INNOVATION IN RURAL JAPAN: ENTREPRENEURS AND RESIDENTS MEETING THE CHALLENGES OF AGING AND SHRINKING AGRICULTURAL COMMUNITIES

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ABSTRACT
This paper examines the function and features of entrepreneurial leadership in aging rural communities in Japan, referring to the Schumpeterian concept of entrepreneurship. In the demographically oldest society, Japan, agricultural communities in rural hilly and mountainous regions suffer most from demographic change. This usually leads to decline in the regional economy. Such communities have to redefine local business in order to survive. Schumpeter (2006) claims the importance of the function of entrepreneurs: they create innovation through new combinations of given resources with a strong leadership. In aging communities, elderly residents as a large population group there should and could be combined in a new business; however, in most communities they are not integrated into enterprises. The cases examined here suggest that the entrepreneurs who contribute to the economic reconstruction of the communities have, beside typical entrepreneurial features, strong empathy for the community, as well as for the residents there.

Keywords: Entrepreneurship, Innovation, Demographic Change, Regional Economy, Rural Areas, Case Studies

JEL Codes: J14, L26, O22, P25
Demographic change raises diverse social challenges. In Japan, rural hilly small communities in which aging has progressed furthest are facing risks to the maintenance of municipal functions, and thus to their sustainable existence. This paper looks at challenges for local economies arising from aging populations.

Rural hilly small communities have had problems with weak economies since World War II. Aging is an additional factor contributing to the structural problems of local economies. In aging communities the number of younger residents, which overlaps to a large extent with the labor force aged between 15 and 65, declines substantively in absolute and relative terms.

Seeking a solution to ensure an adequate workforce is therefore a serious concern for aging communities. Rational solutions for regional management of demographic change, such as the “compact city” strategy,\(^1\) can be put forward, but they may be problematic. The monetary advantages gained through the concentration of municipal functions, such as the maintenance of municipality infrastructure, are traded off against a decline in the physical and mental condition of elderly people who change their place of residence, despite wishing to remain in their hometown. Options for solutions with other orientations, taking into account neglected preferences and emotions, are also needed. Reconsidering elderly residents and rebuilding business in the local economy with them is one option.

This paper examines cases in Japan, because demographic change has progressed furthest there and resulting challenges can be clearly observed. The focus is on the function of entrepreneurs, as conceived by Schumpeter (2006, 2010), in providing leadership in a development process in rural communities; in particular, the paper focuses on the following questions: who acts as a leader for this and how does he or she act; how can mobilization of elderly residents into the workforce succeed in the context of rural aging and shrinking communities; how can such communities successfully create new local business with mobilized elderly human capital; do older people have any disadvantages compared to younger ones when they are encouraged to behave entrepreneurially? Economies with large elderly cohorts will increasingly start to become apparent in urban districts in the future. Therefore,

\(^1\) The term “compact city” approach was first coined in 1973 by George Dantzig and Thomas L. Saaty. It aims at the more efficient use of resources. In relation to demographic change, it is often associated with reconstruction of a city with an efficient transportation system and concentration of municipal services to reduce local government costs (Matsumoto, 2011). It does not require residents to move from the suburbs into the city center, but it is implied that such movement would follow as a consequence.
discussions about cases in rural hilly communities will have general implications for societies undergoing demographic change.

In the next section the problems of rural hilly communities are illustrated, and then a concept for a solution applicable to small aging communities in rural hilly areas is put forward based on Schumpeter’s (2006) “New Combination”, and economic development through linkages as conceived by Hirschman (1958). There are cases which have succeeded in remodeling agricultural business, although only a few integrate local elderly people and have positive effects beyond the company for the townspeople and the town. “Entrepreneurs”, the leaders as conceived by Schumpeter, will be concerned to build the image of a leader who motivates elderly residents to remodel the local agricultural economy. In the third section the selection of case study communities is explained and the case study method is described. In the fourth section, a case study of Kamikatsu, located in Tokushima Prefecture, will show how leadership succeeded in motivating elderly local farmers and is compared with Iitate in Fukushima Prefecture, where more moderate leadership is evident.

THE ROLE OF ENTREPRENEURSHIP IN SHRINKING AND AGING COMMUNITIES

Rural Communities in Japan: Challenges and a Concept for a Solution

The problems of small rural agricultural communities – that aging and population decline are connected with less profitable agriculture, and that economic policy in Japan gives priority to industrial areas – are well known. Developing the competitiveness of agriculture through innovation and entrepreneurship has not been prioritized to the extent seen in industry and commerce. Japanese economic policy after World War II concentrated on several industrial areas, such as the so-called four big industrial areas (Keihin, Chūkyō, Hanshin and Kitakyūshū). The economy in rural hilly areas lost links to industries in industrial cities. Consequently, the reduced attractiveness of agriculture accelerated the emigration of young residents (Small and Medium Enterprise Agency, 2014). They moved to big industrial areas and found jobs there. Aging, population decline, and weak agriculture influence each other negatively and at an accelerating rate.

Rural communities have increasingly been facing risks to their survival as independent municipalities. Chūsankan chiiki (hilly and mountainous districts) is the term used to refer to districts which suffer most from challenges
due to demographic change. This paper concentrates therefore on cases in *chūsankan chiiki*. The basic problems of districts with a high proportion of elderly people (65 years and over) will likely be the same for other districts too.

Under these conditions *chūsankan chiiki* cannot expect any substantive immigration of younger competitive people in the short term. This means that they need to create agricultural business in a new way with existing resources and human capital. This is a Schumpeterian “new combination” (Schumpeter, 2006) of local resources. For endogenous development in rural aging communities, elderly residents are necessarily major participants, because they constitute a high proportion of the population of the community. The census of agriculture and forestry (Ministry of Agriculture, Forestry and Fisheries, 2015) shows an obvious aging of Japanese farmers. Studies in gerontology as well as public health suggest improvements in the potential of elderly people as human capital (Pes et al., 2013; Beard, Bloom, 2015; Bloom et al., 2015). To treat them merely as receivers of social services means a great loss in human capital. Motivating elderly residents seems to be the essential point for a process of a new combination of resources in *chūsankan chiiki*.

