

Career Management of Human Resources that Facilitate Cross-Sectoral Inter-Organizational Collaboration: A Comparative Study of Cases in Japan and Germany on Efforts to Promote the Agricultural Food Industry

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Abstract

This study investigates the agricultural food industry and how to make it more competitive by upgrading its industrial structure. To solve this, we investigated the skills and the career management of human resources whose role is to facilitate cross-sectoral inter-organizational collaboration and create high value-added businesses. Following the presentation of a conceptual model created based on a review of previous studies, this study aims to construct a theory based on the results of a comparative analysis of three cases in Japan and Germany. The results of this analysis indicate that human resources for facilitating cross-sectoral inter-organizational collaboration have several skills that are classified as human, technical, and conceptual skills. Two cases in Japan put great emphasis on career development through on-the-job training (OJT) and work experience, whereas in Germany, suitable personnel are recruited from the external labor market and are further developed by learning technical and human skills through an off-the-job-training (Off-JT) system. An analysis of the effect of networks with related businesses on human resource development showed that Germany has an evaluation system that does not exist in either case in Japan, and that this system is linked to the continuous career management of human resources. The initial conceptual model was corrected based on the analysis of results.

Keywords: *cross-sectoral inter-organizational collaboration, human resources, career management, agricultural food industry*

1. INTRODUCTION

The sluggish economic growth and declining industries in Japan, coupled with the loss of the competitiveness of traditional industries as emerging countries catch up, have resulted in a nationwide necessity to upgrade the industrial structure and promote new and highly competitive industries. To overcome this challenge, it is essential to develop innovations and create new businesses with even higher added value. This can be achieved by leveraging the potential of every region in the country and establishing cross-sectoral inter-organizational collaboration involving companies of various industries, universities, and research institutes. For this reason, human resources that facilitate cross-sectoral inter-organizational collaboration are becoming increasingly important.

The shortage of individuals capable of addressing the challenge of fostering competitive new local industries through cross-sectoral inter-organizational collaboration in the high-growth sectors of food and agriculture in Japan is evident. Therefore, in this study focuses on the career management of human resources responsible for establishing and managing collaboration between the local and national business entities of various fields, to promote local industries and create businesses with high value-added. To this end, we discuss their career development, skill development opportunities, and newly developed skills, to investigate the following research theme: *“What skills are required for human resources to facilitate the complex self-organization process of establishing a cross-sectoral inter-organizational collaboration toward promoting competitive and new local industries through upgrading industrial structures? Moreover, how are those skills learned?”*

We focus on three cases to answer the above questions: two Japanese cities designated as National Strategic Special Zones¹⁾, Yabu (Hyogo Prefecture) and Niigata (Niigata Prefecture), as well as Bavaria, in Germany, which promoted its agricultural industry using a cluster system. Both Yabu and Niigata aim to facilitate cooperation in agriculture—a field with high growth potential in Japan—and consequently promote the local agricultural industry through the sixth industrialization²⁾.

First, Yabu City, which was designated as a National Strategic Special Zone in 2014, revoked some restrictions previously imposed on agriculture and has facilitated cross-sectoral inter-organizational collaboration to upgrade its industrial structure. This effort was part of the mayor’s initiative to rescue the city’s decaying agriculture and recover abandoned agricultural land. To this end, the mayor sought to optimize the farmers’ work and facilitate cooperation with private companies and research institutes, to promote structural reform in the city’s agricultural sector and develop new businesses. Consequently, the city revitalized its abandoned agricultural land and successfully enhanced the value of agricultural products and food through the sixth industrialization, which was made possible by cross-sectoral inter-organizational collaboration. The city also participates in integrated regional development that leverages the city’s potential in agricultural products that can also be exported, tourism, and history and culture.

Following the above-mentioned efforts, companies have taken advantage of relaxed regulations and acquired agricultural land (51.1 ha). Additionally, agricultural restaurants have been built in the city. Moreover, 13 companies have joined the special zone as agriculture-related business entities and founded the agricultural production corporations that operate in the region. Some of these entities that aim for the sixth industrialization have gained support from the city to partner with numerous manufacturing and sales companies, universities, and the chamber of commerce and successfully developed and released new products. Owing to the initiatives above, 30% of the companies operate in the black today, abandoned cultivated land was eliminated, approximately 100 new jobs were created, and sales of 265 million yen were registered (Yabu, 2020; Homepage of Kansai University).

The other city, Niigata, started the New Food Valley initiative in 2011 and was designated a National Strategic Special Zone in 2014. After revoking restrictions associated with previous regulations, the city has been implementing measures to facilitate cross-sectoral inter-organizational collaboration in the agricultural field and bring advances to its industrial structure. In 2005, when a

region with about 300,000 people was merged into a large agricultural city, it had to create a new brand image for itself. Additionally, the city ranks first in agricultural output (2018) among ordinance-designated cities (Economic and Industrial Policy Bureau of Niigata, 2020). However, in recent years, this city has been experiencing a decline in the number of farm households and agricultural workers.

