

Are farming companies emerging from non-agricultural sector better managed than conventional farms in Japan?

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ABSTRACT

Conventional Japanese farmers have faced a longstanding challenge in adapting to a changing business environment. While the deregulation of the Agricultural Land Act in 2009 has led to the entry of companies from the non-agricultural sector into agriculture, another reason seems to be the general capitalisation of the agricultural industry into the wider economy. However, few management studies have analysed these new companies. An important question is whether the corporatisation of farm business is accompanied by the modernisation of farm management techniques. Our study examines crop-farming companies and compares farm management styles of these newly emerging farming entities with those of family-farm-based entities. It is based on 124 questionnaire responses from a sample of 577 posted in 2016. The questions covered human and organisational factors, as well as operational factors. We find no notable advantages in the way companies are managed. Probably because of their inexperience and low dependence on the farming business in terms of sales, our comparison highlights improvements that they need to make for further modernisation of farm management. Both types of entities face similar challenges in raising managerial capabilities.

KEYWORDS: Entry of non-agricultural companies; Modernisation of management; Farm management styles; Managerial capabilities; Farm business growth

1. Introduction

Although conventional family-owned and family-operated farms have been the most common business style in Japanese agriculture, in recent years, their popularity has been considerably waning. Previous literature has highlighted that the tasks carried out by farmers have changed in the modern agriculture of developed countries, where farm businesses were previously mostly owned and operated by families (Gasson and Errington, 1993; Hutson, 1987; Kingwell, 2002). Generally, small family-owned and family-operated farms struggle to adapt to a more competitive environment. Conventional farm management stands in stark contrast to modern farm management, and internationally, this is a barrier to global competitiveness (Kay, Edwards and Duffy, 2012; Kimura, 2008; Malcolm, Makeham and Wright, 2005; Nuthall and Old, 2017; Olson, 2011).

Thus, Japanese farms face the pressing challenge of transitioning from conventional farm management to

modern farm management to remain viable (Kimura, 2004; 2008). The Japanese agricultural structure has changed drastically, in recent years. According to the Census of Agriculture and Forestry 2015, farms producing less than a million yen³, which comprise approximately 60% of the Japanese farm population, account for just 5% of the Japanese agricultural sales volume, whereas farms producing more than 30 million yen, which account for 50% of all the Japanese agricultural sales volume, account for only 3% of the Japanese farm population. That is, although most of the Japanese farms remain small-scale in terms of farm population, the major farms, in terms of business scale, concentrate on a small number of larger farms.

In particular, several agricultural policies have been developed in Japan to boost the corporatisation of family farms as well as the entry of non-agricultural corporations into farming. Along with the ageing of farmers, the number of small family farms has decreased rapidly. In contrast, the number of farming companies⁴ increased

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³ At the time of writing (December 2017), one Japanese Yen was approximately equivalent to £0.01, \$US0.01 and €0.01.

⁴ An entity of a farm business with a legal personality distinct from those of the individuals taking part in it can be called either a 'company' or 'corporation.' Which of these words is chosen depends on the country and the case. In this work, 'company' is used to refer to a farming legal person, who often has a relatively small business. 'Corporation' is used to refer to a non-farming legal person, which is usually a larger business than a company. In Japan, farming companies may cover both private companies that are newly emerging in the agricultural sector and existing family farms that have been incorporated.

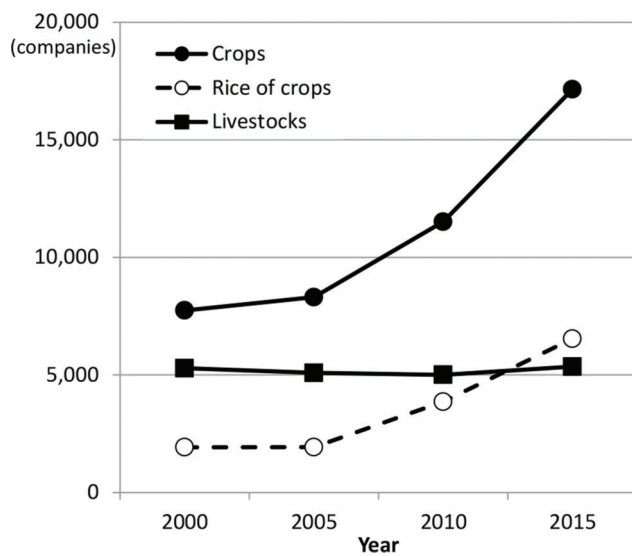


Figure 1: Numbers of farming companies with sales by main product in Japan. Source: Customised data from the Census of Agriculture and Forestry, Ministry of Agriculture, Forestry and Fisheries, Japan.

to 18,857 in 2015, which is roughly the double of that of a decade ago. As a result, farming companies account for almost 30% of the total Japanese agricultural sales volume, and they are much more important because they hire many young farmers (Japanese Ministry of Agriculture, Forestry and Fisheries [MAFF], 2017).

However, Japanese farming companies vary in nature. Historically, before modern farm management made inroads into the crop sectors such as rice, vegetables and fruits, it had already entered the livestock industry. As Figure 1 shows, the number of rice-farming companies exceeded that of livestock-farming companies in 2015. Some Japanese farms were corporatised by one or more business-oriented family farms mainly as a limited liability company or stock company, while one type of Japanese farming company was a community-based farm cooperative composed of many small family farms, often in the form of agricultural producers' cooperative companies, established to conserve farmland.