For the endogenous re-establishment of rural communities following the Schumpeterian approach, in particular in hilly and mountainous *chūsankan chiiki*, three components are required: first, gaining markets outside the communities; second, creating backward and forward linkages with industries and the service sector and commercial sector (distribution), as discussed by Hirschman (1958); and third, the participation of elderly residents, often farmers, as human capital. Japanese agricultural economics traditionally has a discussion stream from the viewpoint of entrepreneurship and innovation (Tobata, 1978; Shogenji, 2008, 2014; Fujimoto, 2013; Nakamura, 2014, 2016). However, these three components, in particular, mobilizing elderly residents to become productive human capital, are not an integral part of these discussions. To achieve both the creation of a unique competitive agricultural business and the mobilization of elderly residents is an ambitious challenge. Elderly people are usually seen as less innovative, willing, and able.\(^2\)

To maintain the regional economy, the sales profits from the market of the community alone are an insufficient function of the small market volume of rural communities (Nakamura, 2014). As for the first component,

\(^2\) Researchers increasingly recognize competitiveness in people of higher ages (see e.g., Jones, Weinberg, 2011; Rohwedder, Willis, 2010; Röpke, 2015, 2017); however, in agricultural daily life elderly people are considered as retirees.
Nakamura (2014, 2016) stresses two points for sustainable vigorous economies in rural agricultural communities far from industrial areas: creating new business utilizing the key competencies of the community, and obtaining money from other regions through business. It is important that a business which brings gains from other regions stimulates other local businesses in the community and has a multiplier effect in the economic circulation of the community (Figure 1; see also Schumpeter, 2006).

Figure 1 – Circulation of goods, services, and money for a sustainable regional economy in rural areas, based on Nakamura (2016)

Agriculture alone does not normally make much profit, and not enough to maintain the community economically. However, agriculture remains important because of emotional and social embedding (Wellbrock, Roep, 2015), so rural communities in Japan need to develop agricultural enterprises, adding value which enables the market to expand beyond the community, and which appeals to people in cities (Fujimoto, 2013; Shogenji, 2008).

Regional economies based on agriculture need to foster cooperation with other industries to increase the value of agriculture (Nakamura, 2014, 2016). Hirschman wrote in 1958 about the lower value of agriculture compared to
other industries, e.g., manufacturing and services. The Petty-Clark theorem also claims that agriculture has low profits in comparison to manufacturing, trade, and service industries. Hirschman’s concept is that an economy can increase its economic value by developing linkages to economies with higher economic value. Forward linkages, according to Hirschman, mean that a primitive and earlier industry introduces new technologies (innovation) from a newer industry, e.g., introducing computer technologies for the quality management of crops, which is a way for agriculture to gain competitiveness and to become more profitable (for further investigation of linkages of rural regions in Japan to industrial areas, see Nakamura, 2014). Hirschman (1958) recognized the difficulties of agricultural products in achieving linkages to industries. Processed foods are a conventional way to add value to fruit and vegetables. However, conventional options such as pickles are not sufficient for the concept based on Nakamura and Hirschman; the demand for such products is not high enough.

An important question for rural agricultural communities is what hilly small agricultural communities can provide in a linkage with cities; this needs to be practicable with elderly residents.

Neither knowledge nor costs seem to be the key barriers. As suggested by Christensen (2000) with disruptive innovation and Kim andMauborgne (2005) with Blue Ocean Strategy (value innovation), for example, it is not necessary to introduce high technology or the latest academic knowledge to agricultural products, but new agricultural business or products need to provide values which appeal to consumers, in particular in urban areas, to help the rural community to become competitive and survive. Projects do not need huge investment. One example is an experiment to create biogas from persimmons that started in December 2011 in Ryozen, a part of Date, a City in Fukushima Prefecture, by starting with available resources, which is compatible with the approach suggested by Sarasvathy (2001) and also with the “frugal innovation” approach as described by Radjou and Prabhu (2012). The laboratory for the biogas experiments in Ryozen was constructed by one elderly resident as project initiator by using handmade parts, cheap products for daily use, and recycling used goods e.g., PET bottles. It cost a mere 300,000 yen (approximately 2740 dollars) (Ryozen Project/Renewable Energy Promotion Association, 2015). This case suggests that creation of a new agricultural business is in principle possible for elderly people. However, they are often not considered in this way.

Several farmers, e.g., Matsumoto Farm in Mashiki City and Salad Bowl in Chūō City (see Appendix 2), have succeeded in meeting the needs and interests of urban people well. They are very conscious of the needs of consumers who want to know what they are eating, for example, where
vegetables come from and how they are produced. The firms have signaled their consciousness of the importance of produce traceability and quality management (for details see Fujimoto, 2012 and Shogenji, 2008). For example, Matsumoto Farm has obtained Global Good Agricultural Practice certification, an international standard for quality management of farming. They introduce technologies, often information and communications technology (ICT), to fulfill the needs of urban consumers better. Using ICT and computer applications to assist or to improve the ordering systems or for better management of the harvest is a typical approach. Matsumoto Farm, Salad Bowl, and Kamihayashi Country Farm are willing to hire employees but prefer young people, even though they have no experience in agriculture and are often from other areas. They do not obviously discriminate against elderly people but seem to have the idea that younger people have more potential.

Some researchers, such as Röpke (2015, 2017), respect the potential of elderly people as human capital. Moderate work may help to maintain their physical condition, too (Pes et al., 2013). The potential of elderly people should be better recognized, and they often seem to need encouragement to participate in both enterprises and social activities.

**Entrepreneurship for the Realization of a New Combination of Local Human Capital and Remodeling of Agricultural Business**

Entrepreneurship is the motor for the development of new combinations (innovation), according to Schumpeter, who first described the behavior pattern of entrepreneurs (Schumpeter, 2006, 2010; Baumol, 2010).

According to Schumpeter, an entrepreneur has a strong personality. On the other hand, anyone can be an entrepreneur, because it is a function independent of his or her position in the workplace or social hierarchies. According to Röpke (2002), entrepreneurs with strong entrepreneurial energy (Schumpeter, 2006) create innovation. The individual value system forms the vision (Rassidakis, 2001). As Schumpeter wrote: “As the implementation of new combinations is the core of development, so the doing is the driving force. If all economic agents were equally farsighted and energetic, so would our picture of the economy, of course, be different. But it is not so.” (Schumpeter, 2006, translated by author from German, p. 162), and “The entrepreneur uses his personality and nothing but his personality” (Schumpeter, 2006, translated by author from German, p. 529).