In this context, the mayor promoted the New Food Valley concept as an attempt to capitalize on not only the concentration of agriculture and food-related industries but also the existence of many research institutes and supporting organizations required for these advances. Since then, Niigata has been designated as a National Strategic Special Zone and has engaged in the sixth industrialization by facilitating cross-sectoral inter-organizational collaboration between agriculture, commerce, and industry. Consequently, nine companies have joined the initiative, including the major convenience store chain Lawson. In conjunction, these companies founded a special agricultural corporation that collaborates with farmers in the city and uses the benefit of relaxed regulations as a special zone to develop new businesses. The farming area of these Special Agricultural Corporations increased from 16.2ha in 2015 to 35.4ha in 2017. The number of employees also increased from 36 to 76 during the same period (Fisheries Division, Department of Agriculture, Forestry and Fisheries, Niigata Prefectural Government, New Food Valley Special Zone Section, 2019). Additionally, in 2016, the three first farm restaurants in Japan were opened.

The management of the promotion of the agricultural cross-sectoral inter-organizational collaboration is mainly taken care of by the city employees of the department in charge of the special zones in Yabu, and by employees of the same department and entities in the peripheral areas of Niigata. Based on the initial conditions of each region, these staff members have been responsible for promoting cross-sectoral inter-organizational collaboration by mediating the contact between potential participants and stakeholders and coordinating the match between related parties (Kawabata/Nishio, 2021a; Kawabata/Nishio, 2021b).

In addition to these two cases in Japan, we

analyzed the case of clusters in Bavaria, Germany. The country promotes innovation through cross-sectoral inter-organizational collaboration that goes beyond the traditional framework, connecting companies of various industries and universities/research institutes inside and outside each region. It has built a support system based on cluster policies designed to promote the creation of new businesses with high value-added using local potential. In 2006, the Bavarian State Ministry of Economic Affairs, Energy and Technology (“Ministry of Economy” below) built this regional support system for cluster policies and specified 17 industrial fields that would be eligible for support. The state has been pushing for this policy³; the agricultural food industry—this study’s main subject—is one of those 17 fields.

Bavaria has been promoting advanced initiatives designed to add high value to the agricultural food industry through cross-sectoral inter-organizational collaboration. As mentioned above, in 2006, the state initiated the cluster policy and further founded a cluster organization referred to as Cluster Ernährung⁴, which facilitates cross-sectoral inter-organizational collaboration in the agricultural food industry and is still active to date. Consequently, by 2016, “approximately 30,000 people participated in as many as 1,000 events, workshops, and round table meetings, resulting in a valuable stimulus to the agricultural food industry, which became the foundation of more than 150 cooperation projects” (Cluster Ernährung, 2016, p.3). To conduct the survey for this case, we collected material from the internet, from sources such as the home page of Cluster Ernährung. Moreover, based on the data obtained from the material collected, we created interview topics and requested an interview with the Managing Director (“MD” below) of the said organization at the time.

This study is a comparative study between cases in Japan and Germany designed to construct theories based on questions set to achieve the research objectives above and case studies. Based on these questions, this study proceeds as follows. Section 2 analyzes previous studies, defines the challenges of the career management of human resources that facilitate cross-field collaboration, and presents a conceptual model. Section 3 presents

the analysis results of each of the three previously mentioned cases of Japan and Germany. Section 4 presents the results of a case comparison and the analysis results of a conceptual model. Section 5, which concludes the study, presents the suggestions provided by the research results concerning the above questions, as well as the limits of this study and topics for future research.

2. ANALYSIS OF PREVIOUS RESEARCH AND A CONCEPTUAL MODEL

2.1. Analysis of previous research

To formulate questions about the career management of human resources that facilitate cross-sectoral collaboration, previous studies were reviewed from four perspectives: career development, OJT, the managers' skills, and the relationships in human resource development.

Schein (1978), who clarified the concept of career, created a model for Human Resource Planning and Development (HRPD), a basic model for organizational planning and the process of career development. He asserts that human resource development should be discussed using a long-term framework. Moreover, according to Schein (1978), individuals in their early career experience challenges in establishing their area of contribution; the human resource management initiatives conducted during this period include job rotation, performance evaluation, and development training. Hence, human resources are developed based on the challenges of the individual and the actions of the organization.

Additionally, one of the challenges of mid-career individuals is the establishment of career anchors, which serve as the core of long-term career development. To solve this problem, the organizations provide continuous education/job redesign or rotation, and part-time and creative work, which indicates that careers are developed through a balance between individuals and organizations. Regarding the career management of human resources that facilitate cross-field collaboration, based on Schein's (1978) perspective of challenges associated with the individuals' career development and the involvement of organizations,

evaluation and training and continuous education and creative work should be the focus in the early and mid-stages of the career.

Koike published popular studies on on-the-job training (OJT), a method of teaching and training employees in workplaces (1991, 1993, 1997), in which he cites the workers' intellectual proficiency as one of the factors behind the high productivity of factories in Japan; in other words, workers perform other related works, widen their skill set, and gradually engage in intellectual work. Koike (2002) further states that compared with blue-collar workers, the skill innovation for white-collar workers requires higher levels of "response to abnormalities and changes" and "judgment and planning-related work."

Further, it is assumed that Koike's OJT-based human resources development that seeks "to achieve intellectual proficiency through widening skill development" is also valid for human resources that facilitate cross-sectoral inter-organizational collaboration. However, this framework does not specify when or what must be acquired to develop skills easily. This can be complemented by the previously mentioned Schein's (1978) interaction between organizations and individuals focused on the career development process, as well as Shimizu & Nishio (2020), who, based on a comparative study on human resource development in expertise-and-creativity-demanding traditional arts in China and Japan, suggested that the development of basic skills at school eases OJT in later years.

