitive product development and packages are a high priority for the government. In recent years, regional branding has become an issue in order to differentiate local special products for the purpose of rural development [1]. As part of the national strategy, branding strategies and the utilization of intellectual property, including the use of trademarks, are also promoted for the field of agriculture, forestry, and fishery [2].

Preventing counterfeit products, both overseas and domestically, is a major challenge for Japanese agriculture and forestry. There are two concrete legal instruments for this purpose provided by two different ministries: the regional collective trademark system, which has been run by the Ministry of

Economy, Trade and Industry (METI) since 2006, and the geographical indication protection system (GI), which has been run by the Ministry of Agriculture, Forestry and Fisheries (MAFF) since 2015 [3,4]. The utilization of intellectual property has traditionally been dominated by engineering and artificial products, and we are now witnessing drastic changes, with more focus on agriculture, forestry, and fisheries [5,6].

In the following section, the utilization of intellectual property rights in Japanese forestry and its overall developments are reviewed. In particular, we analyze applications for regional collective trademarks (RCTs) by forest associations and the perceived effects of these applications. The analysis covers the effectiveness of these trademarks as a tool to protect intellectual property rights in the forestry industry, to prevent counterfeits, to increase brand values, and other effects. The RCTs (and the GI) raise the fundamental question, “Who is eligible to use local names?” By exploring RCTs, we gain insights into the systems to allow fairness, flexibility, and compatibility with legal systems when addressing such questions.

In conventional trademark systems, regional names are considered to be common property, and exclusive use rights are not granted in principle. Regional collective trademarks opened up the possibility of officially registering products with regional names. Timber (i.e., round timber) and forest products (mainly boards processed from timber, in this case) of renowned production regions have been registered. The registered timber and forest products have certain degrees of publicity, and some are categorized as *meiboku* (precious woods).

These renowned Japanese woods are cherished not only because of their grain, color, and other characteristics, but also for their harmony in the design of Japanese-style rooms [7]. These precious woods are known for their production using specific silviculture methods.

In order to discuss the characteristics and uniqueness of the forestry sector in utilizing intellectual property rights, it is necessary to review the actual status of the registration of timber and forest products to date.

In this study, we will clarify the motivation for applying for wood and forest product RCTs and the perceived effects of these RCTs. We further examine the historical contexts and social circumstances of production regions with RCT registrations. It has been almost a decade since RCTs were introduced, which provides us with a unique opportunity to examine how the forestry sector (forestry associations) is approaching intellectual property rights, including the use of trademarks, through this analysis of the RCT experience. Based on this analysis, implications for the intellectual property strategy of the Japanese forestry sector are provided.

Research Questions

The research questions of this study are illustrated as follows:

- I What are the motivations and perceived effects of RCT in the forest sector?
- II Are RCTs context-dependent and vary from region to region?
- III Are there specific RCT patterns for the forestry sector (timber and forest products)?

With the first research question, we explore the relationship between the motivations for and perceived effects of RCTs and examine if they differ across products and production sites with different historical backgrounds. With the second research question, we explore the possibility of whether the historical and social backgrounds of the production sites affect motivations and effects. Furthermore, we examine if there are any price differences between products with RCTs and ordinary products. We did not trace the actual prices affected by RCTs but rather asked the interviewees whether they perceived any price differences. We did not trace the market price of timber because the price of timber is influenced by other factors besides trademark registration. There are technical difficulties in tracing product price changes due to RCTs because the products are frequently not sold separately. Lastly, we examine whether there are any forest-specific patterns in RCTs.

2. Review

2.1. Review of RCTs

Products featuring local or regional tastes are frequently associated with place names. Souvenirs from tourist destinations include fruits, vegetables, or processed sweets with local names. However, the registration of trademarks consisting of a regional name and a product name was essentially not allowed by the official commercial laws in Japan. Due to the public nature of local or regional place names, registering a trademark with a combination of place and product names was not possible. Trademarks were granted in combination with graphics so that they would be distinguishable (cf. Article 3, Paragraph 1 of the Trademark Act of Japan). As an exception, a limited number of top brands, such as Yubari melon, were granted trademarks without graphics because they have limited risk of confusion. This policy is understandable given the public nature of the regional names, but this constraint made it difficult to prevent counterfeits. Counterfeits or similar products and usurped applications were an urgent issue, particularly for exports and domestic products, including souvenirs with regional names.

This need to officially protect regional brands within the framework of intellectual property has led to the introduction of RCTs. The use of brands and protection under RCTs were both considered to be useful for industry and tourism, contributing to local economies [8].

In order to enable the registration of trademarks in the earlier stages of regional brand development, the “Act for Partial Amendment to the Trademark Act” was established in an ordinary diet session in 2005. The act was enforced on April 1, 2006, and the RCT system was officially launched. Registrations of trademarks, including RCTs, are recommended to allow central governments and right holders to protect regional brands in terms of intellectual property. RCTs are a type of trademark management system for products and services with local names. They allow applications to register products with regional names when the registrants and products meet certain conditions.