Researchers after him such as Collins and Marten (2011) and Sarasvathy (2008) claim no heroic behavioral features of entrepreneurs. These
entrepreneurs accumulate small successes step by step. Leadership, alertness, and gradual accumulation complement each other. In particular, in small rural agricultural communities, respect and good co-working with residents are suggested as important determinants of success (Wellbrock, Roep, 2015).

Focusing on determinants of entrepreneurism, the Big Five approach considers dynamics of personal features (see e.g., Zhao, Seibert, 2006; Brandstätter, 2011). For the issues discussed in this paper it seems to be meaningful to look carefully at how a person is endowed with or acquires entrepreneurial characteristics, because this kind of entrepreneurial leadership is rare. It seems possible to deduce that the behavior (“the personality”, as termed by Schumpeter) of the entrepreneur is based on “can” (competency), “will” (motivation), and “may” (property rights) as suggested by Röpke (2002) and is influenced by experiences in the course of time. The business orientation, social responsibilities, alertness, and blind spots are determined gradually in this continuing shaping process of “can”, “will”, and “may”. They influence the strength of entrepreneurial actions, and for what purpose, by what means, and with what resources the enterprise is formed (Figure 2). Taking into account insights into social entrepreneurship (Zadek, Thake, 1997; Urbano, Toledano, Soriano, 2010), preference for social value over personal wealth seems to be a prerequisite feature of entrepreneurs for remodeling a local economy using elderly residents.

Figure 2 – Relationship between behavior pattern and mindset of an entrepreneur based on Röpke (2002)
Innovation in rural Japan: entrepreneurs and residents meeting the challenges of aging and shrinking agricultural communities

Research into social entrepreneurship (Kraus et al., 2014; Dacin, Dacin, Tracy, 2011; Martin, Osberg, 2007; Aguinis, Glavas, 2012) suggests that one stakeholder (social entrepreneur) exhibits leadership for a creative solution for social issues. However, in Japanese agriculture such leadership seems to have been split across several stakeholders after World War II; to some extent this is a result of redistribution of land ownership to the peasantry.

Tobata (1978) applied Schumpeter’s contrast between “Unternehmer” (entrepreneur) and “Wirt” (manager for routine business) to analyzing Japanese agriculture after World War II; he criticized Japanese farmers after the emancipation of the peasantry in 1947 as “Wirte” (people who remain in routine business and do not dare to take on new challenges) rather than “Unternehmer”. One reason is that farms in Japan are usually small-sized, a consequence of post-war policy for the emancipation of the peasantry (Shogenji, 2013). Overprotection parallel to the emancipation policy soon after World War II (Oizumi, 2009) weakened their entrepreneurial competency. The tradition of innovative experiments by big farmers for the whole village was also diminished (Oizumi, 2009). Consequently, farmers act individually, including when starting up an enterprise. There are two types of entrepreneurs: ambitious farmers in young and middle age, e.g., Matsumoto Farm in Mashiki (Fujimoto, 2012), Salad Bowl in Chūō (Fujimoto, 2012), and Kamihayashi Country Farm in Murakami; and elderly female farmers (e.g., Irodori in Kamikatsu); Iitate, the second case study of this paper, has both types. Both types of entrepreneur seem to follow their individual business interests rather than considering contributions to their communities.

Consequently, to establish an enterprise which has effects for the whole town, the interests of diverse stakeholders need to come together in the enterprise (D in Figure 3). Local entrepreneurs and start-ups, the municipality, and the Japan Agricultural Cooperatives (JA) each have parts of the required consciousness and responsibilities for a positive consideration of elderly residents as human capital, motivation for the creation of job opportunities in the community, and the creation of endogenous sustainable enterprises in the community. Figure 3 illustrates their features.

The features shown as D in Figure 3 are seldom realized in an agricultural rural enterprise. In Japanese rural agricultural communities entrepreneurs seem to lack a holistic perspective in establishing their businesses. From a Schumpeterian viewpoint the lack of entrepreneurship is the main reason why the features of the municipality, JA, and local entrepreneurs are not integrated to create an innovative solution.

JAs promote the development of agriculture; in particular, agricultural technical advisers, and extension officers are expected to fulfill this function.
Extension officers were introduced in 1948 following the establishment of American agricultural extension officers. There are circa 7500 extension officers throughout Japan (Ministry of Agriculture, Forestry and Fisheries, n.d.); however, they have not replaced the leader function of big farmers as “Unternehmer”. The staff of JAs normally treats farmers as central players and they assume the role of advisers. They concentrate on the transfer of new knowledge in agriculture. JAs are expected to act as entrepreneurial leaders (Oizumi, 2009, 2014; Shogenji, 2013), but they have concentrated on promoting protection measures for small-sized farms instead of innovative, entrepreneurial interventions. They make more effort in derivative businesses such as the credit business (Oizumi, 2014).

Figure 3 – Entrepreneurial features for endogenous, creative restructuring of a local economy in rural aging communities

Building networks for the development of the local economy is an innovation process (Aßmann, 2003) and is not easy for everyone, because entrepreneurial features are required. A kind of pride in themselves makes cooperation with other farmers difficult, if there is no strong entrepreneurial leadership. Like other collectives, collectives of farmers work well in cases in which the profit and risk of the collective are obvious, e.g., when buying expensive machines such as tractors. However, farmers seem not to be
interested in building collectives for endeavors with high uncertainty, such as a new enterprise. The cautious behavior of Japanese farmers is also influenced by the Agricultural Land Act (Jap.: Nōchi hō, 1952), which restricted the usage of farmland and thus accelerated the decrease in entrepreneurship (Oizumi, 2009).

Sustainable development of the community is a concern of municipalities. They may be able to work in an entrepreneurial way (Vanebo, Murdock, 2012). However, the municipality does not concentrate only on the local economy; moreover, it does not promote only a few enterprises. It provides the residents with a start-up-friendly environment but it does not normally participate beyond that in an entrepreneurial way.

Lack of entrepreneurship has the consequence that the residents (farmers), JA, and the municipality do not develop a vision beyond the status quo.

