【Paper】

Diversification and Survival Conditions of Family-run Farming in Japanese Context

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Abstract

In Japan, diversification of the forms of agricultural holdings has progressed, especially discussions on the characteristics of family farm and corporate type farm have been continued. However, there was a tendency to discuss the two as a conflicting concept, and it also left a challenge in discussing on an overall basis, including the farm by non-consanguineous producer groups. Therefore, in this paper, we presented a framework that can be seen in two phases: who owns and runs it and the relationship between agricultural management and maternal economy (household economy), based on the thinking of type of enterprise. From the former viewpoint, the category 'family-run holdings', or 'producer group-run holdings', and from the latter viewpoint, the category 'holdings with in household (non-corporate type)', or 'holdings independent from household (corporate type)' can be found. In order to distinguish the occurring change as a form, we set some subtype; traditional, modern, modern autonomous, by the degree of autonomy from the household economy. Then, we classify forms by combining two categories, discussing the characteristics, the process and factors of the change, and its advantages and restrictions on the overall category. Finally, we propose a framework to capture the sustainability of family-run holdings which are expected to possibly develop as well as many difficulties. Specifically, we will discuss the survival area for family-run holdings employing the "minimum optimal scale" (technology-based economy of scale) and "minimum required scale" (labor compensation-based economy scale which can secure the successor). It also discusses the condition that the survival area depends on agricultural market conditions.

1. Introduction

In the past, the types of agricultural holdings* were limited. Family-run farming was known as a “family farm”, and most such farms were in actuality nearly homogeneous in the types of enterprise**. However, in recent years, the breadth of the type of enterprise of family-run farming has expanded. Remaining focused on the conventional categories and misapprehending the actual state of farming, we will lose sight of a substantial part of the way things really are.

* “holding” refers to an entity who operate agriculture as a proprietary unit.

** “The types of enterprise” refers to the type of holdings as perceived based on economic characteristics, and also covers noncorporate entities.

In doing Family-run agricultural holdings (or "family-run farming") and corporate type agricultural holdings (or "corporate type farming") are contrapositioned and compared[1], in that case, considering what type of holdings in reality, what kind of status is to be discussed and contrasted, it is necessary to clarify the targets of the types and the locations of any problems. If these problems are discussed using the "family-run holdings" and "corporate-type holdings" phraseologies only, one will lose sight of various aspects of the actual state of affairs. The general concept of the traditional "family farm" referred to a trinity of ownership of farmland and other means of production, management, and labor force by a family, but in Japan that type is almost totally nonexistent. Most are family-run holdings that procure land, labor, and capital utility externally. In most cases in which these things are not procured externally, agriculture is not to the principle occupation of the household concerned. When using the term "family-run holdings" ("family-run"), it is important to elucidate what one has in mind when discussing this matter.

The conceptualization of "family-run holdings" and "corporate-type holdings" as standing in opposition to one another is very problematic in terms of the types of enterprise. The distinctions between family-run holdings and corporate-type holdings are positioned on separate coordinate axes, with some overlap between the two. They are not divided by operation scale. This paper was given the role of traffic control for these problems and organize the types of enterprise from a fundamental perspective.

2. Some materials pertaining to the general state of agriculture in Japan

Before diving into this thesis, we would like to concisely touch upon the situation in Japanese agriculture.

First of all, mountainous terrain comprises approximately 70% of the total surface area of Japan, with no more than 12% of the country being arable land.

As can be seen from the agricultural region segmentation in Figure 1, the principal at agricultural regions are Hokkaido, Tohoku, Kanto in the hinterlands of the Tokyo Metropolitan area, and southern Kyushu. However, in Japan, Tokyo centralization continues apace, and the economic foundations of these regions are in decline. On the other hand, rural areas in western Japan have any disadvantaged areas, and while not chief centers of agricultural pro-

[1] The terms "family-run agriculture holdings" and "corporate type agriculture holdings" refer to economic units or management units. Ever since the year 2000, the census has made a point of using the clearly defined term "agricultural holdings" and "family-run agricultural holdings."

duction, the role played by agriculture in the local economies is significant.