Besides such farming companies, there has been a six-fold increase in the entry of companies from the non-agricultural sector into the agricultural sector following the deregulation of farmland use, particularly since 2009. As Figure 2 shows, as of 2016, the number of farming companies emerging from the non-agricultural sector had increased to more than 2,500. Most of them began their operations in the food industry including the food-processing sector, food retailers and eating-out sector, in construction or in the non-profit sector. A typical reason for the entry of farming companies from the food sector into agriculture is that they could make use of the crops they produced to generate value addition and to bring product differentiation in their original business. Corporations in the construction industry sometimes entered the farming sector to be seen as contributing to social activities and, thus, meeting the mark to be eligible for public works contracts. Scale and environments of main businesses that such farming companies operated also varied; some are a well-known big business and others are a local small business. Generally, the search for alternative sources of business resources and business

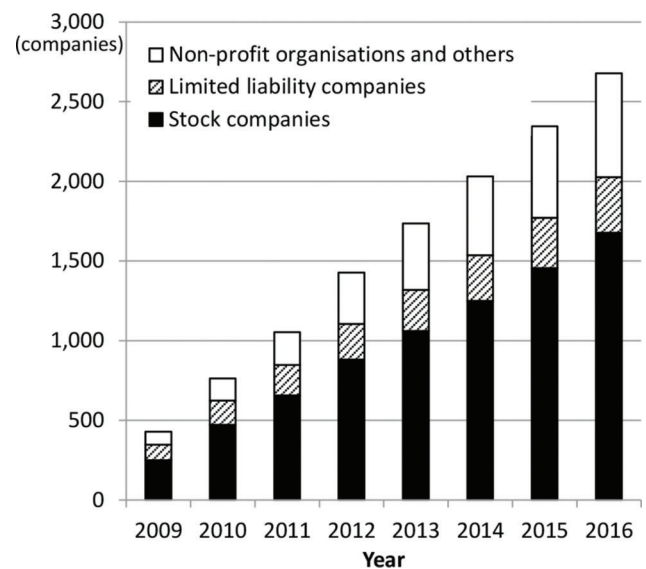


Figure 2: Number of emerging farming companies from the non-agricultural sector. Source: Data derived from the website of Ministry of Agriculture, Forestry and Fisheries, Japan (http://www.maff.go.jp/j/keiei/koukai/sannyu/attach/pdf/kigyuu_sannyu-11.pdf).

opportunities is what motivated farming companies from the non-agricultural sector to enter the agricultural sector in Japan (Japan Finance Corporation [JFC], 2013; Shibuya, 2009).

Only a few management studies have analysed these emerging farming companies in Japan. Some studies (JFC, 2013; Noguchi, 2013; Shibuya, 2009) hypothesise that these emerging companies would generally introduce sophisticated management techniques from their main business to apply to farm business. Supposing that it was true, Noguchi (2013) suggested that further investigation into the farm modernisation practices of these companies could help to provide a perspective on how conventional farm management could be improved; it was thought that these companies would be more serious about farm business given their wider experiences through their main business and would adopt tougher business criteria than conventional family farms would. Meanwhile, other studies (Shibuya, 2011; Yamamoto, 2010) highlight the unsophisticated management styles of farm businesses in these companies. Thus, even if the entry of companies from the non-agricultural sector continues, a key question remaining is whether the corporatisation of farm business is always accompanied by modernisation of farm management techniques.

Therefore, this study assesses the managerial aspects of Japanese farming companies by surveying newly emerging farming companies from the non-agricultural sector and conventional farmers' companies to examine if the former is better managed than the latter, which are often the 'farm-household complexes'. More specifically, our survey investigates the differences in farm management styles between these two groups of farming companies, including the capabilities of the farm manager, organisational factors such as business strategies and orientations, and operational factors such as marketing and on-farm management practices.

This paper proceeds as follows. Part two reviews international and domestic perspectives on the entry of farming companies from the non-agricultural sector into agriculture. Part three considers the analytical framework

and part four explains the survey method and the data. Part five analyses and discusses farm management styles by studying the survey results. Part six concludes by highlighting the challenges for further farm modernisation in Japan.

2. Entry of farming companies from the non-agricultural sector into agriculture

One general reason for the entry of companies from the non-agricultural sector into the agricultural sector is the capitalisation of the agricultural industry in the economic system. Since the more competitive sectors of the economy need the farm sector to become more efficient and capitalised, agriculture sometimes attracts capital from corporations such as those dealing with farm inputs and the various food industries. In other words, the food chain progresses with financing for farms from corporations in the upstream or downstream industries of agriculture. At the same time, farmers adapt to the changing economic environments spontaneously, increasing their scale of operations with advanced technologies or generating non-farming sources of income, to remain viable. This phenomenon is often referred to as the emergence of the ‘farm family entrepreneurs’ (Magnan, 2012; Pritchard, Burch and Lawrence, 2007) and could be a key factor in the transformation of conventional farm management to modern farm management in a global setting as described in the Introduction.

Another reason for the entry of farming companies from the non-agricultural sector into the agricultural sector is the acquisition of farmland by major corporations and capital institutions seeking alternative opportunities for investments in their businesses (Sippel, Larder and Lawrence, 2017; GRAIN, 2008). This has been increasing rapidly in developed and developing countries especially after the global financial and food crises of the latter half of the 2000s. Such external organisations often explore and acquire farmland ownerships globally to secure scarce food for people in their home countries.

For the past two decades in Japan, the topic of companies from the non-agricultural sector entering the farming sector has been a controversial one in the national farmland policy. The basic principle of the Agricultural Land Act (enacted in 1952) is to promote the ownership of land by its actual user; an individual or company can acquire farmland only if a farmer or members from the company engage principally in on-farm work. The Act did not allow companies from the non-agricultural sector to access farmland rights for half a century. The restriction on ownership by companies has also the practical objective of preventing the speculative acquisition of farmland that would disconnect land prices from the return from its use in agricultural production (Organisation for Economic Co-operation and Development [OECD], 2009). Moreover, because of the recent rapid shrinking of the industry in Japan, promoting competitive farms is becoming a high priority objective in agricultural policy. The pressure to continue to enhance the eligibility of companies to participate in the agricultural sector has increased.