The Patent Office of Japan operates the trademark system. The system is designed not for individuals or for individual entities but rather for organizations with certain public characters, and the products need to have a certain level of publicity (i.e., products need to be known to adjacent prefectures).

As outlined in Table 1, the eligible registrants were originally set as cooperatives, such as agricultural cooperatives, in 2006. After the deregulation in 2014, commercial and industrial associations, such as chambers of commerce and non-profit organizations (NPOs), were added as entities eligible for RCT applications.

Table 1. Outline of regional collective trademarks (RCTs).

Protected Targets (Object)	All Products and Services
Protected targets (name)	“Regional name” + “Product/service name”
Registrants	Cooperative associations with legal entities, such as agricultural cooperatives, commerce and industry associations, chambers of commerce and industry, and non-profit organizations (NPOs) (1) Any association established by a special Act, including a business cooperative (2) Trademark used by its member
Main requirements for registration	(3) Following (1) and (2), the trademark shall be examined to judge whether it is “indicating goods or services pertaining to its or its members’ business.” (4) Similarity of trademarks (5) Well known among consumers

Source: [9]. Once an application of registrants is accepted, the applicants become the right holders of the RCTs.

RCT registrations are not limited to agricultural products; other items, including dairy products, Buddhist altars, and hot springs, are also eligible (by contrast, the Japanese GI system launched in 2015 is exclusively for agricultural, forest, and fishery products). The only eligible organizations are cooperative associations with legal entities, and they are limited to those corporations guaranteeing freedom of affiliation. By restricting access to qualified members, the use of local names is justified in that no single entity can exclusively monopolize trademarks with local names.

There are 598 products and services registered as RCTs, and agricultural and forest products make up the largest portion of the total, with 117 RCTs (as of May 2017). In addition to processed products (charcoal, Buddhist altars, etc.), there are ten registered timber and forest products (8.5% in agricultural and forest products and 1.7% in total registered products). It has been a decade since the introduction of RCTs in Japan, and registration numbers have stagnated in recent years (Figure 1). The act of RCT was enforced in 2006 and various types of products and services have been registered. The effects of the registration of RCT need to be evaluated from the long-term perspective and the forest products with RCT especially need such long-term evaluation considering the characteristics of forestry. Furthermore, forest products with RCTs have not yet fully been analyzed in terms of evaluation of the effects of registration, although the impact of forestry is increasing, as reflected in the forest policy regarding the forest environment tax in Japan. Considering those circumstances, the analysis of forest products with RCTs is significant in terms of sustainable forestry and environmental management in the era of shrinking society.

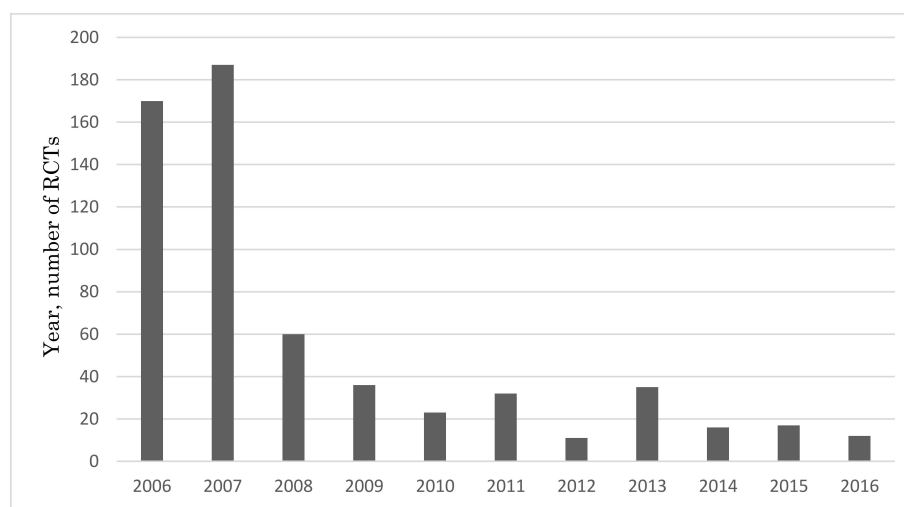


Figure 1. Trends in RCT applications. Source: [9].

Here, we aim to clarify the motivations for and perceived effects of registering for RCTs among the applicants, specifically for the forestry sector. By doing so, we aim to gain insights into the general patterns in applications and the social and economic backgrounds behind the applications.

There are a limited number of studies of RCTs, particularly for the forestry sector. For the forestry sector, the author in [10] introduced RCTs when the system was launched, so the review was based mainly on agricultural products. To our knowledge, a limited number of studies has been conducted, and there have been no evaluations or critical discussions regarding the effectiveness of this rather unique system in the forestry sector.

Although they are limited in number, there are certain relevant studies. The existing literature on RCTs focuses mainly on the legal aspects of trademarks in general or on agricultural products in the context of their influences on regional economies.