The core farmers are aging, with more than 60% being 60 years of age or older (Figure 2). Also, abandonment of cultivation is spreading, and half of abandoned land is land owned by

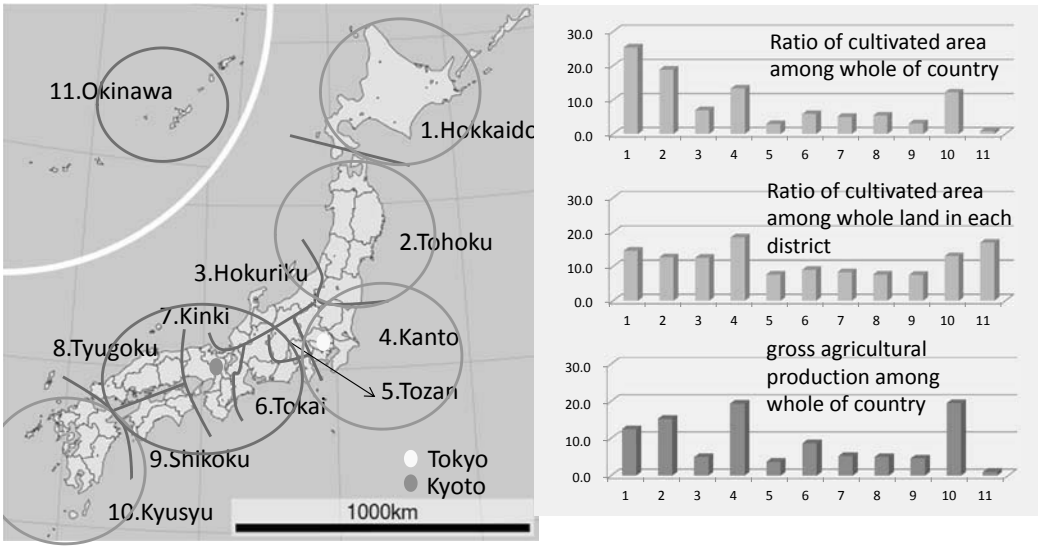


Fig 1. District of agricultural area

Note: Bluer circle means main farm belt where is that an economic base were weakened, red circle means including many less favored areas are agriculture has much to contribute to regional economy

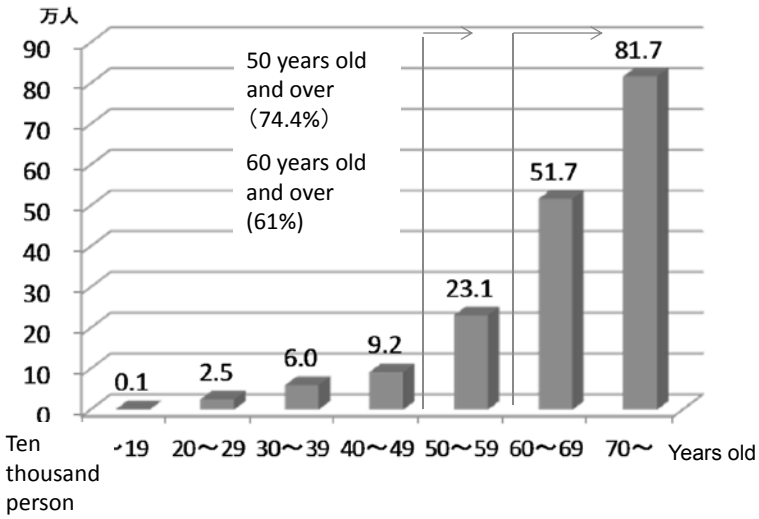


Fig 2. Age-based major farmer

Source: MAFF, Statistic of moving state of agriculture structure (recombination counting)
Note: “major farmer” means who mainly work in agriculture.

land-owning non-farmers (Figure 3).