In 2001, the Act was amended to attract capital from food producers or retailers with integrated business relationships for part-share ownership of a farming

company. In 2003, the Act was amended again to allow companies from the non-agricultural sector to obtain tenancy rights to farmland on some pilot project sites (the so-called special structural reformation districts), and then in 2005 the Act was further amended to extend this deregulation of farmland use without ownership to broader sites where land abandonment was a pressing challenge, especially in less-favoured areas for farming. As the regulation of farmland use began to be relaxed to make farmland use more accessible for companies from the non-agricultural sector, the societal and environmental impacts of the entry of such farming companies began to be discussed (Hotta and Shinkai, 2016; Muroya, 2015; Ohnaka, 2013). The key concerns were whether they would use the farmland properly and efficiently, and in line with social and environmental considerations, in the host communities. Any company can obtain tenancy rights to farmland in all of Japan following the amendment of the Law in 2009 that clarifies the social and environmental responsibilities of land users, although farming companies from the non-agricultural sector are prohibited still from owning farmland.

In short, in the Japanese context, the main reason behind the emergence of farming companies from the non-agricultural sector is the further capitalisation of agriculture, rather than farmland ownership by international corporations and capital institutions.

3. Analytical framework

This study explores management in the emerging farming companies, and the transition from conventional farm management to modern farm management. Since family-owned and family-operated farms are common business structures, farm entities often present the ‘farm-household complex’ as individuals, partnerships and, occasionally, private companies (Nuthall, 2011). The modernisation of farm management needs to include all those practices that allow a farm to be separated from the ‘farm-household complex’ and managed as a business to reduce conflict over capital and labour allocation among families. It should be noted that a modernised farm business can be seen as a business entity with a legal personality that essentially performs the business tasks. More importantly, the corporatisation of farm business is not always accompanied by the modernisation of farm management techniques.

In this study, modern farm management is concerned with the comprehensive framework, rather than important but specific issues such as the scale of farm operations, advanced technologies, efficient labour productivity and shrewd investment and financing. Following Kimura (2004), Kinoshita and Kimura (2016) and Kinoshita, O’Keefe and Kimura (2015), our survey questions focused on three aspects of modern farm management: (I) time modernisation, (II) economic modernisation and (III) functional modernisation. Time modernisation refers to the clear segregation of business hours and private hours. Economic modernisation refers to controlling accounting and finance practices and isolating business budgets from household budgets. Functional modernisation relates to organising and coordinating work duties and the separation of work and family relationships.

Various internal factors that are under the manager’s control may affect the aforementioned modernisation

of farm management. Kimura (2004) and Kinoshita, O'Keefe and Kimura (2015) correlated farm modernisation in Japanese and Australian farms with management factors such as the managers' personal managerial capabilities, farmers' intentions of, and attitudes towards, farming, farm business strategies, and production and marketing management. Kinoshita and Kimura (2016) modelled farm modernisation in the Japanese rice industry to examine the influence of such management factors on corporate farm management more directly. The studied farms substantially demonstrated the impact of human factors, as well as organisational and operational factors, on the modernisation of farm management. Likewise, Nuthall and Old (2017) compared personal characteristics of farm managers among family and corporatised farms in New Zealand to examine determinants of legal status of farms, and it highlighted that attitudes and objectives towards farm business were relative to ownership arrangement of their sampled farms.

To understand farm modernisation better, this study focuses on management styles, such as farmers' intentions and managerial capabilities, farm business strategies and various practices in workforce and financial management. Managerial capability is a crucial driver of farm business viability (Kimura, 2008; Muggen, 1969; Nuthall, 2009a; 2009b). Interestingly, Kimura (2008) argued that the ideal farm manager needs the capability and superior skills required to fulfil three functions: entrepreneurship, adaptability and administration. Farm business strategies aim to guide management practice based on farmers' intentions, which have been described in the literature (Kimura, 2004; 2008; Malcolm, Makeham and Wright, 2005; Nuthall, 2009a; Olson, 2011; Kay, Edwards and Duffy, 2012). These intentions refer to the underlying goals of management activities, including the economic, environmental, cultural and social objectives identified as pertinent to farming. Particularly, Kimura (2004) investigated farms' business objectives in terms of a farmer's desire to (1) pass on their farm to their children; (2) earn a livelihood; (3) earn income on par with other industries; (4) optimise profit; (5) enjoy being an innovative farmer; (6) exploit consumer demand and appreciation; and (7) expand the business. Using the same farmer motivations, we categorised farmers' intentions as (i) tradition-directed, that is, they wish to pass on their farms to their children or to enjoy being an innovative farmer; (ii) economy-oriented, that is, their objective is to earn a livelihood, an income commensurate with those in other industries or a profit and (iii) business-minded, that is, they have higher-level objectives, including the exploitation of consumer demand and the appreciation or expansion of their business. Then, we specify popular objectives that follow the progression from conventional to modern farm management.