**Japanese Policy Interventions: The “Sixth Industry” and the Community-Reactivating Cooperator Squad**

Governmental priorities and interventions make no concrete suggestions on mobilizing elderly farmers.

The Japanese government has promoted “the sixth industry” approach since 2010 with the promulgation of the Act for Sixth Industry and Local Production for Local Consumption (Japanese: Rokujikasangyō chisanchishō hō, Ministry of Agriculture, Forestry and Fisheries, n.d.; Yoshida, 2010). According to Araki (2012), “The notion of a ‘sixth industry’ is reached by multiplying industrial sectors – primary x secondary x tertiary (i.e., \(1 \times 2 \times 3 = 6\)).” The concept has been recommended by Naraomi Imamura since the mid-1990s (Yoshida, 2010). It was expected that rural regions would create new added value synergistically through the effective use of agricultural, forestry, and fishery products, as well as land, water, and other assets in farming, mountain, and fishing villages (primary sector), by integrating elements of industry, such as processing (secondary sector), and services (tertiary sector), such as restaurants.

The Japanese government has made attempts to promote opportunities to create an entrepreneurial mindset for the regeneration of rural agricultural regions facing threats to their continuing existence. One example is the Community-Reactivating Cooperator Squad (Jap.: chūkiokoshi kyōryokutai), governed by the Ministry of Internal Affairs and Communications since

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3. For this point I thank Sadao Kuwahara of the municipality of Kamiakatsu in an interview on January 31, 2014.
2009. It aims to improve the interaction between local residents and people from other areas to stimulate rural communities. Community-reactivating cooperators, who come from other districts, mostly urban districts, live in a rural community for at most three years and participate in issues relating to the revitalization of the community. This project can provide its participants with opportunities for a kind of entrepreneurial education, as suggested by Pelz (2014) and Sarasvathy (2008), in the context of regenerating rural communities. Although integration in the community is not always easy, 47% of the participants have stayed there after their contracts ended in March 2015, and 12% resided in a nearby community (Ministry of Internal Affairs and Communications, 2015).

People who have been embedded gradually by participating in issues in the community have tended to stay there after the Community-Reactivating Cooperator Squad project ended, often provided that they have received an offer from someone in the community to continue to work with them there. Embeddedness involves compassion and trust, as well as other elements of social capital, and understanding of the residents and community (Granovetter, 1985; Harrison, 1992; Wellbrock, Roep, 2015).

CASE STUDY SELECTION AND METHODOLOGY

In the following section we look at two cases from Japan to examine what kind of leadership is helpful for the realization of the concept of solutions for rural aging communities with elderly residents explained in the previous section. Conditions for the selection of cases in this paper are: A. small agricultural communities in hilly and mountainous districts far from big cities; B. participation of residents in the communities, in particular, with regard to efforts for the achievement of high productivity of residents at higher ages; and C. efforts for, or realization of, the remodeling of agricultural business which increase value in agriculture.

Kamikatsu was reviewed first, because it is well known as a successful example of revitalization of an aging rural hilly community. Other candidates for case studies in the following section were chosen by reviewing research papers on approaches to the revitalization of rural agricultural communities isolated from urban districts (e.g., Fujimoto, 2013; Oizumi, 2009, 2009).

4. I thank Tomoji Yokoishi for this comment (August 26, 2016).
5. I thank Tomoji Yokoishi for the information from his presentation on August 26, 2016 in Tokyo.
Innovation in rural Japan: entrepreneurs and residents meeting the challenges of aging and shrinking agricultural communities

2014; Shogenji, 2008) and from suggestions from interviewees in Kamikatsu and researchers who work on rural agricultural communities. Kamikatsu in Tokushima Prefecture and Iitate in Fukushima Prefecture were selected as case studies. The determining point is the integration of local human capital in the remodeling of local agriculture.

As Yin (2003) writes, a case study is good for analyzing how and why a specific event and process occurs. The case study of Kamikatsu was conducted by participant observation, interviews, and a review of media articles and previous research. The author tried to obtain an overview of the enterprise Irodori through participant observation (January 30 and 31, 2014; February 18, 2016) by watching, interviewing, and critically questioning the holistic ways of Irodori’s economic and social functioning and the multidimensional effects of Irodori on the participant farmers. Interviewees from different positions were selected in order to obtain opinions from different perspectives. Interviews with staff of the Irodori company and the Municipality of Kamikatsu were conducted (January 30 and 31, 2014; February 18, 2016), and an interview with Tomoji Yokoishi, the initiator of the Irodori project, was carried out on February 18, 2016. Narrative interviews were chosen to obtain integrated profiles of the changes in the town before and after the establishment of the Irodori enterprise, including subjective evaluations of the townspeople of Irodori, personal views on the well-being and quality of life in Kamikatsu after its startup, and the challenges Kamikatsu is still confronted with, given the continuing trend of population decline and aging. To obtain spontaneous expression, only rough outlines of the questions were given to the interviewees and they spoke freely following the outline.

The main approaches taken in the Iitate case study are a literature review and interviews. Because of the evacuation after the nuclear disaster in Fukushima on March 11, 2011, alternative approaches to participant observation were utilized. Interviews took place with a professor at Fukushima University who has cooperated with Iitate in the design for sustainable maintenance of the community prior to the Triple Disaster6 in 2011 and after that and with a few Iitate farmers7 (July 30, 2015 and February 13, 2016). Rural hilly and mountainous communities are involved in exchanges

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6. The great catastrophe on the March 11, 2011 hit Japan in three ways: a massive earthquake, a tsunami, and the resulting meltdown of a nuclear power plant in Fukushima. It therefore became known as the Triple Disaster. Fukushima Prefecture has suffered most and most directly from the nuclear meltdown aspect of the disaster.
7. At the time of the interviews in 2015 and 2016, farmers were living away from Iitate in temporary housing in the Fukushima City.
Kamikatsu is located in a typical chūsankan chiiki on Shikoku, Japan’s fourth main island, approximately 40 km from Tokushima City, the prefectural capital, 135 km from Osaka, 180 km from Kyoto, and 530 km from Tokyo. In spite of big improvements in transportation due to the building of highways and the introduction of and subsequent increases in the frequency of flights to and from Tokushima Airport, it is still relatively inconveniently located for access to these big cities and to important industrial districts such as the Hanshin area (around Osaka and Kobe).