Next, an overall image of the farmland owners, farmers, and agricultural holdings as seen from a statistical perspective is given in Figure 3. 35% of the farmland owners are nonfarmers, 23% are self-sufficient farmers, and 42% are commercial farmers. At present, anything that manages agriculture is surveyed by the census as an "agricultural holding." This combines "family-run holdings" (nearly all equivalent to commercial farmers) with other "organization-run holdings" (nearly equivalent to the holdings referred to as "producer group-run holdings" in this paper). Some of these enterprises are corporations and some of them are not. 98% of these enterprises are family-run holdings, and 2% are organization-run holdings (Table 1). Approximately 60% of the organization-run holdings are corporations, while the

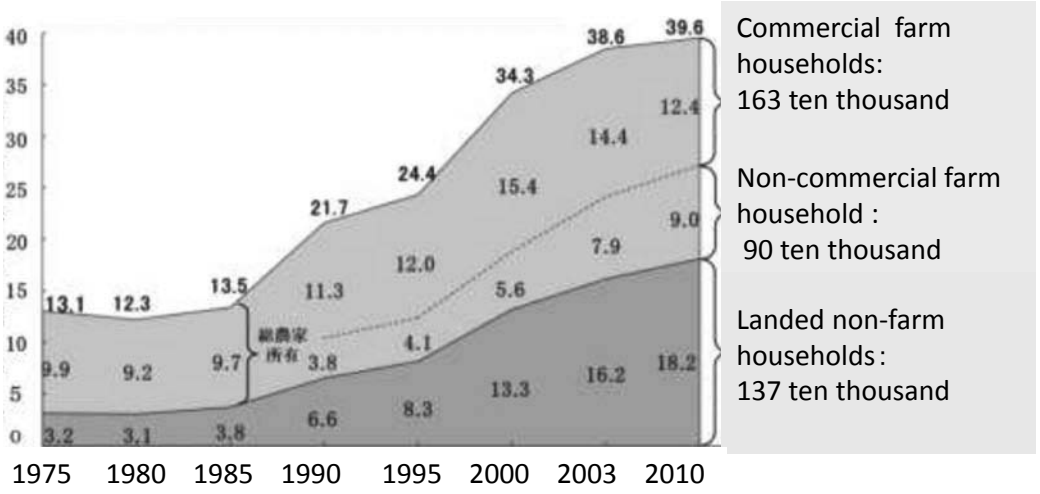


Fig 3. The abandoned cultivated land

Source: MAFF. Original is Census of agriculture and forestry.

Table 1. Number of bodes and share of agriculture holdings

	Number of bodies (thousand)	Share (%)
Family Agricultural management entity	1,648	98.2
Regal body	5	0.3
Non-regal body	1,644	97.9
Organization management entity	31	1.8
Regal body	17	1.0
Non-regal body	14	0.8

	Cultivated land (thousand ha)	Average (ha)	Rice field (thousand	Average (ha)
Family agricultural management entity	3,194.4	1.9	1,795.1	1.3
Organization management entity	437.2	14.1	251.2	19.5

Source: Census 2010

majority of the family-run holdings are unincorporated. Approximately 25% of these enterprises make use of part-time employment, while about 2% use full-time employment. Holdings with 5 ha or less of managed cultivated land area comprise more than 90% of the farms in the prefectures, but this figure rises to about 24% in Hokkaido, with those 30 ha or greater comprising more than 24%.

3. What is family-run holdings? What is corporate-type holdings?

Family-run holdings and corporate-type holdings are generally conceived as being defined on separate coordinate axes.

First of all, a corporation refers to holdings created separately from the parent body's household economy based on capital contribution. The contrary concept against this should be holdings operated within the parent body's household economy. (For the sake of simplicity, let us refer to these as non-corporate-type holdings/occupational holdings.) These two classifications are showed splitting into the right and left halves of the table head axis of Table-2.