Thus, farm management styles, which act as fundamental drivers towards modern farm management, are also controllable by farm managers. In the remaining part of the paper, we investigate the differences in farm management styles between the farming companies from the non-agricultural sector and the conventional farmers' companies, using statistical analyses, mainly the chi-square test, of the data collected through surveys given to Japanese crop-farming companies. We also examine marketing management, focusing on the features of agricultural products because it is a matter of concern that

most Japanese farmers, who have faced less competitive markets, still have strong ideas of 'product-out' rather than 'market-in' for selling their products.⁵

4. Survey method and an overview of sample data

No public database covers all Japanese farming companies from the non-agricultural sector. Therefore, in this study, we contracted with the two major private credit agencies that maintain a nationwide database covering 3,844 agricultural companies (approximately 20% of the total) and used a reply-paid postal survey to collect data from farming companies emerging from the non-agricultural sector. In February 2016, a questionnaire was posted to 577 newly established agricultural companies identified via directory lists provided by these agencies. By March 2016, this effort had generated 188 responses (response rate of 33%), with 124 usable responses excluding livestock sectors (usability rate was 66%); for, only crop-farming companies that produced no livestock were targeted for the analysis because the popular sectors for emerging farming companies were rice and other crops rather than livestock. The survey questions explored five issues: 1) the operating structure, including resources such as investors from the non-agricultural sector, and the amount of land and labour on the farm and business tools; 2) management attitudes, including the farming purpose and managerial capabilities; 3) business strategies, including goals and specific planning; 4) the workforce and financial management and 5) sales and marketing. It should be noted that the responses that constitute our data, and on which we based our conclusions, were self-assessments by a farm manager rather than that by the company chairperson.

The criteria for obtaining results for their business are important to farm managers. However, our survey did not collect data on profitability, such as net farm business income or profit. One reason is that it would be difficult to compare profitability among Japanese sample farms because some farms still have immature accounting arrangements that do not record feasible data. Another is that this study constitutes a preliminary examination of farm management styles in newly emerging companies, and thus, more complex analysis using profitability data is beyond its scope.

Usually, in Japan, farming companies from the non-agricultural sector add an agricultural section into a current (non-agricultural) corporation or set up a subsidiary just for farm business. Whereas no current farmer can invest in those companies that add an agricultural section into a current corporation, current farmers can be co-investors in those corporations that are subsidiaries for farm business because they provide support by offering their farmland and agricultural technical skills and forging a good relationship of the entering farming company with the rural community (Tanaka, 2016). The Agricultural Land Act allows co-investing farmers to make important decisions in the farming companies from the non-agricultural sector. The collected sample was grouped into farming entities from the non-agricultural sector and conventional farming entities, from the

⁵ The term 'product-out' refers to selling what they produce. Instead the term 'market-in' refers to producing what sells.

Table 1: Characteristics and statistical summary of the sampled farms

		FCNs (n = 83)	CFCs (n = 41)	Total (n = 124)
Years of operations after corporatising farm business ^{a**}	Mean	9.831	17.951	12.516
	Median	6.000	10.000	7.000
	SD	11.853	16.288	13.951
Organisation type ^{b**}				
	Stock companies, including former limited liability companies	85.5%	65.9%	79.0%
	Agricultural producers' cooperative companies	2.4%	26.8%	10.5%
	Others	12.0%	7.3%	10.5%
Main crops (Multiple answers)				
	Rice ^b	33.7%	51.2%	39.5%
	Beans ^{b*}	4.8%	19.5%	9.7%
	Wheat and Barley ^{b*}	3.6%	17.1%	8.1%
	Open-field vegetables ^b	36.1%	41.5%	37.9%
	Greenhouse vegetables ^b	32.5%	24.4%	29.8%
	Fruits ^b	22.9%	19.5%	21.8%
Sales of agricultural products (million yen [†]) ^a	Mean	60.279	63.719	61.416
	Median	14.635	25.000	15.800
	SD	140.326	143.839	140.920
Number of employee (people) ^a	Mean	12.173	5.220	9.836
	Median	4.000	3.000	3.000
	SD	39.983	7.209	32.939
Sales of agricultural products per employee (million yen [†]) ^{a*}	Mean	4.952	12.208	6.244
Share of agriculture in total business sales ^{a*}	Mean	54.3%	74.1%	60.8%
	Median	60.0%	90.0%	77.5%
	SD	41.580	34.122	40.239

^aMann-Whitney U test and ^bchi-square test were applied between the FCNs and the CFCs.

*denotes statistical significance at the 5% level, and **at the 1% level.

[†]At the time of writing (December 2017), one Japanese Yen was approximately equivalent to £0.01, \$US0.01 and €0.01.

viewpoint of the nature of investors in a farming company. Consequently, one group was defined as 'farming companies from the non-agricultural sector (FCNs)' which were invested in solely by non-agricultural corporations, while another group was called 'conventional farmer's companies (CFCs)' which were invested in solely by current farmers or jointly by current farmers and non-agricultural corporations. We used 83 samples of FCNs and 41 samples of CFCs for our analysis. The number of sample respondents may have been too small against a population consisting of roughly 6,000 crop-farming companies, which is estimated from Figure 1; we will test for sample bias later.

Table 1 summarises the respondents from the FCNs and the CFCs in this study. We observed significant differences in years of operations after corporatising farm business, organisation type, sales of agricultural products per employee and the share of agriculture in total business sales, between the FCNs and the CFCs. In brief, the FCNs, taking the form of a stock company, are inclined to continue for a short time which is less than 10 years and to generate sales of agricultural products that are as much as roughly half of their total business sales by producing, often, relatively profitable crops (e.g. vegetables and fruits) with more labour. On the other side, the CFCs, taking the form of an agricultural producers' cooperative company as well as a stock company, are inclined to continue for almost twice the number of years as the FCNs are inclined to and to achieve sales of agricultural products of most of their total business sales by producing, usually, less profitable crops (e.g. rice, beans, wheat and barley) with less labour.