The population of Kamikatsu fell from 4000 in 1970 to 1699 in 2016 (as of January 2016, Municipality of Kamikatsu, 2016a). The proportion of residents aged 65 years and older is 51.3% (Municipality of Kamikatsu, 2016a), the highest proportion in Tokushima Prefecture.

Kamikatsu is well known as a successful example of a creative solution to the challenges explored here, because of the establishment of a unique local enterprise, Irodori. Irodori created a market for decorative leaves (Jap.: tsumamono) to garnish traditional Japanese cuisine, and created the Irodori brand.

Mobilizing farmers

Because of the success of the Irodori enterprise, Kamikatsu is considered as an exemplary case of the mobilization of local farmers. Tomoji Yokoishi is the key person responsible for establishing and developing the enterprise. 197 farmers work for Irodori, approximately 10% of the population of Kamikatsu. Their average age is 70 and 90% are women (Kasamatsu, Sato, 2008). Through participation in Irodori, elderly female farmers have gained a social role and a feeling of independence (Haga, 2015). The top farmers with each other, for example at the level of municipality staff. Comments of staff from the Municipality of Kamikatsu and also of researchers were also considered as valid material for the case study of Iitate.
Innovation in rural Japan: entrepreneurs and residents meeting the challenges of aging and shrinking agricultural communities

there earn 10 million yen (around 10 000 dollars) per year (Yokoishi, 2007). The health effects of working for Irodori are interesting. Irodori farmers have relatively few diseases, but the causality – whether the lower rates of self-reported disease are the consequence of working for Irodori or good health is a condition for working for Irodori – is not clear (Inaba, 2013). Another interesting finding is that the subjective well-being of Irodori farmers is high (Yamaguchi, Kondo, and Shibata, 2012). According to Yamaguchi, Kondo, and Shibata (2012), working farmers in Kamikatsu who are engaged in other tasks show, unlike Irodori farmers, no stochastic correlation between their occupation and well-being.

Active participation of elderly female farmers in this enterprise is not a coincidence, but rather the outcome of various steps. First of all, the municipality recognized the negative effect of emigration of younger residents due to the declining value of agriculture. They realized there was a deficit in terms of the human capital in the town available to meet this challenge and decided to recruit somebody with the required competencies to initiate and oversee a creative solution for the town. The recruitment of Yokoishi in 1979 at the Agricultural Cooperative of Kamikatsu (now the Agricultural Cooperative of East Tokushima) was the result of a long search process within and beyond Kamikatsu.

Yokoishi started in 1979 as an agricultural technical adviser at the Agricultural Cooperative. He started his work at first in a conventional way. To increase the value of agricultural products in Kamikatsu he introduced vegetables, e.g., spinach and wakegi-scallion, that were new to Kamikatsu (Yokoishi, 2007). This helped significantly, in particular, after the total destruction of Kamikatsu’s main agricultural product, mandarins, in 1981 because of seriously inclement weather (Yokoishi, 2007). However, these were ordinary agricultural products and Kamikatsu was still not able to establish any unique agricultural value or brand. The effects of introducing new sorts of vegetables were therefore not substantive enough to stop the emigration of younger residents.

Yokoishi became an entrepreneurial leader by gaining the requisite characteristics of entrepreneurs. His entrepreneurship can be described as having three aspects according to Röpke (Röpke, Xia, 2007): “competency (can)”, “motivation (will)”, and “property rights (may)”. He gradually came to understand the problems of the farmers in Kamikatsu and developed empathy for them during his career there. He learned about their competencies and was able to anticipate the scale of various opportunities, in particular, by

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8. Earnings differ greatly among the farmers, who work with different intensities for Irodori, depending on their circumstances and interest.
imagining that elderly female farmers could gain opportunities to apply their experience and skills (Yokoishi, 2007). The productivity of female farmers was not being harnessed optimally; they worked merely as assistants to male farmers. On the other hand, Yokoishi recognized that the motivation of the local farmers was generally low (Yokoishi, 2007). They depended on Yokoishi totally and waited for new ideas from him, but they themselves did not act as “Unternehmer” as described by Schumpeter. This formed Yokoishi’s fundamental knowledge and influenced him to generate ideas and to develop them with a view to finding a creative solution for all farmers in Kamikatsu.

The Agricultural Cooperative (JA) functioned conveniently for him to talk to local farmers. He could organize the Irodori project at the Agricultural Cooperative and define and promulgate the aim of increasing agricultural value for the whole of Kamikatsu. Irodori was not just an individual project of one business person, but a project of the JA with an official character. Yokoishi has good relationships with farmers, the local JA, and the municipality. He succeeded in managing cooperation with them and achieved the orientation for Irodori as illustrated by D in Figure 3.

A remarkable feature of Yokoishi’s understanding is that local farmers, in particular, elderly female farmers, are without doubt the essential element of his plan for the improvement of agriculture in Kamikatsu. It was not his idea to establish an innovative agricultural business recruiting people with knowledge in new technologies as major business players (interview with Tomoji Yokoishi on February 18, 2016).

Yokoishi has been the key person responsible for combining different ideas to create new agricultural business. He visited other agricultural districts to learn about new varieties of vegetables and urban districts to organize sales of agricultural products from Kamikatsu. He obtained knowledge, information, and ideas for agriculture in Kamikatsu through talking with diverse people on his business trips (interview with Sadao Kuwahara on January 31, 2014). He made connections between various pieces of information gained through these exchanges, based on his own preferences and values, in particular, empathy for elderly female farmers. This seems to be an example of a combination process of ideas as suggested by Nooteboom (2006).

He was keen to establish the enterprise and was unusually committed, doing a lot of work at his own expense. His approach to farmers (supply side) was characterized by empathy and intensity (Yokoishi, 2007; Takahara, 2008).

The mobilization of elderly female farmers by Yokoishi suggests that this is a long-term process through which positive results are accumulated. In the run-up to the Irodori project it took time for Yokoishi to persuade a
few female farmers to be engaged in it, after repeatedly asking and talking to them. He started the project in 1986 with only four female farmers, who used to harvest leaves and branches for flower arrangements (Jap.: *ikebana*). In 1987 it became a project of the Agricultural Cooperative of Kamikatsu. Irodori mobilized local elderly farmers to participate in its enterprise without directly employing them. This management style seems to be appropriate for cooperation with farmers. As other farmers saw the successful development of Irodori (Figure 4) and its increasing sales, other female farmers gradually joined the enterprise; exchanges between female farmers who worked for Irodori and others served as word-of-mouth recommendation. As Irodori developed beyond the scope of the Agricultural Cooperative, in 1999 it became a semi-governmental company with the municipality represented on the management board and in its finances (Yokoishi, 2007).