Human resources responsible for cross-sectoral inter-organizational collaboration are considered the key elements that coordinate between organizations. Moreover, their job is said to require a certain level of experience and attitude. For this reason, we examined a study published by Kusumi (2012), which examined the skills required for managers. Kusumi (2012) categorizes managerial skills into three: technical, human, and conceptual. Technical skills are equivalent to specialized abilities, which are procedures, skills, and content-related knowledge that sustain work performance. Human skills are interpersonal relation skills that concern the ability to understand and empathize with customers, bosses, colleagues, and subordinates, convey thoughts and feelings clearly, and build

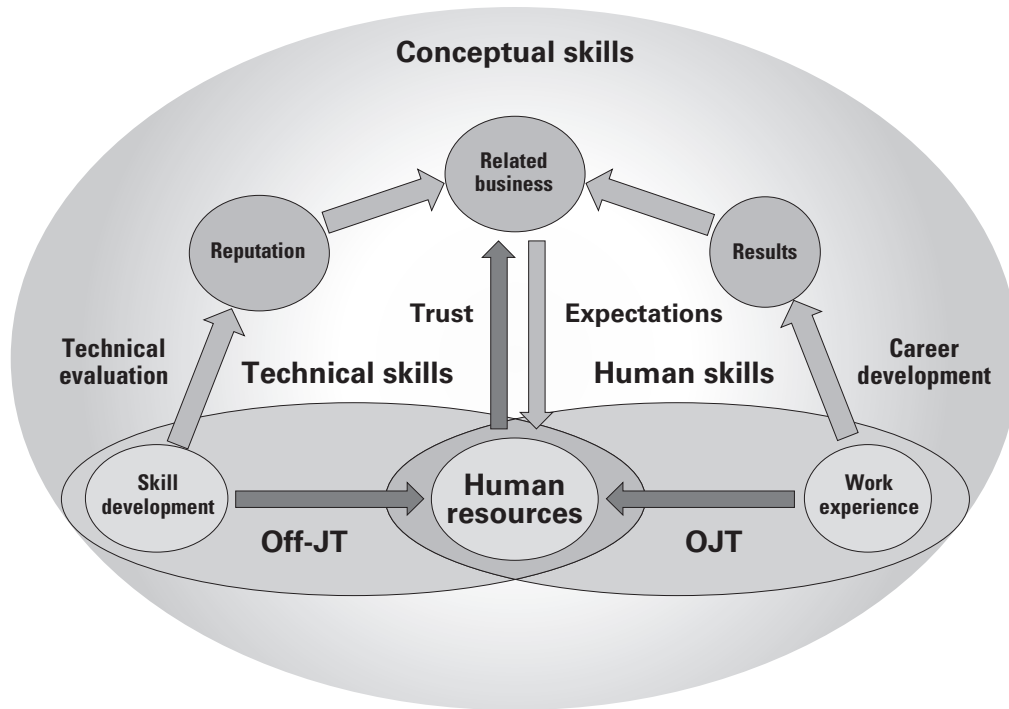


Figure 1: Conceptual model of skills and career management of human resources that facilitate cross-sectoral inter-organizational collaboration

Source: Created by the authors

and maintain good relationships. Conceptual skills are related to the ability to recognize and analyze complex situations and changes, detect problems, and provide practical and creative solutions. As the level of organizational hierarchy increases, these three categories of skills require a higher level of sophistication, and conceptual-level skills become more essential for managers.

Additionally, Matsuo (2006), who examined managers' process of learning through actions, made a qualitative analysis of the kinds of experience reported by IT consultants and IT Project Managers ("PM" below) in each developmental stage of their careers. The analysis showed that both sets of professionals learned about job-related and customer management skills in their early and mid-career, after which they begin to obtain area-specific knowledge in the respective profession. The analysis further showed that during that learning process, consultants in mid-career undergo "non-gradual learning" by executing an extremely difficult project on their own, and that

PMs gain work experience that enables "gradual learning," in which the job gradually becomes more difficult.

One of the studies on career management of human resource through relationships was conducted by Nishio (2007)⁵⁾, who focused on the structure of business system and career management of human resource in the businesses of the Japanese traditional culture industry. She showed that owners of "ochaya"—a specialized type of business that works as a hub for collaboration among businesses—actively get involved in the training of highly specialized skills and devote themselves to the career management of human resources, which are the base of service provisioning. She also demonstrated that on some occasions, the sales information of ochaya—which contributes to bundling up different types of services—is made available to other peers in the industry. Consequently, ochaya's reputation is naturally spread and shared among related parties.

In another study, Nishio (2019) also examined

the relationship between owners of ochaya—which is at the center of collaboration between Japanese hospitality providers—and related parties (including customers). This study indicates that the parties, who share a goal of offering high-value services, exchange information on mutual trust and expectations for the provision of value-added. Based on the assessment of the information collected, the ochaya owners learn the needs of the related parties, involve new businesses in the collaboration, and offer new services to the customers.

Based on these previous studies, we constructed a conceptual model concerning the skills and career management of human Resources that Facilitate cross-sectoral inter-organizational collaboration. We also formulated the following research questions to analyze this model:

- Q 1. What skills (technical, human, and conceptual skills) do the human resources that facilitate cross-sectoral inter-organizational collaboration have?
- Q 2. How are these skills learned and developed through career development and Off-JT/OJT?
- Q 3. How does a network with related businesses affect human resources development?