Most of the respondents reported that they were stock companies and that they produced rice or vegetables as

their main crops, and that their mean and median average sales of agricultural products were approximately 60 million yen and 16 million yen, respectively. It should be noted that the average sales of agricultural products per employee in the FCNs was exceeded by more than twice that in the CFCs. The respondents constituted a tolerably balanced sample, in terms of organisation type, main crops, amount of labour and labour productivity, with reference to the Census of Agriculture and Forestry 2015 and the 2012 Economic Census. However, they insignificantly constituted a biased sample with a larger scale in terms of sales volume on the mean compared with the population level.

The respondents in our sample are spread across the country. The two groups of farms seemed to produce quite different crops, a difference likely due not to regional conditions but to the nature of farm organisations themselves. For instance, according to the National Survey on Community-based Farm Cooperatives, community-based farm cooperatives have in recent years very often corporatised as agricultural producers' cooperative companies to produce mainly rice, and therefore, the CFCs likely consist partly of community-based farm cooperatives. In addition, considering the differences in the agricultural production structure by region more generally, the northern island of *Hokkaido* stands out as unique in Japan; agriculture in *Hokkaido* is characterised by its low dependence on rice production, which is the central crop in Japan. Rather, *Hokkaido* depends highly on a wide range of non-rice crops, and its farms are much larger than those in other regions (See OECD, 2009). The analysed sample of 124 respondents contains just seven respondents from *Hokkaido*, all of whom did not differ greatly from other respondents in terms of crop type, farm

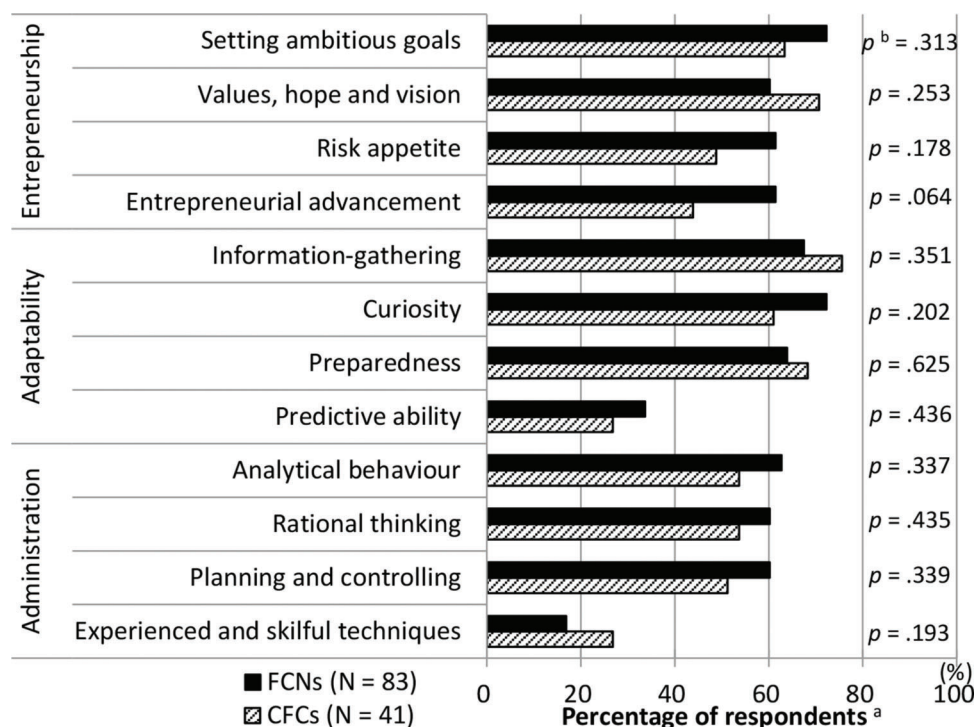


Figure 3: Managerial capabilities of the farmers of sampled farms. a) The proportion of positive responses including 'agree' and 'strong agree' for Likert scales with five levels. b) Chi-square test were applied to the number of positive responses and p represents the probability of the differences in each table.

size and number of employees. Thus, our sample is not biased by region and is comparable across regions.

5. Results and Discussion

Managerial capabilities

Figure 3 shows the proportion of positive responses to the 12 questions that explored managerial capabilities relating to the three functions of entrepreneurship, adaptability and administration, argued in Kimura (2008). The responses were self-rated Likert scales with five levels and, in sum, positive responses included 'agree' and 'strongly agree'.

Hypothetically, the FCNs' respondents are expected to have an overwhelming edge in managerial capabilities, given their main (non-agricultural) sector of operation. Overall, no significant difference in the proportions of positive responses to any capability was statistically observed between the two groups, and no clear evidence supporting such expectation was seen from our data. Nevertheless, most of the proportions of positive responses for the FCNs' respondents were higher than those for the CFCs' respondents. In particular, the FCNs' respondents reported a 10 points higher ratio of positive responses to risky behaviour, entrepreneurial advancement and curiosity, than those for the CFCs' respondents. It should be noted that the FCNs' respondents displayed a strong appetite for risk and entrepreneurial advancement, which conventional farmers in Japan have been lacking (Kimura, 2008). The FCNs' respondents also produced a higher ratio of positive responses to aggressive targets when compared with the CFCs' respondents. On the other hand, the CFCs' respondents reported a 10 points higher ratio of positive response to values, hope and vision than their counterparts did.

Another point to note is that the average proportion of positive responses to all capabilities was around 55% for the both groups, which, overall, revealed managerial capabilities were not great among the sampled respondents. Both the FCNs' and the CFCs' respondents displayed lower administrative capability, in particular, the use of techniques involving experience and skill. The average proportion of positive respondents was as low as approximately 20% for both groups. While the technical skills of the FCNs' respondents were far from perfect because of their inexperience in agriculture, it is of concern that even the CFCs' respondents showed the use of outmoded techniques. Therefore, the improvement of technical skills should be a priority for Japanese farm managers in companies.