*Figure 4 – Sales volume of Irodori leaves (tsumamono) from selected products*
disadvantages for elderly farmers vis-à-vis younger farmers (interview with Yokoishi on February 18, 2016). Elderly farmers are disadvantaged in the context of big heavy agricultural products such as pumpkins, but they are good at working with light agricultural products. Second, demand in urban districts should be observed prior to making production decisions; and third, the products should be unique, harnessing the comparative advantages of Kamikatsu’s natural resources and location.

The products of Irodori are decorative leaves for traditional Japanese restaurants and thus good for handling by elderly female farmers because they are light and small (Yokoishi, 2007). Along with this knowledge Yokoishi recognized social changes quickly at an early stage and combined this with a business idea for Kamikatsu. Preparing the leaves was traditionally done by apprentice cooks in Japanese restaurants, but lifestyle changes since the 1970s caused them to have a growing dislike for this task. Yokoishi perceived this as an opportunity for product innovation based on a strategy of the type that Kim and Mauborgne (2005) have termed “Blue Ocean Strategy”, which recommends creating a new market providing new values.

In this case, the greatest demand is from traditional Japanese restaurants in cities with a tradition of sophisticated Japanese cuisine. Kamikatsu used its geographical advantage. It is too far from Kyoto and Osaka to commute for daily work; however, it is close enough to share certain aspects of culture and customs with these cities, where the art of Japanese cuisine is highly developed and popular, compared to other regions such as the Tohoku region in northeastern Japan.

Good relationships with the local JA helped to capture markets across Japan. The JA has good knowhow on sales of agricultural products. Irodori and the JA share responsibilities in an efficient way. JA East Tokushima concentrates on sales of agricultural products at the wholesale level, and Yokoishi (Irodori) concentrates on the marketing. At first, Irodori offered only 20-30 types of garnish, but it now offers 320 types of decorative leaves branded as Irodori. The Irodori brand has 70% share of the market. The total sales volume of the market for decorative leaves as part of traditional Japanese cuisine amounts to 1000 million yen (9.6 million dollars) annually (Figure 4). The market is small, but big enough for the economy of this small town. Irodori farmers thus earn money from outside the town and

9. In a broader sense, the market for tsumamono is much bigger, and the total sales volume amounts to 10 000 million yen. This is still a small market. For example, the market volume of the Japanese automobile industry amounts to 50 trillion yen annually (Japan Automobile Manufacturers Association, n.d.).
invest it in further cultivation of crops, creating a positive monetary circular flow in Kamikatsu. Additionally, visitors to Irodori from other regions and other countries consume in the town.

To gain clients outside Kamikatsu, Irodori had to develop a system to react to orders quickly and precisely. Irodori introduced fax machines, computers, tablets, and smartphones to institute a suitable communication system with the cooperative farmers. Indeed, bespoke PCs with simplified mouses and keyboards were introduced based specifically on the preferences and abilities of elderly farmers. The information system using ICT ensures the rapid reaction of farmers to direct orders from clients and stimulates motivation and a healthy competitive spirit among the farmers (Yokoishi, 2007). This can be considered as a positive forward linkage, as discussed by Hirschman (1958), of agriculture to ICT. Yokoishi coordinated budgets for the introduction of ICT without depending significantly on subsidies from the government and creating a burden for the further running of the enterprise. This is also a reason for the success of Irodori.

**Comparison with Iitate: A Case Study of Moderate Leadership**

The aim of the comparison here is to compare the strong leadership in Kamikatsu with Iitate, which provides an example of more moderate leadership. Iitate and Kamikatsu are similar communities, both in chūsankan chiiki.

**Overview**

Iitate is a village in northeastern Fukushima Prefecture (Tohoku region of northeastern Japan) and is located in the mountains, like Kamikatsu. The nearest city is Fukushima City, the prefectural capital, approximately 40 km away, and Iitate is 240 km from Tokyo. 75% of the village is forests and fields.

Agriculture in Iitate has often suffered damage from cold summer weather. The summer damage was especially severe in 1980 and 1993. Furthermore, import liberalization after World War II had negative influences on Iitate’s agriculture. Declining competitiveness of agriculture has discouraged the next generation from taking up farming. 70% of the households are still farmers; however, the income from agriculture is low and many residents have started to work for companies elsewhere, e.g., in Fukushima City. The population is declining continuously. In 1956 Iitate had 11 403 residents, but in April 2010 only 6588 (Chiba, Matsuno, 2012). The proportion of residents aged 65 years and older rose from about 7% in 1970 to about 29% in 2010 (Chiba, Matsuno, 2012).
Over the last two or three decades Iitate has become known for its successful village management with autonomous efforts of the residents for the modernization of agriculture, and stimulating the entrepreneurial behaviors of the residents (Shioya, Iwasaki, 2014). Their entrepreneurial behavior still remains after the breakdown of village management because of the evacuation after the nuclear power plant meltdown in Fukushima in March 2011; Iitate is located 40 km from Fukushima Nuclear Power Plant 1. The autonomous behavior of the residents is still clear to see in their better reorientation in the places to which they were evacuated compared to evacuees from other municipalities. They have relatively quickly started to undertake activities in the agricultural routine in a new form, such as in the Kōchan no chikara (Power of mothers) in Fukushima City, in which female farmers from Iitate have organized to start making processed agricultural products again. In these projects elderly female farmers often take the initiative. Their entrepreneurial initiative has different roots than that of the elderly residents in Kamikatsu. The farmers thus did not need an entrepreneurial input as the elderly in Kamikatsu did.