For example, the author in [11] conducted a detailed analysis of the effect of RCTs, noting that the application process (in addition to the final acquisition) is an integral part of regional revitalization. The process frequently includes awareness raising and consensus building with members and stakeholders, which contribute to the control and maintenance of quality and the motivations of the producers. Authors in [12] conducted a consumer survey in the metropolitan Tokyo area on cherries from the Yamagata prefecture. Based on the results, consumers' willingness to pay is significantly influenced by the indication of "Yamagata prefecture." In the case of RCT utilization, Arita Mikan (or *Citrus unshiu*), which was registered as one of the first RCT products, had the potential

to differentiate itself from other non-RCT products, and the registration facilitated the improvement of product quality control [13].

Authors in [14] clarified different motivations for RCTs of agricultural and fishery products; the “Kushiro Shishimo” trademark (or *Spirinchus lanceolatus*, a fish similar to capelin) was intended to improve publicity and create differentiation from other production sites, whereas the “Gamagori Orange” trademark was intended to improve awareness of quality management by producers. The “Makurazaki Katsuobushi” trademark (small pieces of sliced dried bonito in Makurazaki), with a 250-year history, was registered with the intention of preventing counterfeiting, which has happened in the past.

One reason for the absence of RCT studies for forestry is the lack of lawsuits. There have been no legal cases in the field of forestry, whereas there have been cases in agriculture, for example. If non-right holders use RCTs, the right holder can demand several measures, such as requiring the alleged infringer to stop such infringement, destroying the products constituting or resulting from such infringement, eliminating the equipment used for such infringement, or receiving damages from the person who manufactures, sells, or imports counterfeits infringing on the trademark at issue (Trademark Law Article 38; cf. also [9]).

In 2016, a right holder of the “Odawara Kamaboko” (a fish jelly product) RCT (Odawara Kamaboko Cooperative Association) filed a lawsuit that the defendant used the RCT without the permission of the trademark owner and claimed compensation for injunction sales and damages (Yokohama District Court Odawara Branch 2016 (wa) 154; case still in process).

Authors in [15] analyzed agricultural products with RCTs and suggested that timber and forest products have different properties from agricultural products. From the review of existing work, it is clear that the analysis of timber and forestry related RCTs is absent and remains largely unexplored.

2.2. Review of Timber/Forest Products and Intellectual Property

At the international level, discussions on intellectual property for timber and forest products have been conducted. The importance of intellectual property rights has also been mentioned in the field of forest genetic resources.

In the context of rural agroforestry, [16] introduced approaches and methods to establish stable positions in the market with patents, trademarks, and GIs for non-timber forest products.

In the utilization of forest genetic resources, there is a possibility of confrontation between intellectual property right holders and those who claim free access (everyman’s right) in Norway [17]. At the international treaty level, [18] refers to the importance of utilizing international intellectual property rights under the framework of free trade to secure the global value chain of timber.

At the local scale, a number of authors refer to the utilization of intellectual property as an integral effort to protect folklore, the traditional and local knowledge of local and indigenous communities who produce forest products with traditional techniques [19].

In other industry, the relationship between intellectual property including patents, collective intelligence, and performance was investigated [20–23]. As the effects of collective intelligence on open innovation differ among industries [23], the effects of regional collective intellectual property management on management practices of enterprises need to be investigated by industry. Forestry is one of the missing industries in terms of the research on intellectual property management, because of lack of research data and the large number of stakeholders due to the separation of place of production and processing timber. Considering the large influence of forestry on the global environment and their business sustainability, the status of intellectual property management in forestry needs to be analyzed and improved.

An overview of existing works is given in Table 2.

From the review, a limited number of studies deal with trademarks and timber and forest products at the product level. Furthermore, studies of producers’ motives for and perceived effects of obtaining trademarks are limited even at the international level.

Table 2. Existing literature on timber and forest products and intellectual property.

Topic	Theme	Research Site	Method	Publication
RCTs in Japan	Local timber	Japan	Review article	[10,15]
	brand/Intellectual property	Japan	Econometric analysis	[24]
	Local food and tourism	Japan	Qualitative survey	[12,25]
Intellectual Property Rights	Local food and brand	Japan	Qualitative survey	[12,25]
	Rural development	RCT	Review article	[11]
	Rural agriculture and agroforestry	Southern Africa	Qualitative survey	[16]
	Forest genetic resources	Norway	Qualitative survey	[17,26]
	Global value chain		Econometric analysis	[18]
	Traditional knowledge	Southeast Asia	Qualitative survey	[10]
	Medicinal plants		Qualitative survey	[27]
Intellectual Property Collective intelligence	Geographical indications	Indonesia	Qualitative survey	[28–32]
		Vietnam	Econometric analysis	
		Japan		
	Patent	Korea	Econometrics analysis	[20–23]
	Open innovation			

3. Methodology

3.1. Investigation Method

A survey was conducted for this research. In the first step, we obtained perceived data in a quantity sufficient for comparisons across different production sites. In the second step, we obtained supplementary details about the answers through face-to-face interviews. The intention of this analysis is to explore the subjective cognition and perception of certain RCTs by the forest associations. This questionnaire asked respondents from forest associations about the motivations for and perceived effects of RCTs. As possible answers, we used a similar format as [33]. We included six possible “motivation” choices: (1) to enhance price; (2) to prevent counterfeit goods; (3) to improve awareness and familiarity; (4) to increase inquiries; (5) to enhance awareness of quality control; and (6) to prevent usurped applications. The respondents chose three primary motivations out of the six options. Then, they were asked about the perceived effects of RCT registration in these six domains (price, counterfeit, awareness, inquiries, quality control, and usurped applications).