Farmers' intentions

Figure 4 shows the proportion of positive responses to 7 questions that investigated farmers' objectives related to the three categories of their intentions, which are presented in the part on the analytical framework. Responses were self-rated Likert scales with five levels and positive responses included 'agree' and 'strongly agree'. By categorising their responses into the three intentions, we found that the CFCs' respondents were more devoted to tradition-directed and economy-oriented farming than the FCNs' respondents were. This was because the CFCs' respondents are inclined to prefer maintaining their life to pursuing the value and growth of business on the farm. This was reflected also, as described in the previous part, in the fact that relatively many agricultural producers' cooperative companies were included among the CFCs' respondents and that such companies are, these days, often community-based farm cooperatives composed of many small family farms, not for profit but for the conservation of their farmland.

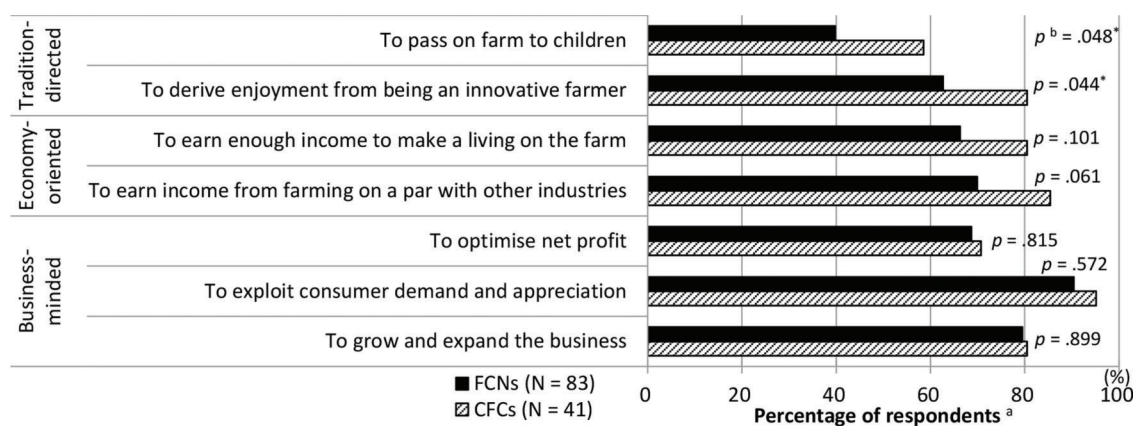


Figure 4: Farming objectives and intentions of sampled farms. a) The proportion of positive responses including ‘agree’ and ‘strongly agree’ for Likert scales with five levels. b) Chi-square test was applied to the number of positive responses, and p represents the probability of the differences in each table. *denotes statistical significance at the 5% level.

The CFCs’ respondents reported a higher proportion of positive responses to passing on their farm to their children, enjoyment of being an innovative farmer, and earning a livelihood and income on a par with other industries, than the FCNs’ respondents did. Significant differences in business objectives such as passing on their farm to their children and enjoyment of being an innovative farmer were observed between the two groups. Hypothetically, the FCNs’ respondents are greatly inclined to have higher objectives and business-minded intention as per their experiences through the main (non-agricultural) sector of operations. However, no clear evidence supporting such characteristics of FCNs was seen in our data, because both the FCNs’ and the CFCs’ respondents reported very strongly positive responses to exploitation of consumers’ demand and appreciation and expansion of the business. Thus, there seems no perfect shift in farmers’ intentions following the progression from conventional to modern farm management, while the CFCs still clung to being tradition-directed and economy-oriented.

Farm business strategies

Strategies for farm business are categorised as capital-intensive strategies (connected with expanding farm acreage, intensifying mechanisation or investing in technology), diversification strategies (introducing new farm enterprises, expanding sales/marketing activities and product differentiation, initiating a food-processing business or developing off-farm investments), restructuring strategies (rethinking the overall enterprise mix or using contractors for better financing), external management strategies (reducing price risk, engaging in less intensive farming for environmental reasons or being community-minded) or a human resource strategy. Figure 5 itemises such farm business strategies and those that are most selected are reported.

Both the FCNs’ and the CFCs’ respondents showed an inclination towards capital-intensive farming by expanding acreage and intensifying mechanisation. They showed an inclination also towards diversification by expanding sales/marketing activities and product differentiation, and by initiating food-processing business. Applying Porter’s three generic strategies (Porter, 1980) to this context, capital-intensive farming can be understood as a cost leadership strategy for Japanese farmers to cope with international competitiveness in price, and diversification

as a differentiation strategy for them to survive in domestic markets. In addition, hiring qualified staff, which is different from customary strategies such as capital-intensifying farming and diversification, was a prominent strategy for both of the groups. As ageing farmers and a lack of successors on farms emerge as critical issues, a human resource strategy is becoming more important for the Japanese industry.

A farm business strategy that demonstrated a very significant difference between the two groups was intensive mechanisation while the CFCs’ respondents reported an approximately 30 points higher ratio of positive response than their counterparts did. That finding coincides with community-based farm cooperatives that adopt a capital-intensive farming strategy, producing less profitable crops such as rice, beans, and wheat and barley, to continue their operation for conserving farmland. Expanding sales/marketing activities was also a favourable strategy for the CFCs’ respondents. On the other side, being community-minded was an interesting strategy for the FCNs’ respondents. This is natural because forging a good relationship with the rural community is a necessary condition of success in farm business particularly for farming companies coming from outside.