2.2. Research method

To answer the three questions above, first, we examined the two cases in Japan. After carefully examining the home page of the cities of Yabu and Niigata and other material received, we requested the two cities an opportunity for an interview survey, to which both agreed.

Between July and September 2020, we conducted three interview surveys with various persons of the Yabu municipal office, such as the manager in charge of cross-sectoral inter-organizational collaboration support. These interviews were conducted on Zoom owing to the situation of the COVID-19 pandemic at the time. Further, in December 2021, the situation eased off a little, during which we conducted a field survey in Yabu and visited the city's sixth industrialization support center. There, we interviewed the staff in charge and conducted an additional interview survey with the same participants of the 2020 survey.

The process in Niigata was similar. Between

August and December 2020, we conducted three interview surveys with various persons in charge of cross-sectoral inter-organizational collaboration support in Niigata. These interviews were also conducted on Zoom, owing to the COVID-19 pandemic. When the pandemic subsided in November 2021, we visited the Niigata Agricultural Development Research Center and re-interviewed the persons in charge and the same participants of the 2020 survey.

Regarding Germany's case, we examined the characteristics of German cluster organizations based on Kawabata (2019) and collected material from the home page of Cluster Ernährung to formulate question items, which were sent via e-mail. Further, based on the answers written by the current MD alongside the previous MD, we conducted a more comprehensive interview. This interview survey was conducted in August 2021 by the current MD on Zoom, owing to COVID-19.

3. ANALYSIS RESULTS

3.1. Yabu

In Yabu, we mainly interviewed Mr. A and Mr. B⁶⁾. Mr. A previously worked in an agricultural engineering office, was in charge of a PFI business, and later became the section chief of the National Strategic Special Zone Promotion Headquarters. In 2013, he prepared a regulatory reform plan by himself, using advice from university teachers he had worked within the PFI business. He explained this regulatory reform plan at the Cabinet Office with the mayor of Yabu. He further worked at the office of the National Strategic Special Zone Promotion Headquarters and was later promoted to section chief. After acquiring basic managerial knowledge through OJT, he used his networks inside and outside the organization and his relationship with the upper echelons of the organization to coordinate the early stages of the National Strategic Special Zone.

Mr. B is responsible for coordinating with corporations in Yabu, that have recently joined the National Strategic Special Zone. He uses his skills to ensure smooth communication between companies and stakeholders in the areas those

companies are developing businesses. To ensure these skills are employed as a team, he identifies personnel considered highly skilled within the organization and appoints them as members of the National Strategic Special Zone.

We classified the results of Mr. A and Mr. B's interview survey based on skill type and identified the following:

Technical skills

- Mr. A :Having knowledge of regulatory reforms
:Developing a network of external specialists (e.g., university professors) and drawing upon their expertise
:Having no marketing knowledge
- Mr. B :Considering local issues as his own, based on previous experiences as a part-time farmer

Human skills

- Mr. A :Sharing information effortlessly with the mayor based on the relationship of mutual trust with them
:Building networks with external specialists
- Mr. B :Using networks inside the government office to identify human resources with skills to coordinate with companies
:Using creativity to ensure that companies have a clear understanding of the local situation

Conceptual skills

- Mr. A :Identifying issues in cross-sectoral inter-organizational collaboration (based on advice from external specialists)
:Understanding the situation in each district and making necessary adjustments
- Mr. B :Providing young personnel with opportunities for hands-on experience in cross-sectoral inter-organizational collaboration
:Seeking to maintain ongoing businesses and existing relationships with companies

The results of the survey in Yabu confirmed that knowledge and skills are acquired through OJT and that the city develops human resources facilitating cross-sectoral inter-organizational collaboration. The results further showed that the technical basic skills acquired by those personnel and the networks they built in their early career serve as the basis of OJT in later years. The survey also suggested that information sharing among organizations through internal and external networks builds trust and reinforces the relationships. In contrast, it was not possible to confirm whether the Off-JT of technical basic skills works as the basis of OJT. Presumably, this was influenced by some characteristics of the case, such as the fact that Yabu is a small municipality with a limited range of opportunities such as professional training.

Considering the number of staff in Yabu City, there may be situations that cannot be handled by the staff of the Countryside Revitalization Division of the National Strategic Special Zone alone. Therefore, the members and business entities that understand the local facts and characteristics are encouraged to collaborate. Additionally, depending on the status of development of each company, from the National Strategic Special Zone designation to the present, the agency chooses some members among its staff to be in charge of providing local support. When choosing these members, the relevance between their work at the agency and the business to be helped is considered. Moreover, because team members change yearly, the number of staff involved in the management of the promotion of cross-sectoral inter-organizational collaboration increases, and experiences related to cross-sectoral inter-organizational collaboration are shared within the agency. Presumably, this change of members is also designed to develop the staff's skills.

3.2. Niigata

In Niigata, we interviewed Mr. C and Mr. D⁷⁾. Mr. C worked in agriculture-related departments, organized seminars about the Agricultural Land Law, after which he became the section chief of the promotion of agriculture-related matters. He oversaw the preparation of the regulatory reform plan, as part of the preparation to apply for special

zone status, and was later promoted to the section chief of the New Food Valley Special Zone. He acquired basic knowledge of his duties through OJT and Off-JT (seminars) and, using networks inside and outside the organization, He further coordinated the initial stage of National Strategic Special Zones through his relationship with the top management of the organization. He also took actions to smoothly promote cross-sectoral inter-organizational collaboration, such as replying to the companies within three days.