By these questions, we aimed to gain insights into respondents’ motivations and understanding of the legal instrument for the organizational culture and to examine the extent of how it is internalized. As an overall goal, we collected data on RCT applicants’ motivations and the effects they perceived, and we compared the results with the histories and contexts of the production sites.

For our main results, we sent a survey on regional RCTs to the subjects in July 2016. This questionnaire asked the applicants, specifically the officers in charge at the forest associations, about the motivations for the RCT applications and the perceived effects of the RCTs. The first question was related to the motives, and we provided the options from the list.

In the subsequent questions, we enquired about the perceived effects of the trademark. Regarding the effect of registration, we used a five-point Likert scale in the questionnaire to identify the degrees of the effects perceived by the right holders. For supplementary and comparative information to the questionnaire with scale datasets, we conducted interviews to further ask and confirm the meanings of the responses in the questionnaire.

3.2. Interviewed Forest Associations

The interviewed forest associations are listed with double underlines in Table 3. When there were multiple right holders for the same trademark, we selected interviewees based on the portion of contributions in terms of the extent of work for preparing submitted documents at the time of application. As the result, the following forestry associations were chosen.

The following cooperative forest associations were listed as interviewees. Kitayama-maruta (or Kitayama roundwood) is the RCT owned by the Kyoto Kitayama-maruta Production Cooperative. The right holder for the RCTs Yoshino wood, Yoshino-sugi (Yoshino cedar or *Cryptomeria japonica*), and Yoshino-hinoki (Yoshino cypress or *Chamaecyparis obtusa* Endl.) is the Nara Forestry Association.

The owner of the RCT Oguni-sugi (Oguni cedar) is the Oguni Town Forestry Association. The RCT of Kitayama-sugi (Kitayama cedar) is owned by the Kyoto City Forestry Association. The RCT Tohno-hinoki (Tohno cypress) is owned by the Gifu Prefecture Timber Cooperative Association. In the following section, we review the historical development of the timber and forest products under the individual RCTs. The development of the production areas and their influences on the current state and trends of the production areas are described simultaneously. Figure 2 shows the location of the applicant for each wood RCT.

Table 3. List of interviewed forest associations.

	Day Applied	Right Holders
Kitayama-maruta	12/15/2006	Kyoto Kitayama-maruta Production Cooperative
Yoshino wood	1/5/2007	
Yoshino-sugi	2/8/2008	Nara Forestry Association, Nara Timber Cooperative Association
Yoshino-hinoki	2/8/2008	
Kitayama-sugi	2/15/2008	Kyoto City Forestry Association, Kyohoku Forestry Association, Mayama Town Forestry Association, Hiyoshi Town Forestry Association, Yagi Town Forestry Association
Nanbu-no-Ki	1/16/2009	Nanbu Town Forestry Association
Oguni-sugi	3/21/2008	Oguni Town Forestry Association, Aso Forestry Association
Nishikawa wood	3/6/2009	Nishikawa Forestry Association
Tohno-hinoki	2/5/2010	Gifu Prefecture Timber Cooperative Association, Gifu Forestry Association
Ryujin wood	11/12/2010	Ryujin Village Forestry Association



Figure 2. Locations of RCTs in the forest products sector (Source: Open Street map).

We listed the wood (in groups) or the individual brands along with the lengths of their histories in the overview (Figure 1). We categorized the brands into three groups, as shown in Figure 3. The brands included in Group 1 were established before the 16th century, the brands in Group 2 were established after the 18th century, and the brands in Group 3 were developed after the 1950s.

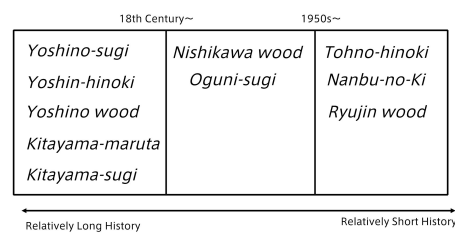


Figure 3. RCT brands with the relative lengths of their histories.

We will introduce the individual RCT brands in chronological order of when they were registered. The first case is that of Kitayama-maruta in Kyoto. The region, Kyoto Kitayama, has an ancient history as a production site for polished logs (or maru-maruta in Japanese). It is worth noting that Kitayama-maruta and Kitayama-sugi (Kitayama cedar) are from the same timber, but the trademarks of the two are held by two separate right holders. The former is registered by processors' associations, and the latter is registered by producers' associations.