Marketing management

Marketing is one of the most interesting issues among Japanese farmers. In the previous section we saw that marketing strategies related to expanding sales/marketing activities and product differentiation were favourable to the sampled farms. Our survey also defined marketing management as focusing on features of agricultural products. In Figure 6, all the features in question here are demonstrated, and the ratios following each feature are presented. Around 70% of respondents from the both groups offered safe and trustworthy products, but there were no prominent features other than that of marketing management. The FCNs’ respondents reported a notably higher ratio of positive responses to some features such as offering especially fresh products and hard-to-find, rare products, than their counterparts did. Figure 6 shows also that more of the CFCs respondents offered no specific feature and a significant difference in this was statistically observed between the two groups.

The overall feature of agricultural products was limited to offering safe and trustworthy products for the two groups.

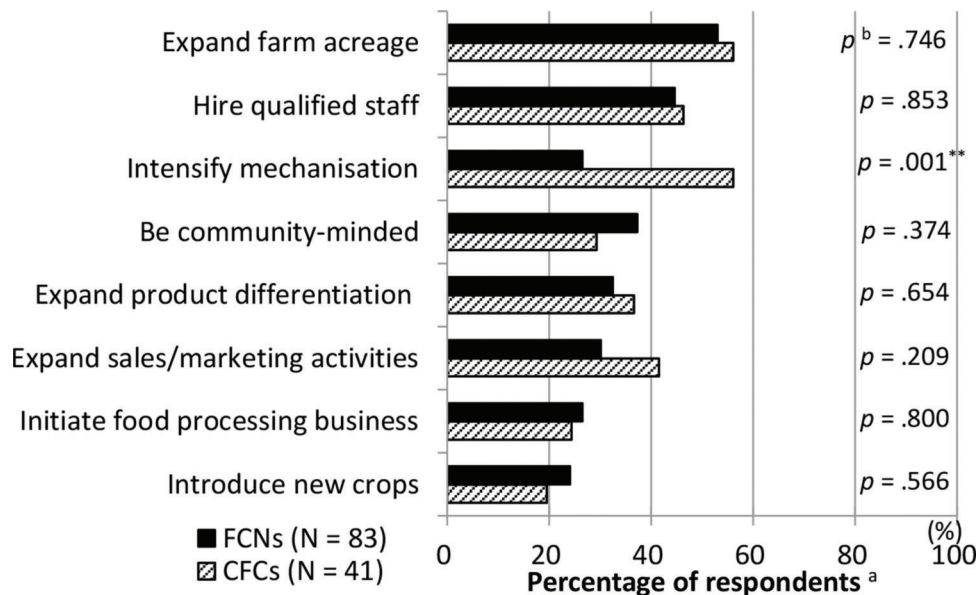


Figure 5: Major strategies of sampled farms. a) The proportion answering with ‘yes’ to simple yes/no alternatives. b) Chi-square test was applied to the number answering with ‘yes’, and p represents the probability of the differences in each table. **denotes statistical significance at the 1% level.

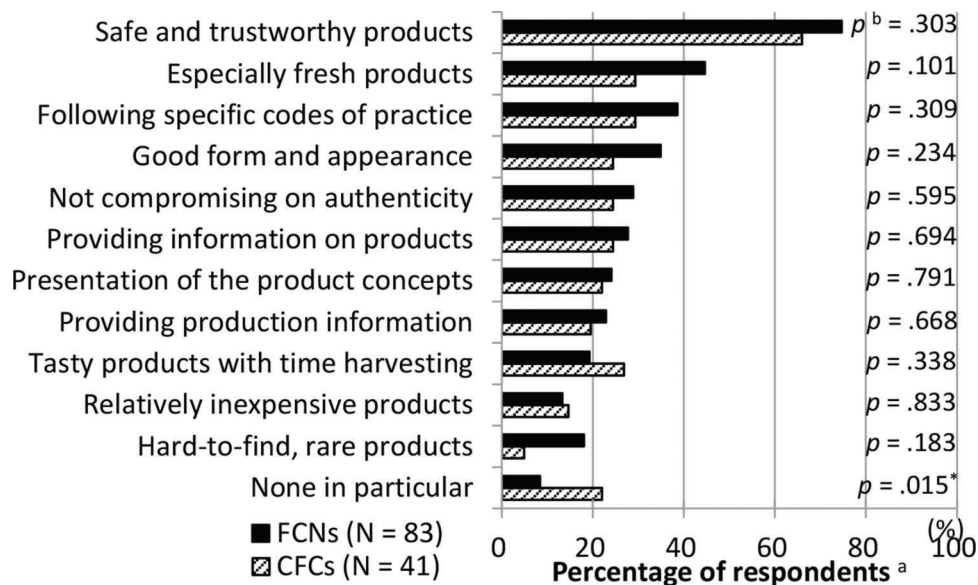


Figure 6: Features of agricultural products as marketing management. a) The proportion answering with ‘yes’ to simple yes/no alternatives. b) Chi-square test was applied to the number answering with ‘yes’, and p represents the probability of the differences in each table. *denotes statistical significance at the 5% level.

The CFCs’ respondents were not particularly inclined to have a strong idea of ‘market-in’ for selling their products. This was mostly because the CFCs’ respondents are always dependent on the Agricultural Cooperatives and just engage in mundane marketing activities to sell their products. By contrast, the FCNs’ respondents were inclined to develop differentiated products (for example, greenhouse vegetables and fruits), unlike conventional crops and to find new marketing channels by themselves.

Modernisation of farm management

As described in the part on the analytical framework, the survey included questions about time and about economic and functional aspects to examine farm modernisation. Specifically, the practices for time modernisation are connected to personnel management, those for economic

modernisation are connected to accounting and financial management and those for functional modernisation are connected to operational management. In Figure 7, all the practices questioned here are explained and the ratios following each practice are presented.