On the other hand, family-run holdings are conceptualized from a perspective that seeks to determine who owns production factors such as capital and land and manages the operations; in these cases, family-run holdings are owned and operated by a family. The antithesis of this

Table 2. Overview of Deployments in Typical Types of Enterprise for Farming in Japan

	Dependent on or independent from household economy					
	Non-corporate (Linkage in personnel: non-investment) : Agriculture holding within household economy			Corporate (Linkage in capital: based on investment) : Agriculture holding indiendent from household economy		
	←unity 〈ownership, management and labor〉 separation→			*←low 〈separation of ownership, management and labor〉 high→*		
	1.Traditional	2.Modern	3.Modern autonous	Based on human trust		Based on capital trust
Who owns and manages ?	Combination of family labor, land and capital family owns	Procurement of labor, land and capital from market	Procurement of large amounts of production factors from market and autonomy from household economy	4.Human group ent. Binding of functional capital of few entrepreneur	5.Mixed group ent. Binding of functional capital + few equity capital	6.Capital group ent. Binding of functional capital + large amount equity capital
Family or relatives	A-1 Traditional family-run holdhings	A-2 Modern family-run holdhings	A-3 Modern autonomous family-run holdhings	A-4 Family-run corporate-type holdings	(A-5) Family-run coroprate- type holdings	(A-6) Family-run corporate-type
Producer group (Unrelated)	B-1 Traditional group-run holdhings		B-3 Functional group-run holdhings	B-4 Producer group-run corporate-type holdings	(B-5) Functional group-run corporate-type holdings	(B-6) Functional group-run corporate-type holdings

Source: Niiyama, Y., Concept of Family-run Holdings and Corporate Holdings, and Survival Conditions, *Agriculture and Economics*, Sept. 2014, Niiyama, Y. *The Types of Enterprise and Administration for Livestock Operation*, 1997, Nihon-Keizai-hyouronsya. Urabe, T. *Theory of the Types of Enterprise*, 1983, Hakuto-syobou.

would be a holding owned and operated by farmers group with no blood relation (i.e., function group-run holdings). These two are split between the upper row and lower row of the left side axis of Table-2.

Because in the past nearly all family-run holdings were occupational, simply referring to these as family-run holdings was not at all problematic, and as these were not a corporate-type holding, there was no problem in conceiving of family-run holdings and corporate-type holdings as antitheses of each other. However, even a holding is established based on capital invested by a family, and the family comes to manage that holding, the family-run holding could also be classified as a corporate-type holding, and the two concepts will overlap. In fact, an examination of who owns and operates corporate-type holdings reveals that the considerable part is run by families, as showed in Table 1. Also, in Japan, there is much joint operation of livestock by farmers and of rice farming in paddy fields by same community famers. The latter occupies a particularly important position in public policy. The types of these in existence include voluntary partnerships and company organizations.

In order to grasp the entire form of agriculture holdings as described above, a table head axis perspective that seeks to determine whether the holdings are operated within or independently/separately from the parent body's economy and a table side axis perspective that seeks to determine who owns and operates the elements of production are necessary, as shown in Table-2. If the true state of affairs is comprehended in this manner, one can see that family-run holdings and producer group-run holdings extend from non-corporate-type holdings to the domain of corporate-type holdings. When discussing the limitations and possibilities of "family-run holdings," a great difference in the discussion is created depending on whether one is discussing the traditional family-run holdings or the modern family-run holdings that are the non-corporate-type holdings, or whether one includes the possibility of forming a corporate-type holdings with investments of capital and having it run by a family/relatives.

1) Family-run holdings as an occupational holding (managed within the household economy of the parent body)

Occupational holding refers to management within the household economy of the parent body and is part of the income aspects thereof. The prototype for this is the A-1 (Table-2) managed based on the land, capital, and family labor force owned by the family household. This is expressed as a schematic diagram in Figure-4A1. This type is made up of the 3 aspects of ownership, management, and labor and is prototypical of the family-run holdings. Describing this as a "traditional family-run holdings" is beginning to take hold.