Specifically, the RCT of Kitayama-maruta is held by the Kyoto Kitayama-maruta Production Cooperative Association and the Keihoku Timber Production Cooperative Association, which consist mainly of processors. The RCT of Kitayama-sugi is held by the Kyoto City Forestry Association and four other forestry associations, which consist mainly of producers. The author in [34] pointed out that the skill of processing Kitayama-maruta and silvicultural techniques have accumulated in the Kitayama area over time.

However, the demands for this timber drastically decreased after the late 1990s due to changes in housing styles, because Kitayama-maruta were mainly used in traditional housing, such as Tokobashira, which are key features of Washitsu, or Japanese style rooms [7]. A large number of log-processing entities experienced critical conditions, including being forced into bankruptcy.

The next case is that of Yoshino wood, Yoshino-sugi, and Yoshino-hinoki (hereafter, Yoshino woods) from the Yoshino district in the Nara prefecture. The Yoshino area established its position as a timber production site in the Edo era through its lumber production associations (or zaimoku-kumiai), composed of workers and craftsman at the time [35]. The author in [36] analyzed the origin of the establishment of Yoshino forestry and found that there was already a forestation technique, called the Yoshino forestry method (or Yoshino ringyo hoshiki), in the Edo Period. The uniqueness of Yoshino woods comes from the sawing process, and the logs used do not necessarily need to be from the area. Yoshino forestry faced a crisis in the latter half of the 1990s because of the drastic decrease in housing demand and high-quality wood in the 1990s [37]. The production volumes were reduced to ten percent compared to the peak volume in the mid to late 1980s.

The third case is that of Kitayama-sugi, which are actually the logs of Kitayama-maruta from the first case. These logs are cedar timbers artificially planted mainly in the Nakagawa Kita ward of the current Kyoto city area. The processing industries, from wood production to round wood logs, were a significant and traditional industry in the area since the Edo period [38]. Furthermore, afforestation and forestation were promoted during the high economic growth periods of the 1950s and 1960s, and the area established itself as a cedar producing area, second to the Yoshino area. Similar to the Yoshino woods and Kitayama-maruta, the scale of Kitayama-sugi shrunk drastically and its production volume fell in the late 1990s, and the area lost its position as a production site.

The fourth case is that of Nanbu-no-Ki (the literal translation is "trees from the south"), which refers to the cedar and cypress wood produced in Nanbu town in the Yamanashi prefecture. Historically, the area branded its woods as the "Fuji river woods" in the 1970s, aiming to establish itself as a production site. Nevertheless, the area is facing difficulties maintaining the wood price since the collapse of the bubble economy in the early 1990s [39].

The fifth case is that of Oguni-sugi, from the Kyusyu area, produced in Oguni town in Aso county and Minamioguni town in the Kumamoto prefecture. In 1891, the forestry of the Oguni-sugi started with the introduction of the Yoshino cedar, which was an advanced type at the time, and became

a major industry in the area [40]. Furthermore, [41] pointed out that Oguni forestry has a history of over 250 years. There has been a long history of reforestation of cedar plantations in the Oguni region with established silviculture techniques. There are, however, no processing techniques, and no major sawmills are located directly within the Oguni region. The region could not establish itself with processed products, and the brand remained round woods, rather limiting the region as a supplier of raw materials to be processed elsewhere.

The sixth case is that of Nishikawa wood. The Nishikawa area, the production site of Nishikawa wood, is located in the western part of the current Saitama prefecture, which is 40 to 60 km from metropolitan Tokyo (or Edo, the historical capital). In the late 1600s, the Nishikawa district introduced afforestation, gradually establishing itself as a production site providing materials to Edo (currently, Tokyo) by river channels while improving its silvicultural techniques [42]. Sawmills did not historically accumulate in the area, and the area's main function remained the shipment of raw logs. In the 1980s, Nishikawa started to provide logs to the Yoshino and Sakurai areas as raw materials to be processed and branded as “Yoshino wood” for shipment. In other words, they focused on providing raw materials for the more established brand of Yoshino. As the Yoshino area declined in production, Nishikawa wood lost its competitive edge as a provider in the 1990s.

The seventh case is that of Tohno-hinoki (Tohno cypress). Tohno-hinoki refers to logs and processed board materials produced in the Tohno region (part of the current Gifu prefecture), and a large number of studies have focused on this case (e.g., [43–45]), as the region has been a major production cluster site since 1965.

The author in [46] pointed out that the Tohno is located near a major precious wood supplier, the Kiso district. Kiso historically provided mainly to the large, adjacent Nagoya market. Tohno-hinoki had to differentiate itself and shipped mainly to the market in Tokyo. It established itself as a nationwide production area after 1965. According to the brochure published by the Quality Control Center for the Tohno-hinoki in the Gifu prefecture, it is recorded that construction products of pillar logs made from the cypress in the area started to circulate under the name Tohno-hinoki roughly around 1963 [47]. Tohno-hinoki collected logs from other areas and sawed and shipped them under the “Tohno-hinoki” brand. Its production also declined drastically after the 1990s, as the differences between brands or production sites started to matter less, and price pressure increased.