The FCNs’ respondents reported a notably lower ratio of positive responses to hiring employees for time modernisation of farm management. The FCNs’ respondents also reported a lower ratio of positive responses to most of the practices for economic modernisation. Surprisingly, they demonstrated a significantly lower ratio of positive responses to double-entry bookkeeping and formal payments to managers and reported approximately a 10 points lower ratio of positive responses to financial analysis and diagnosis than CFCs’ respondents, which have been assumed to be ‘farm-household complexes’, did. For functional modernisation, the FCNs’ respondents

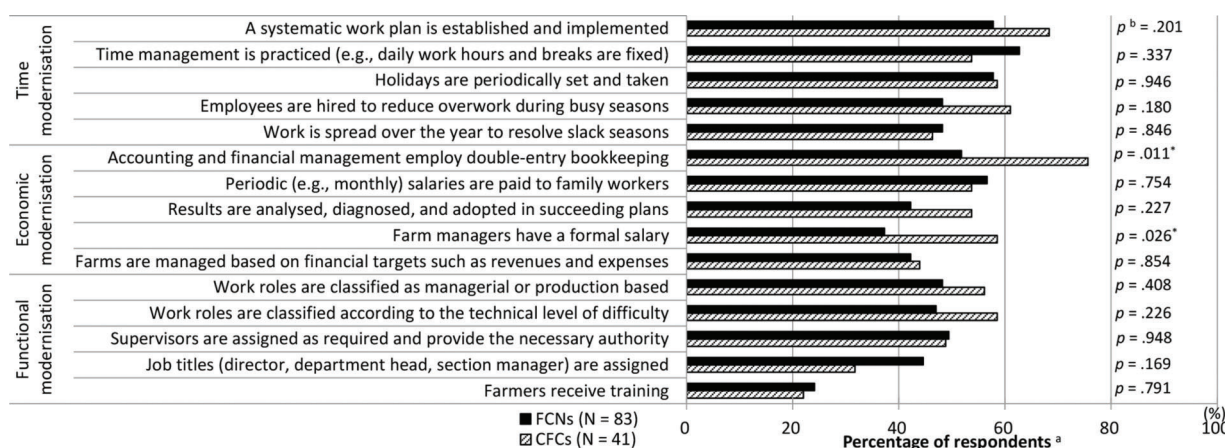


Figure 7: Achieving modernised farm management of sampled farms. a) The proportion answering with ‘yes’ to simple yes/no alternatives. b) Chi-square test was applied to the number answering with ‘yes’, and p represents the probability of the differences in each table. *denotes statistical significance at the 5% level.

reported a notably higher ratio of positive responses to job titles. As mentioned above, a human resource strategy is becoming more important to Japanese farms. However, it should be noted that only 20% of the two groups responded positively to training for farmers and that this gave rise to a gap between farm business strategy and on-farm practices.

In sum, the farms from the FCNs’ respondents were not modernised enough. This was caused presumably by the fact that they had less experience in the farming business and were less dependent on the farming business in terms of sales, compared to conventional farms. In the CFCs’ respondents, on the other side, an intimate relationship between farm business and household seemed to fade as farm management was modernised. Especially time and economic modernisation progressed because of work regulation and financial system being officially organised after the corporatisation of conventional farms.

6. Concluding remarks

Analysis of the sample data used in this study shows that farming companies emerging from the non-agricultural sector do not necessarily perform well. FCNs’ prominent entrepreneurship, ample hired labour and presumably ample capital would help boost their expansion. However, the average sales volume per employee in the FCNs, regardless of whether it is measured by mean or median, was much lower than that in the CFCs as demonstrated in Table 1. Therefore, the improvement of labour productivity and capital turnover may be further obstacles to the growth of the FCNs. In contrast, labour force, as well as farm investment, enhancement may be critical blocks that CFCs must overcome, rather than the improvement of labour productivity and capital turnover, to boost the expansion of their farm business. This has been a challenge for conventional family farms in Japan for a long time.

Also, our analysis of the survey data does not prove that farming companies emerging from the non-agricultural sector are managed better than conventional farms are. The FCNs’ respondents exhibited no high level of managerial capabilities, particularly of techniques involving experience and skill. It is true that most of the FCN respondents’ intentions were not tradition-directed or economy-oriented, but it was not as if only the FCNs’

respondents had business-minded intentions. The CFC respondents should be much less tradition-directed towards modern farm management. Overall, even farms from the FCNs’ respondents have not achieved the modernisation of farm management fully presumably because of their less experience in the farming business and less dependence on farming sales. The FCNs’ respondents were just inclined to have a stronger idea of ‘market-in’ for selling more profitable and differentiated products such as vegetables and fruits when compared with the CFCs’ respondents.

As we referred to the literature in the former parts of the paper, farm managers have to change their values, objectives and characteristics to develop further modern farms in a global setting. Nonetheless, there is a perspective that family farms would continue to be a dominant legal status of farms at least in Western countries because they face no current pressure of transforming into corporatised farms (Nuthall and Old, 2017). In the Japanese context, while the agricultural policy has increasingly encouraged the corporatisation of farms, the corporatised farms were not necessarily accompanied with the modernisation of farm management according to results of our analysis. A concern with human resources, such as the further development of the capabilities of farm managers and qualified staff, was common in both FCNs and CFCs. In essence, ideal farming companies always require human resources to organise and manage their business with modern farm techniques. In addition to the policy deregulating farmland use to various people, it is suggested that a political measure supporting educational and strategic investments in human resources will be helpful for Japanese farming companies to truly modernise.

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