Mr. D has a master's in agriculture with experience as an agricultural engineer and is an assistant director at the Agricultural Development Research Center. In a selection process of farms that produce pearl barley, he was responsible for collecting transaction price information from companies and conveying it to the farmers, which prompted his interest in manufacturing. Additionally, when providing support for cross-sectoral inter-organizational collaboration, he had the sales of the final products (including distribution) in mind from the very beginning, and when selecting business partners for the initial process of agricultural products, he considered "Noufuku" (Agriculture + Welfare) collaboration. These actions yielded concrete results in terms of cross-sectoral inter-organizational collaboration.

We classified the results of Mr. C and Mr. D's interview survey based on skill type and identified the following:

Technical skills

- Mr. C :Having knowledge of Agricultural Land Laws
:Coordinating the logistics of companies based on his knowledge of the shipping time of agricultural products
:Understanding local needs (farm restaurants)
:Having knowledge of accounting (e.g., knowing the difference between settlement with agricultural cooperatives and negotiation with companies)
:Having no marketing knowledge
- Mr. D :Having special knowledge of the agriculture (master's degree)
:Focusing on and collecting the sales

price of products and information

Human skills

- Mr. C :Involving his superior (mayor) and other organizations (Yabu)
:Coordinating with agriculture committees
- Mr. D :Taking action to motivate partner businesses (e.g., providing sales price information to business partner candidates)

Conceptual skills

- Mr. C :Seeking to establish a smooth partnership with the companies by replying to them with a "Possible/Not possible" message within three days
:Matching issues in Niigata with business issues of newly joined partners
- Mr. D :Identifying the final end of distribution routes (customers) and providing support
:Matching organizations considering differences in scale (directly linked to production volume and sales) between them

From Niigata's case, it was possible to verify that both the acquisition of knowledge and skills and the career management of human resources that facilitate cross-sectoral inter-organizational collaboration are done through OJT. It was also shown that the technical basic skills they acquired and the networks they built in their early careers become the base of OJT in the future. Regarding whether the Off-JT of technical basic skills becomes the base of OJT, the fact that the person in charge organized seminars on technical knowledge and continued to exhibit leadership skills indicated a certain relevance between the two.

The department in Niigata seems to be relatively conscious of the skills required to support cross-sectoral inter-organizational collaboration. However, it does not have any program or initiative to select or develop human resources based on that knowledge. Moreover, nobody mentioned any special Off-JT for new personnel who were transferred from another department. Therefore,

the analysis showed that the career management of human resources that facilitate cross-sectoral inter-organizational collaboration is done mainly through the conventional OJT; that is, through work experience in the field.

3.3. Bavaria

We conducted an interview survey with Mr. E, who works as a Managing Director (“MD” below) at Cluster Ernährung in Bavaria⁸⁾. After getting a degree through research on food socialization, Mr. E was appointed as a project manager (“PM” below) of Cluster Ernährung in 2012. Mr. E has been an MD since 2014 to date, supervising a group of PMs. He states that he was appointed as a PM in 2012 and was scheduled to become an MD soon after. This shows that since its beginning, the organization was anticipating the previous MD’s return to the Ministry of Agriculture and had nominated Mr. E as the next MD.

Mr. E has a Ph. D. degree in research on food socialization and some expertise in the food field. Currently, in Cluster Ernährung, there are about three or five staff members (PM) working under Mr. E, who is also responsible for recruiting these members. When we asked Mr. E about the recruitment method, he said that it is similar to the method used by general companies; that is, Cluster Ernährung discloses job information to the public and recruits suitable personnel from the external labor market.

We classified the results of Mr. E’s interview survey based on skill type and identified the following:

Technical skills

- Mr. E :Having special knowledge of the agricultural food industry (Ph.D. degree)
:Having marketing knowledge
:Having project management knowledge

Human skills

- Mr. E :Putting emphasis on face-to-face communication with related businesses entities and when recruiting PMs
:Listening to the other person carefully and looking for possible problems

- :Approaching the members as a service provider
- :Respecting the expertise of local producers
- :Supporting the PMs’ autonomy

Conceptual skills

- Mr. E :Examining the prospects of the market, providing the members with the information he collected and trying to moderate the communication between business entities as much as possible
:Creating strategic planning yearly
:Looking for opportunities to create new businesses based on changes in the market
:Building networks gradually, creating a place for collaboration between organizations

Bavaria’s case showed that, when recruiting staff to oversee projects, Mr. E focuses on whether the candidate can communicate with various types of people. Hence, human skills are the first skills that human resources responsible for facilitating cross-sectoral inter-organizational collaboration must possess. Additionally, the Leadership Academy of the Bavarian Ministry of Agriculture offers multiple courses designed to develop skills to facilitate collaboration, which shows that a clearly defined Off-JT system is in place. The newly recruited PMs can choose and take the subjects they consider necessary. As a superior, the MD’s role is to advise the PMs on which courses are more appropriate to develop the necessary skills. However, the decision of which course to take is made by the PMs. From these, we learned that Bavaria has a system that offers training for the personnel to learn skills required to facilitate collaboration, that the PMs decide which skills they want to acquire, and that the MD is always aware of the status of the PMs’ Off-JT.