Lastly, Ryujin wood indicates both cedar and cypress wood produced within the Ryujin village, which is in the area of the current Tanabe city in the Wakayama prefecture. The whole village started to differentiate itself as a wood brand from the 1960s, and it established a voluntary organization (without a legal entity) called the “Ryujin Forestry Development Council” in the 1970s to promote the area as a wood producing area [48]. Ryujin wood became widely known among wood-construction workers as a source of good quality products through the efforts to establish the Ryujin Forestry Development Council [49].

Although Ryujin wood did not establish itself as a separate brand in the market, its price was relatively high in the area because it was known as a high-quality log provider for Yoshino wood. In other words, the brand became known in combination with the Yoshino wood brand. As the price and supply collapsed in the Yoshino area, the price for Ryujin wood declined as well.

4. Results

4.1. Analysis of Motivations

We present the options that the forestry associations chose as their primary motivations for their RCT applications. The results are summarized in the shaded text in Table 4. The primary motivations for applications largely fit into two categories: the “prevention of counterfeit items” and the “improvement of recognition and awareness.” The former aims to establish legal rights for the brands using an RCT, and the latter aims to utilize the RCT registration event as a publicity tool.

Table 4. Motivations for RCT applications and perceived effects.

Wood and Forest RCTs	Motivation and Perceived Effects of Application					
	1	2	3	4	5	6
Kitayama-maruta		○			○	○
Yoshino *		○	△	△	○	○
Kitayama-sugi		○	△	△	○	○
Nanbu-no-Ki	●		○	●		
Oguni-sugi (cedar)	●		○	○		
Nishigawa wood (lumber)	●		○	△	○	
Tohno-hinoki	●		○	△		○
Ryujin wood		△	○	○	○	

* Yoshino includes Yoshino wood, Yoshino-sugi, and Yoshino-hinoki. (1) To enhance price; (2) To prevent counterfeit goods; (3) To improve awareness and familiarity; (4) To increase inquiries; (5) To enhance awareness of quality control; (6) To prevent usurped application. Legend ○ Intended at the time of application and perceived effects after registration, with relatively high perceived effects (4 or 5) on a scale from 1 to 5. ● Intended at the time of application and no perceived effects after registration, with relatively low perceived effects (1 or 2) on a scale from 1 to 5. △ Not intended at the time of application and perceived effects after registration, with relatively high perceived effects (4 or 5) on a scale from 1 to 5. Shading in the table indicates the primary motive for application.

Kitayama-maruta, Kitayama-sugi, Yoshino wood, Yoshino-sugi, and Yoshino-hinoki named the “prevention of counterfeit items” as the motivation for application, whereas Nishikawa wood, Oguni-sugi, Tohno-hinoki, the Nanbu-no-ki, and Ryujin wood chose the “improvement of recognition and awareness” as the motivation for application.

The main purpose for registering Kitayama-maruta was to prevent confusion and mixture with neighboring wood production areas. The registration of Kitayama-sugi has the aim to prevent the use of the regional name Kitayama for counterfeit products. Because “Yoshino” has appeared in exported lumber from China in the past and the experience was shared, the forest associations decided to take proactive measures to control counterfeit goods.

We next consider Nishigawa wood and Oguni-sugi. The primary motivation for registering Nishigawa wood was to obtain nationwide attention by acquiring an RCT. The brand Oguni-sugi, in a similar vein, aimed to improve its name recognition. They were inspired and motivated by the Kurokawa Onsen (hot spring) in the same municipality, Minmi-Oguni city, which acquired an RCT for a hot spring resort.

The registration of Nanbu-no-Ki primarily aimed to improve the recognition and awareness of the brand through RCT registration. This brand needed to differentiate itself because a different brand in the vicinity, Fuji-hinoki (Fuji cypress), has a larger production volume. Tohno-hinoki and Ryujin wood had similar primary motivations of raising their brand recognition and awareness.

Ryujin wood has had a long-standing challenge to improve its publicity and brand in the Tokyo metropolitan area, its major consumption destination. Thus, it aimed to establish itself as nationwide brand by registering the RCT.

Although it did not rank as the primary motivation, Kitayama and Yoshino woods also chose the improvement of management awareness by the members for quality control. The other RCTs tended to choose price enhancement.

We will analyze the results with the research question. For the research question of context dependency, the primary motives for application differ depending on the RCT and the place of production.

The RCTs can be sorted into two groups according to their motivations. The Kitayama and Yoshino RCTs had similar motivations for preventing counterfeit goods, and the other RCTs (Oguni-sugi, Nanbu-no-Ki, Nishikawa wood, Tohno-hinoki, and Ryujin wood) tended to choose the motivation of increased publicity and recognition. There were similar patterns in primary motivations across the two groups. Kitayama and Yoshino also had similar patterns in the secondary motivations in that they

both intended to increase the awareness of members. In the other group, there were no clear patterns in any motivations other than the primary ones.