On the other hand, almost all the agricultural holdings that intend to sell their produce pro-

curement the utilities of the principal production factors from the market (Figure-4A2). These can be distinguished from A-1 and instead referred to as A-2 “modern family-run holdings.”

Further, as the scale of operation increases in size, the autonomy of its management and accounting units is heightened, which results in greater autonomy in the management of households (Figure-4A3); thus, these have been designated A-3 “modern autonomous family-run holdings.”

In the development of A-2 and A-3 as described above, there is no change to the fact that agricultural management is one aspect involved in the income of the household for both types. The goal of management is to cover the cost of living for the family, and common to all these is the fact that management net revenue will become the income of the household (Table-3). On the other hand, there are differences in business administration systems (Table-3). In “traditional family-run holdings,” agricultural accounting and livelihood are not separate. Agriculture is dependent on empirical technique, and the allotment of roles for agriculture is entrusted to family relations. In “modern autonomous family-run holdings,” agricultural managerial accounting and livelihood are separate, and management through figures/

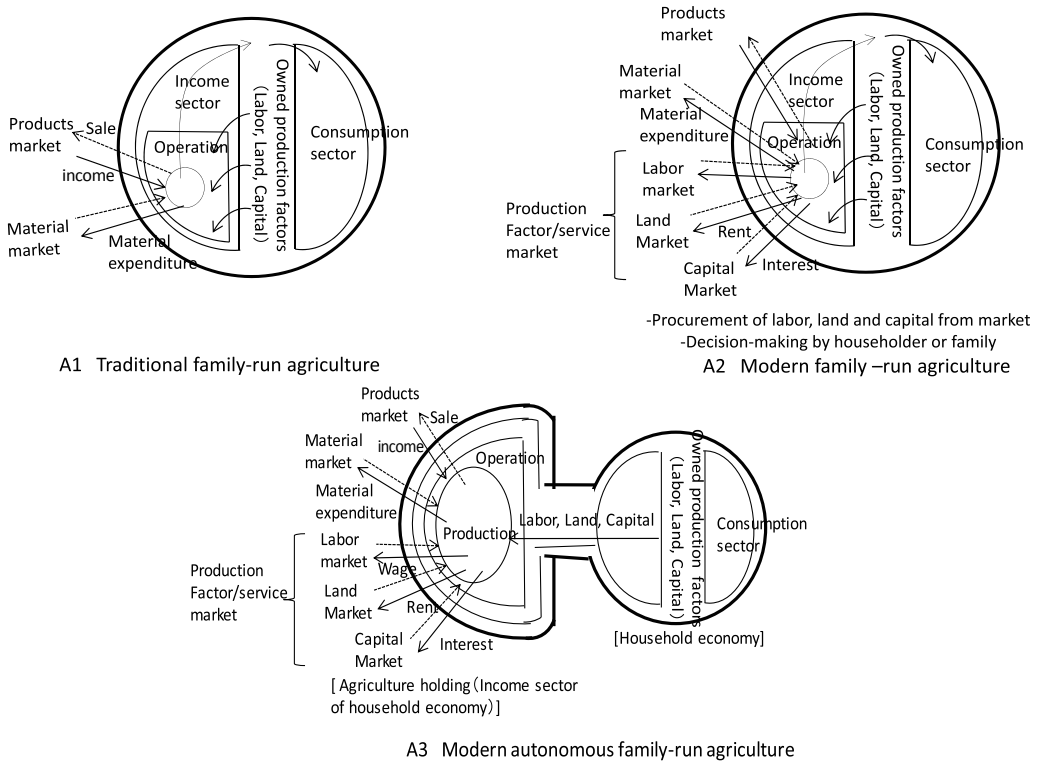


Fig 4. Schematic diagram of agricultural holdings (A1, A2, A3)