Through corporate training on specialized skills and support from the mentor (the MD) to choose the technical basic skills to learn, the organization seeks to establish a link between Off-JT and OJT. Moreover, PMs are expected to have soft skills to build connections with people in various positions,

Therefore, it is assumed that they can easily build relationships in the field. These findings suggest that the emphasis on soft skills (such as communication skills), which are prerequisites for PMs to be hired, and Off-JT after they are hired, work as the foundation, and that OJT, which actively builds networks, is conducted as part of the daily work routine. These two are integrated to develop the skills required to facilitate cross-sectoral inter-organizational collaboration and consequently promote Bavarian agriculture.

The problem-solving skills demonstrated by Mr. E are not intended to offer expertise to all members at once as if it was public information to be shared. Rather, they are designed to gradually build a network of organizations. First, he collects information on common issues that may concern the entities and, based on their level of curiosity or interest, changes the scale of the place from small, medium, and big and continuously connects stakeholders to build a network of business operators. It was also indicated that, along with the skill of gradually building networks, Mr. E displays skills of seeking business development prospects and collecting and sharing valuable marketing and strategic information.

The career management of human resources in Bavaria may be influenced by PDCA initiatives conducted in the state's clusters. Every four years, the final year of each stage of the state government's support, both the PM and MD are evaluated by an external institution from the perspective of results, management, and strategy. To this end, the cluster's members are asked to complete a satisfaction survey on the three aforementioned indicators. Therefore, both the staff in charge of the projects and the MD can have an objective look at their own skill development, which may be linked to the continuous development of skills for facilitating cross-field collaboration, owing to this system that gives the PMs and MD feedback based on external assessment derived from a highly transparent survey.

4. CASE COMPARISON AND ANALYSIS RESULTS OF THE CONCEPTUAL MODEL

4.1. Comparison of the analysis results of the skills of the three cases in Japan and Germany

Table 1 shows that in all the three cases, the personnel demonstrated multiple abilities emerging from all three skills shown in the conceptual model Figure 1. While there was no clear evidence of any technical skill common to all the three cases, the survey results indicated the existence of expertise in the agricultural industry and agriculture, as well as management knowledge required for cross-sectoral inter-organizational collaboration. Regarding human skills, the survey shows that OJT, which was strongly emphasized in the case comparison in Japan, is considered important in Bavaria as well.

However, in addition to that, Bavaria offers Off-JT opportunities as a system. This is a sign that Bavaria seeks to develop human resources through cooperation between OJT and Off-JT, a characteristic that was revealed by the international comparative study. Additionally, in Bavaria, the members participating in cross-sectoral inter-organizational collaboration are surveyed by an external institution that evaluates them and gives them the results. The existence of this evaluation system was also revealed through the comparison of international cases.

4.2. Analysis results of the two cases in Japan

The analysis of the cases in Japan showed that OJT is the main method of human resource development. The individuals build their careers through work experience and facilitate cross-sectoral inter-organizational collaboration applying the (human and technical) skills acquired from that experience. However, the analysis also showed that very few aspects related to Off-JT, presented in the previous conceptual model, are employed in the cases, and that there is no clear cooperation between Off-JT and OJT.

Moreover, based on the approach from businesses focused on National Strategic Special Zones, the human resources that facilitate cross-sectoral inter-organizational collaboration build certain

Table 1: Comparison of the analysis results of the skills of the three cases in Japan and Germany

	Yabu	Niigata	Bavaria
Technical skills	<ul style="list-style-type: none"> • Developing a network of external specialists (e.g., university professors) and drawing upon their expertise • Perceiving local issues as his own (based on experience as part-time farmer) 	<ul style="list-style-type: none"> • Having special knowledge of the agriculture (master's degree) • Understanding local needs (in the case of farm restaurants) • Having knowledge of the Agricultural Land Law • Having knowledge of accounting (e.g., understanding the difference between payment to agricultural cooperatives and negotiations with companies) • Watching the sales price of products and collecting relevant information • Coordinating the companies' logistics with the shipping time of agricultural products 	<ul style="list-style-type: none"> • Having special knowledge of the agricultural food industry (Ph.D. degree) • Having marketing knowledge • Having knowledge of project management
Human skills	<ul style="list-style-type: none"> • Sharing information smoothly with the mayor based on a relationship of mutual trust • Using the agency's internal network to find suitable personnel to coordinate with companies • Using creative ways to ensure that companies understand the local facts 	<ul style="list-style-type: none"> • Involving his boss (mayor) and other organizations (in Yabu) • Coordinating with agriculture committee • Actioning that motivate partner businesses (e.g., providing sales price information to partnership candidates) 	<ul style="list-style-type: none"> • Emphasizing on face-to-face communication with related business entities and when recruiting PMs • Listening to the other person carefully and looking out for possible problems • Approaching the members as a service provider • Respecting the expertise of local producers • Supporting the PMs' autonomy
Conceptual skills	<ul style="list-style-type: none"> • Recognizing issues in cross-sectoral cooperation (based on advice from external specialists) • Understanding the facts of each district and coordinating them • Giving young personnel hands-on opportunities to facilitate cross-sectoral cooperation and seeking to maintain ongoing businesses and maintain/build relations with companies 	<ul style="list-style-type: none"> • Matching issues in Niigata with business issues of newly joined partners • Identifying the final end of distribution routes (customers) clearly and providing support • Matching organizations considering differences in scale (directly linked to production volume and sales) between them • Giving "Possible/Not possible" reply within three days to ensure smooth cooperation with companies 	<ul style="list-style-type: none"> • Examining the prospects of the market, providing the members with information he collected, and trying to moderate the communication between business entities as much as possible • Creating strategic planning yearly • Looking for opportunities to create new businesses based on changes in the market • Building networks gradually, creating an opportunity for collaboration between organizations

Source: Created by the authors

relationships with related businesses. However, because these relationships are networks built only for matching between entities, they do not have continuous and dense information exchange. Consequently, initiatives such as creating a new market for the food and agriculture industry or gradually building a network to manage longer-term issues were not employed.