4.2. Analysis of the Effects Perceived by the Right Holders after Registration

Figure 4 indicates the overall patterns in perceived effects. From the results, four RCT right holders perceived the first option, the positive effect of preventing counterfeit goods.

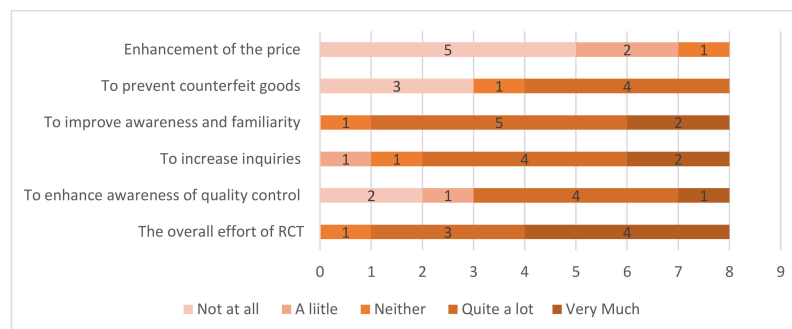


Figure 4. The perceived effects of RCTs.

For the second option, seven of the right holding forest associations, a majority, perceived positive effects in terms of improved awareness and familiarity. More than half of the right holders perceived the effect of “increased inquiries.” None of the right holders perceived the effect of “price enhancement,” which is one of the striking differences from the experiences of other products, including agricultural products. As regards the price premiums for RCT products, there is a need for future study to trace the price impact of an RCT, which is difficult to differentiate from other effects.

More than half of the RCT holders perceived the effects of “improved awareness of quality control” for the members. For the overall effects of the RCT, four right holders answered positively in a strong manner, and three answered positively but to a lesser extent. As for the effects of “preventing counterfeit goods,” the RCTs under Kitayama and Yoshino did perceive such an effect. In addition, the holder of the Ryujin wood RCT also perceived such effects, as it is a relatively new brand. All of the other RCTs answered negatively for this effect. As there were no major conflicts or lawsuits after the introduction of RCTs for forestry products, it is likely that there were no counterfeit goods to address, and, hence, these effects were not felt.

RCT holders have received not only the effect of “increased inquiries” but also the effect of “improved awareness and familiarity” despite not intending to obtain these effects. In particular, RCT holders who mainly intended to “prevent counterfeit goods” did not intend to obtain the effects of “increased inquiries” when they applied for an RCT, but they perceived the effects of “increased inquiries” after registration. Regarding the effects of “price enhancement,” the RCT holders expected such effects when they applied for an RCT, but they could not perceive such effects after registration.

The effect of “enhancing awareness of quality control” was perceived by the holders of the Kitayama-sugi, Kitayama-maruta, Yoshino wood, Tohno-hinoki, and Ryujin wood RCTs. Those RCT rights holders who chose quality control as the motivation for registration perceived these effects as well.

We provide examples of the specific effect in the following. These examples include Yoshino woods, which prevented the use of its brand by other woods. The Nara Forestry Association, which registered the Yoshino woods brand, informed wood producers outside of the Yoshino region that the name “Yoshino” could not be used for other woods. After the registration, unauthorized use of the name “Yoshino” was not reported. In this circumstance, the Nara Forestry Association perceived the effect of “preventing counterfeit goods.”

With the RCT registration of Kitayama-sugi and Kitayama-maruta, products that were grown and sawed exclusively in the Kitayama areas were allowed to use the Kityama RCT. The RCT registration deterred products from other areas from using the brands Kitayama-sugi and Kitayama-maruta.

As for “improved awareness and familiarity,” Nishikawa wood was broadcasted on television when it was registered as an RCT, contributing to its publicity. Similarly, nearby carpenters ordered Nishikawa wood lumber directly when the RCT registration was introduced at the forest association website. This is a classic example of “increase in inquiries.”

Alternatively, all of the answers were negative for the effect related to “price enhancement,” and the patterns in all of the RCT wood prices generally tended to decrease after RCT registration, as we review below. Price patterns are influenced by other factors, such as international trade and construction of housing, and individual RCT registrations seem to have limited impact.

For Kitayama-maruta, the unit price per polished log was 19,597 yen in 1989. The price decreased to 6098 yen in 2004 and 5753 yen in 2008, when the RCT was registered. It was lower, at 5625 yen, in 2010 and the downward trend has not changed since then. For the perceived effect of “enhance awareness of quality control,” the RCT registration became an opportunity to hold regular meetings to maintain the status and foster the brand in the case of the Kitayama-sugi RCT.

Lastly, we examine the third research question of whether there are any specific RCT patterns in the forestry sector (timber and forest products) when compared with other products. The general patterns in RCT registrations and effects are indicated in the two figures below (Figure 5 presents the general patterns in motivations of RCT applications, and Figure 6 presents the general patterns in the perceived effects of RCTs). From the figures, the motivations are similar for forestry and other sectors. The perceived effects of preventing counterfeit goods and improving awareness and familiarity were high for the forestry sector. The ratio for the “quality control” and “price enhancement” options were higher for the general sectors. Alternatively, we did not see any perceived effects of “price enhancement” in the forestry sector. In summary, there were certain sector-specific patterns for the forestry sector.