**Stimulation of Farmers via Moderate Leadership**

Similarly to Kamikatsu, the municipality of Iitate acutely recognized the problems due to demographic change linked with structural decrease in the value of agriculture, and the reaction was also similar. They recruited competitive people to achieve a solution to the challenges. In 1983 the village municipality selected committee members with diverse professions from departments of the municipality for the implementation of the third development plan of the government (Japanese: Dai 3ji zenkoku sógō kaibatsu keikaku) (Chiba, Matsuno, 2012). Unlike Kamikatsu, Iitate chose the members from local residents. They were in their thirties and forties and participated in the committee without representing the duties and responsibilities of the departments to which they belonged (Chiba, Matsuno, 2012) so that they could discuss various ideas freely without any restrictions in order to converge on a creative solution for the village. Also, an extension officer was designated as a member.

Parallel to this committee a forum for exchange among the residents, called Musōjuku, was established around the same time, in 1986. This was an independent project followed by a workshop to discuss solutions to the challenges of population decline and weak agriculture promoted by the Ministry of Agriculture, Forestry and Fisheries in October 1986 (Chiba, Matsuno, 2012). A member of the workshop, Norio Kanno, became the leader of Musōjuku. Similarly to Yokoishi in Kamikatsu, Kanno knew Iitate and the residents well. Staff of the municipality helped in administration.
Musōjuku was independent from the municipality, but it was recognized by the residents as a forum of a suitably official nature and for all residents.

Unlike Kamikatsu, Musōjuku did not itself make any concrete suggestions for actions, such as the Irodori project begun by Yokoishi. Nor did Musōjuku engage explicitly with elderly residents. Musōjuku provided all residents with opportunities to express their visionary wishes for themselves and the village, respecting the autonomy of the speakers (Chiba, Matsuno, 2012; Sato, 2010). Interesting ideas which were considered meaningful for the whole village were developed into village projects. However, the projects were not connected systematically with each other.

Among various projects arising from this activity, Wakazuma no tsubasa, a promotion project for young female farmers in Iitate that ran from 1989 to 1993 (Iitate-mura Madei Kigyokumiai, 2008), is considered the most meaningful by the residents (Chiba, Matsuno, 2012). Inspired by a talk by a female farmer in 1987 about her dream of going abroad, the project aimed to give young female farmers opportunities for international trips. First, they were the people most hindered from traveling, and second, as housewives, mothers, and workers they had the most influence and potential impact on the development of the village (Chiba, Matsuno, 2012), although they seemed at first glance to be weak and not influential. 19 female farmers visited agricultural villages in Germany in 1989. They were very impressed, and they consequently stimulated other residents in Iitate to start new agricultural enterprises. Café Aguri is one example of an enterprise resulting from the visit to Germany. German sweets and cakes there attract customers, and many people from other areas, including cities such as Fukushima City, visited the café repeatedly before the Triple Disaster of 2011. This is rare for a small café in a rural village.

The young female farmers’ impressions and observations about the big differences, in particular in the quality of life, between German farmers and themselves (Iitate WING 19, 1990) were, however, not gathered systematically by Musōjuku. Some female farmers dared to act entrepreneurially and have continued to do so into their later years; however, the successes here have depended on the entrepreneurial characteristics of specific individuals. In Iitate female farmers were stimulated for entrepreneurial behavior at an earlier stage of life than those in Kamikatsu; however, their entrepreneurial dynamics have not developed as much as in Kamikatsu.

**Result of the Efforts**

The moderate leadership of Musōjuku resulted in individual enterprises developing spontaneously from the forum. Despite variety in the types of
enterprise, the local residents who are involved all respect careful work with best efforts, a way of working which is called madei in Fukushima dialect. They therefore decided to use this dialect word as the brand name Madei. Each enterprise is part of a loose network, as described by Aßmann (2003), under this brand image, which helps attract people from other districts. Unlike Irodori, there is no specific unique product branded Madei which leads directly to capturing a high market share.

Another example is provided in the form of a farmer who improved a potato variety and a pumpkin variety. With a desire and respect for a high quality of rural life, farmers have been improving the quality of vegetables, e.g., a variety of pumpkin called Yukikko (snow child), instead of farming economically and rationally. In comparison to Irodori, high-quality pumpkins, are not unique enough to replace pumpkins from other places. In a project to breed improved varieties, it took 30 years to begin full-scale cultivation (Mainichi Shinbun, 2015; Iitate Yukikko Tsūshin, n.d.). In comparison to Irodori, which has established a reputation and gained 70% of market share in 30 years, it is more difficult to maintain high motivation in this project.

One reason for lower dynamism in the enterprises in Iitate seems to lie in the leadership there. The members of the committee and of Musōjuku seem to continue to fulfill a supporting function for farmers and have not taken the initiative as entrepreneurial leaders like Yokoishi at Irodori. Exchanges of information and knowledge with other areas do take place, but without substantive prospects for business development. Village residents do not want Iitate to expand by having more interaction with cities and will likely maintain this mindset unless a leader like Yokoishi appears.

Nevertheless, they are still good at communication with other people regardless of their status or position, so that the project Kāchan no chikara (Power of mothers), in which mostly elderly female farmers from Iitate are the main project members, was established in January 2012 (Shioya and Iwasaki, 2014) and is proceeding well in cooperation with diverse partners, e.g., Fukushima University (interview with a Fukushima University professor on July 30, 2015). They make and sell processed agricultural foods. In comparison with Irodori in Kamikatsu this project aims to regain the daily routine of the female farmers, which they miss after the evacuation. The project is organized more flatly, and the project members follow their personal interests. They have not been able to generate a common project purpose from diverse individual interests, and there are conflicts of interest between those project members who participate for self-satisfaction and those who seek business success (interview with a Fukushima University professor on July 30, 2015).
CONCLUSIONS AND FUTURE RESEARCH NEEDS

Kamikatsu and Iitate show that both insiders (in the case of Iitate) and outsiders (in the case of Kamikatsu) to the community can become leaders for the mobilization of local residents. This seems to support Schumpeter’s thesis that everyone can become an entrepreneur.

Outsiders, of course, need time to learn and understand the nature and dynamics of the community and its residents, as the case of Yokoishi suggests. The Community-Reactivating Cooperator Squad could be an alternative to a conventional career path, as, again, shown by Yokoishi. The success of the Cooperators depends to a large extent on the municipality which accepts them and depends also on the extent to which they become embedded and integrated in the community. Three years is likely too short a time period to become embedded; Yokoishi had ten years’ experience before he began the Irodori project.