The analysis of the cases in Japan shows that the

development cycle involving Off-JT is individual. For this reason, it is not possible to conclude that Off-JT is part of an organization-wide development system in Japan. It was also revealed that the personnel and the related business entities exchange very little information concerning mutual expectations and trust, which are basic elements to maintaining and growing networks.

Japan has issues related to skills and human

resource development. One of them is the absence of training for human resources that facilitate cross-sectoral inter-organizational collaboration to develop conceptual skills, which would include designing a framework to create and expand businesses, for example.

4.3. Analysis of the conceptual model

Figure 2 shows that adds the items “Evaluation” and “External Labor Market” revealed from the results of the comparative study of all three cases in Japan and Germany. This is the corrected version of the conceptual model of the skills and career management of human resources that facilitate cross-sectoral inter-organizational collaboration, presented in Section 2.

It shows that the career management of human resources that facilitate cross-sectoral inter-organizational collaboration is based on the cooperation between OJT and Off-JT. Additionally, when human resources who emphasize human skills are assigned, the communication between related businesses and members improves. Furthermore, there is a clear flow for information such as evaluation of personnel and work-related results to reach related entities. Moreover, the case analysis results necessitated the two major corrections to be made on the conceptual model presented in Section 2.

The first is that related businesses entities and the cluster personnel exchange not only information concerning mutual expectations and trust, but also periodic performance information based on the survey results of external evaluation institutions. The related businesses entities are the main players of the cross-sectoral inter-organizational collaboration. Therefore, this assessment of whether the results live up to the expectations of the members presumably plays an important role in the development of the human resources that facilitate cross-sectoral inter-organizational collaboration.

Additionally, the fact that an external institution conducts satisfaction surveys to assess whether the project was executed according to the strategy planned, then periodically sends those evaluation results back to the cluster, means that there is a system that allows the main players of the collaboration to participate in human resource development. Presumably, this helps the

human resources to develop continuously as new businesses are implemented. For this reason, the flow of evaluation information was applied to the corrected version of the conceptual model.

The second correction to be made concerns the relationship with the external labor market. In both cases in Japan, the local government staff employed in the general position was just rotated to the support job to facilitate inter-organizational collaboration by the organization's assignment order. Meanwhile, in Bavaria, a PM is assigned to a project upon conception, and the human resources to be assigned to the role of facilitating cross-sectoral inter-organizational collaboration are employed as a professional with expertise (in agriculture, project management, etc.) from the external labor market. While local government staff may be more familiar with the local facts, human resources recruited from the external labor market are considered more qualified to work closely with the members and actively solve issues, using their project management expertise. Considering these advantages, the assignment of human resources recruited from the external labor market was also applied to the corrected version of the conceptual model.

5. CONCLUSION

This study focuses on the agricultural food industry and investigates how to promote competitiveness in the industry by upgrading its industrial structure. To explore this topic, we researched the skills and the career management of human resources whose role is to facilitate cross-sectoral inter-organizational collaboration and consequently create high value-added businesses. To this end, we presented a conceptual model created based on a review of previous studies and compared three cases in Japan and Germany.

Based on the results of this comparative analysis, we were able to answer Question 1, which investigated the skills (technical, human, and conceptual skills) of human resources whose role is to facilitate cross-sectoral inter-organizational collaboration. In all the three cases, we identified multiple acquisitions related to these three skills. In Bavaria's case, the conceptual skills were more diverse and manifested as if drawing a bigger