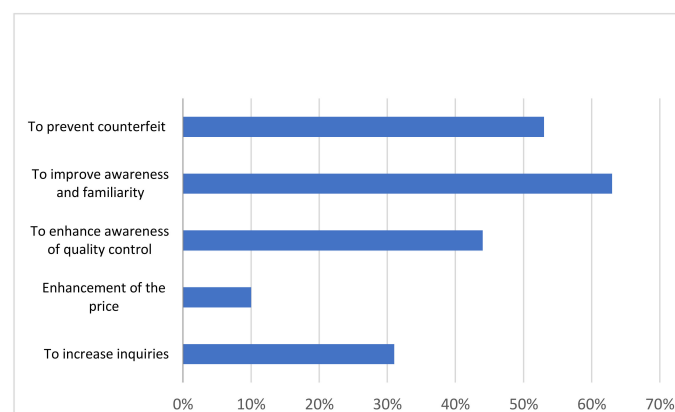


Figure 5. General patterns in motivations for RCT applications. Source: [33] (n = 356 RCT products/services).

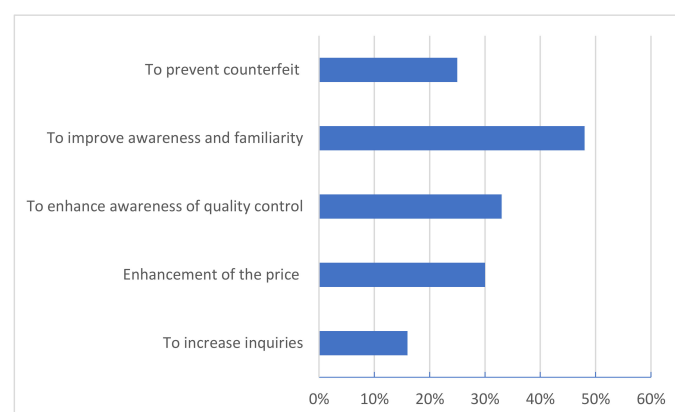


Figure 6. General patterns in the perceived effects of RCTs. Source: [33]. (n = 356 RCT products/services).

5. Conclusions and Discussion

RCT registration was launched in 2006, and more than a decade has since passed. After ten years of registration, RCT right holders need to consider whether to renew their period of registration. As shown in Figure 1, the majority of RCTs were registered in the earlier period (2006 or 2007) of RCT availability, which suggests that the majority of the RCTs will enter the renewal period. For the forestry sector, all registered RCT right holders have indicated their willingness to continue holding an RCT in the future.

From our results, forest associations' general motivations for and perceived effects of RCTs were identified in one of the first comprehensive reviews of sector-specific analysis of RCTs.

The primary motivations of forest associations for applying for RCTs were preventing counterfeit goods and improving awareness and familiarity. It was identified that the relative lengths of the brand histories have impacted the current branding strategies, including the motives for RCT applications.

For the Kitayama and Yoshino brands, with relative long histories, the primary motives were the prevention of counterfeit goods. These brands had already high publicity due to their long histories at the time of registration.

There were, however, no perceived price improvement effects for all of the brands, regardless of length of the history or the geographical location. This finding implies that the primary motivation for renewing the RCT registration is not economic benefits in the narrow sense.

As a concluding remark, RCTs played a role in branding the products, not necessarily for a price increase but for other factors, including the prevention of counterfeits, quality control, and awareness inside and outside of the organizations.

Through discussions about RCT registration, there were additional effects in that the members of the forest associations started to explore means (e.g., Forest Certifications and Geographical Indications) and instruments other than RCTs to add high value and enable the branding of their products. These members deepened their understanding of the market and consumers.

In other words, the RCT application process itself had an effect of awareness and enlightening. We identified that the motivations and current strategies are embedded in a brand's history, and there are differences between the relatively young and relatively old RCT forestry brands.

Timber products have become less related to the place of production, and prices are the major focus. The Japanese forestry sector is struggling to have a competitive edge over other producers, particularly in terms of competing with imported products on price.

For the first renewal, all the forest associations intend to renew their RCTs. The motivations of the RCT holders are not primarily related to the price. It remains to be seen whether the RCT brands can differentiate themselves to consumers and constructors in terms of quality or brand stories. It may not necessarily be reflected in price, but whether these differences are acknowledged or not is one of the key elements that will influence whether the RCTs will be further renewed sustainably in a longer context.

Note: Dates of interviews (in 2016):

Kyoto Kitayama Log Cooperative Association: April 15

Nishikawa Wide Area Forestry Association: July 6

Nara Prefecture Forestry Association Federation Association: June 24

Minami Town Forestry Association: July 7

Oguni Town Forestry Association: July 12

Ryujin Village Forestry Association: July 21

Kyoto Municipal Forestry Association: July 29

Federation of Gifu Prefecture Timber Cooperatives: July 31

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