Empathy for the residents and understanding their strengths and preferences seem to be an essential element of a leader for the successful mobilization of residents. The case of Yokoishi suggests that experience and co-working with residents nurtures empathy for them. Other entrepreneurs who succeed in new agricultural business do not have such experience and are not interested in the local residents.

To build a business which stimulates the local economy, moderate leadership seems not to be sufficient. Stimulated residents do not spontaneously build entrepreneurial networks geared toward the dynamics of local economies. For this, strong leadership with a clear pro-community business vision seems to be required. Comparison between the case studies of Kamikatsu and Iitate indicates that the age when individuals are stimulated to participate in entrepreneurial activities is less critical. Kamikatsu succeeds in earning money from other regions, while Iitate is less successful at this.

Both Kamikatsu and Iitate suggest that support of, and good relationships with, the municipality are helpful to stimulate residents en masse. The initiators have to be able to convince the municipality and other stakeholders of the advantages of elderly people participating. This belongs to the innovation process.

So, why don’t all staff at the JAs become leaders like Yokoishi? Individual, intrinsic differences in people are clearly important to understanding this. It is helpful to look at the association between personality characteristics and leadership, e.g., referring to Big Five research studies (e.g., Brandstätter,
Diverse exchanges and communication from diverse viewpoints can help to change personality features, and personality can be trained in this way (Pelz, 2014). Indeed the effectiveness of this has been observed empirically to some extent (Pelz, 2014), but systematic analyses are required.

Pelz (2014), Sarasvathy (2008), and other researchers provide recommendations for entrepreneurship education. Research discussions and results can be applied in a useful way to deepen the open question about the development of an entrepreneurial mindset for the creation of solutions for rural aging communities.

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n° 25 - Journal of Innovation Economics & Management - 2018/1 111
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## Appendix 1 – Overview of districts referred to in section “Entrepreneurial behavior for an endogenous solution with reference to cases from Japan”

<table>
<thead>
<tr>
<th>Location</th>
<th>Prefecture</th>
<th>Region</th>
<th>Population</th>
<th>Ratio of residents aged 65 years or over</th>
<th>Geographic features</th>
<th>Distance to Tokyo</th>
<th>Main economy</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tatomi</td>
<td>Yamanashi prefecture</td>
<td>Relatively flat in the bottom of a basin (Kofu basin)</td>
<td>17,000</td>
<td>12.0%</td>
<td></td>
<td>110 km</td>
<td>Agriculture</td>
<td>Merged into Chuo in 2006.</td>
</tr>
<tr>
<td>Ryozen</td>
<td>Fukushima prefecture</td>
<td>Hilly and mountainous</td>
<td>9,000</td>
<td>32.2%</td>
<td></td>
<td>245 km</td>
<td>Agriculture</td>
<td>Merged into Date in 2006.</td>
</tr>
<tr>
<td>Hata</td>
<td>Fukushima prefecture</td>
<td>Hilly and mountainous</td>
<td>6,171</td>
<td>30.4%</td>
<td></td>
<td>240 km</td>
<td>Agriculture</td>
<td>-</td>
</tr>
<tr>
<td>Kamihayashi</td>
<td>Niigata prefecture</td>
<td>Hilly and mountainous</td>
<td>9,800</td>
<td>30.3%</td>
<td></td>
<td>360 km</td>
<td>Agriculture</td>
<td>Merged into Murakami in 2008.</td>
</tr>
<tr>
<td>Kamikatsu</td>
<td>Tokushima prefecture</td>
<td>Hilly and mountainous</td>
<td>1,699</td>
<td>51.3%</td>
<td></td>
<td>530 km</td>
<td>Production and sale of rice and rice cakes</td>
<td>-</td>
</tr>
<tr>
<td>Mashiki</td>
<td>Kumamoto prefecture</td>
<td>At the foot of mountains</td>
<td>32,000</td>
<td>25.7%</td>
<td></td>
<td>880 km</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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2. Kakeda Chūō Naika (n.d.)
3. City of Date (2012)
5. Nagata Prefecture (n.d.)
6. City of Murakami (n.d.)
7. Municipality of Kamikatsu (2016a)
8. Mashiki Town (2014)
# Appendix 2 – Overview of companies referred to in section “Entrepreneurial behavior for an endogenous solution with reference to cases from Japan”

<table>
<thead>
<tr>
<th>Company name</th>
<th>Matsumoto Farm</th>
<th>Salad Bowl</th>
<th>Kamihayashi Country Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization type</td>
<td>joint-stock corporation</td>
<td>limited company</td>
<td>joint-stock corporation</td>
</tr>
<tr>
<td>Year company established</td>
<td>1999¹</td>
<td>1991³</td>
<td>2004¹</td>
</tr>
<tr>
<td>Location</td>
<td>Kamikatsu, Tokushima prefecture, population: 1699²</td>
<td>Mashiki, Kumamoto prefecture, population: 32 000⁰</td>
<td>Chuo (Tatomi before the merger in 2006), Yamanashi prefecture, population (as Tatomi, in 2003): 17 000⁰</td>
</tr>
<tr>
<td>Number of employees</td>
<td>6¹</td>
<td>30⁴</td>
<td>40¹⁰</td>
</tr>
<tr>
<td>Main business content</td>
<td>Information service and support for marketing and distribution of agricultural enterprises³</td>
<td>Production and sale of carrots and some other vegetables⁵</td>
<td>Production and sale of tomatoes, cabbages and cucumbers⁷</td>
</tr>
<tr>
<td>Features of the business</td>
<td>Commercialization of decorative leaves for traditional Japanese cuisine as enterprise &quot;Irodori&quot; and its branding</td>
<td>Management of produce traceability, attainment of Global GAP²</td>
<td>Management of produce traceability, Kaizen activity (daily activities for small improvements at work)¹¹</td>
</tr>
<tr>
<td>Founders and their background</td>
<td>Tomoji Yokoishi; technical adviser at Japanese Agricultural Cooperative (Kamikatsu Branch)¹</td>
<td>Takeshi Matsumoto; a son of Hiromi Matsumoto, founder, work experience in sales division of a chemical company³</td>
<td>Susumu Tanaka; work experience at a bank and an insurance company, born into a farming family¹¹</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The five founders are all proper farmers in Kamihayashi.¹²</td>
</tr>
</tbody>
</table>