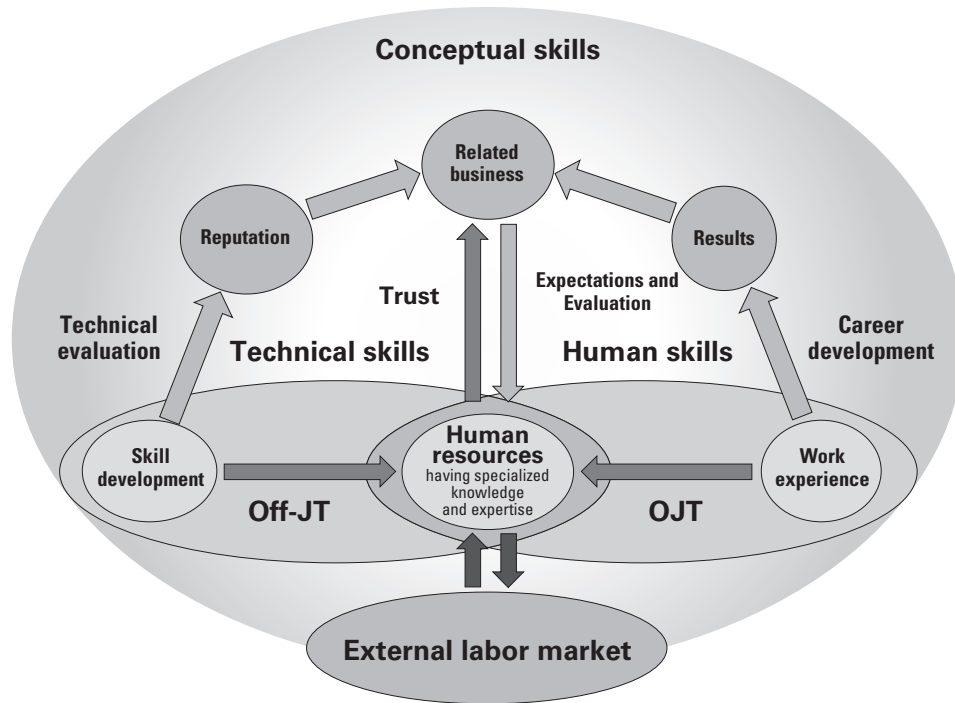


Figure 2: A corrected version of the conceptual model with the analysis results of Bavaria applied

Source: Created by the authors

picture.

Question 2 investigated how these skills are learned and trained through career development and Off-JT/OJT. In the two cases in Japan, it became clear that career development through OJT and work experience are significantly emphasized. In contrast, Bavaria's case showed the existence of a structure that allows the personnel to learn technical and human skills through Off-JT while the boss provides support. The analysis indicated a strong emphasis on face-to-face communication in the field and suggested that human resources development based on a close connection between OJT and Off-JT makes it easier to acquire new skills.

Question 3 investigated how the networks of related businesses affect human resource development. In the domestic cases, we noticed that the human resources who facilitate cross-sectoral inter-organizational collaboration take actions based on their understanding of the characteristics of the organizations on the company's side. We also noticed that, when forming networks, the local government staff involve the bosses in the organization, to facilitate the collaboration. However, we did

not hear anything about their active involvement in the networks of companies and universities.

In the cases in Japan, networks with related businesses seem to have a limited effect on human resource development. In Bavaria's case, however, it is important to get close to business partners and establish communication properly (listen to them well), to identify their needs. This suggests that networks with related businesses are essential for the career management of human resources that facilitate cross-sectoral inter-organizational collaboration. This is also evidenced by the fact that there is a system that allows the PMs to be evaluated from the related businesses entities, which shows that the relationship with the main players of the collaboration is the base of human resources development in Bavaria.

This study aimed to find answers to the questions formulated based on the research theme above and construct a theory. To this end, we presented a modified conceptual model, which was corrected based on a comparison between cases the agricultural food industry in Japan and Germany. Limitations of this study are the small number of

cases, even for an international comparison, and the difficulty of directly applying the research results to other industries. Our future goal, in terms of academic achievements, is to construct an even more credible theory, which can be achieved through a deeper examination of the validity of the conceptual model we constructed. To do so, it will be necessary to examine other similar cases in Japan and abroad, and compare multiple cases. Additionally, in connection with the challenge of promoting competitive and new local industries in the food and agricultural field in Japan (which has high growth potential) through cross-sectoral inter-organizational collaboration, we believe it is possible to make valuable recommendations based on human resource aspects. Furthermore, we would also like to further our research by examining examples of the revitalization of other local industries in Japan and abroad, such as the tourism and healthcare industries, which, like the agricultural and food industry, have a notable lack of human resources to promote inter-organizational collaboration.

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NOTES

1) National Strategic Special Zones and the National Strategic Special Zone system were created to execute bold regulations and institutional reforms required to implement growth strategies and create “the most business-friendly

environment in the world.” Despite several socio-economic changes in Japan, there were “bedrock regulations” that had not been reformed for many years. These regulations would often get in the way of local governments and business entities that tried to carry out creative initiatives. Therefore, the National Strategic Special Zones were designed to develop special regulatory measures and reform related systems, both comprehensively and intensively. See this link for details: <https://www.chisou.go.jp/tiiki/kokusentoc/english/index.html>

- 2) Sixth industrialization is a strategy that aims to enhance the added value of agricultural, forestry, and fishery products and revitalize local communities by building a value chain through the collaboration of primary, secondary, and tertiary industries. In implementing sixth industrialization, such as the need for strong government support, coordination among different stakeholders, and investment in infrastructure and technology.
- 3) For details of the cluster policies of Germany and Bavaria, see Kawabata (2019).
- 4) “Ernährung” means “nutrition” in German.
- 5) There is an English version of Nishio (2007): Nishio (2010).
- 6) Mr. A and Mr. B were rotated the job of supporting the promotion of cross-organizational inter-organizational collaboration by the order from their organization. Three interviews in Yabu were conducted on July 16, 30, and September 24, 2020, for a total duration of approximately 250 minutes. For detailed results of the Yabu survey, see Kawabata/Nishio (2021a).
- 7) Mr. C and Mr. D were rotated the job of supporting the promotion of cross-organizational inter-organizational collaboration by the order from their organization. The Niigata interview survey was conducted three times on August 7, November 4, and December 10, 2020, for a total duration of approximately 300 minutes. For detailed survey results of Niigata’s case, see Kawabata/Nishio (2021b).
- 8) Interview survey was conducted on August 22, 2021, for a total duration of approximately 120 minutes. For detailed results of the Bavaria survey, see Kawabata/Nishio (2022).

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