Source: made by author based on Otsuki (1997) about fig. 4

Table 3. Characteristics of family or relatives group-run holdings

Type		A-1 Traditional family-run holdhings	A-2 Modern family-run holdhings	A-3 Modern autonomous family-run holdhings	A-4 Family-run corporate holdhings
Structure		Combination of family labor and land and capital family owns	Procurement of labor, land and capital from market	Procurement of large amounts of production factors from market and autonomy from household economy	Binding of functional capital of few entrepreneur
Managerial goal		For income for living of families ～ non-economic goal (for fun)	For income for living of families	For income for living of families	Capitalization
Management system		Non-separation of accounting for farming and for family	⟷	Separation of accounting for farming and for family	Established accounting management（sometimes borrowing and lending from/to household）
		Empirical technique	⟷	Management through figures、budgetary control	Management through figures ～ total management
		Family-oriented sharing roles	⟷	Division of farming labor based on the categorizing of tasks	Separation of command-and-control and direct labor
Other		Land, capital are transferred stem family by inheritance			Stock is divest by inheritance
The picture of items	Crop farming	Self-consume farming、post-retirement farming（sale at farmer's	Commercial farm households	A part of commercial farm households？	A part of rice and vegitable farmings, many greenhouse horticulture and flowers and ornamental plants operator
	Livestock	—	Many caw/cafe operation, dairy farming	Many cattle feeding, dairy farming	Many cattle feeding, pig farmig, egg farming, poultry operations

Source: Niiyama, Y., Concept of Family-run Holdings and Corporate Holdings, and Survival Conditions, Agriculture and Economics, Sept. 2014, Niiyama, Y. The Types of Enterprise and Administration for Livestock Operation, 1997, Nihon-Keizai-hyouronsya.

budget control for agriculture are performed. Full-time employees are introduced, and roles are assigned to match the task. “Modern family-run holdings” fall somewhere in the middle.

2) Human group corporations and family/relative corporate-type holdings in corporate-type holdings

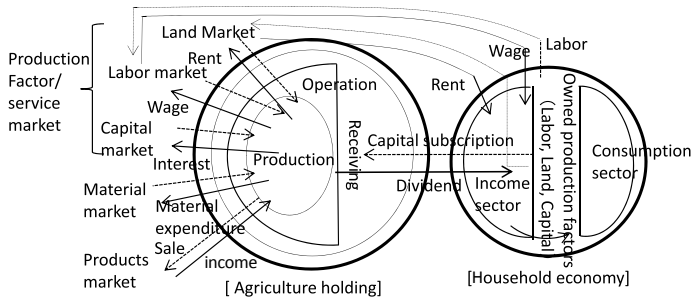
We have described above that corporate-type holdings are separate from the household economies of the parent bodies and established by means of capital investment. There is a considerable range in the economic natures of corporate-type holdings, but in debates in farm management studies, it may be the case that corporate-type holdings are all lumped together with no awareness of their differences. Further, it may be the case that the prototypical image of the corporate-type holdings is that it is managed by means of a stock companies (capital group corporations) based on capital trust binding of functinal capital and large amount equity capital (B-6, Table-2). However, these are unexpectedly few in number even among food product corporations.

Because invested capital is the foundation of corporate-type holdings, they are capital bonds but, per the principles of business administration studies, differences in the natures of

those capital bonds require examination. Even if investment of capital on the part of functional capitalists with the goal of starting a business (human group corporations based on human bonds) or a little equity capital is added with the goal of distributing dividends (mixed group corporations), these capital bonds are still based on a foundation of human trust. When a wide range of equity capital is combined by stock offering (capital group corporation), it is based on a foundation of capital trust (Urabe, 1983).

Corporate-type holdings started by farmers never transcend the bounds of human group corporations even if they are large-scale management operations. Upon examining who invests (owns) capital and manages the entity, for livestock, crop, greenhouse, it becomes apparent that there are many "family/relative corporate-type holdings" A-4 that developed from A-3 (Figure-4 A4). In order to obtain social recognition and trust, there has been an increasing number of cases in which farmers who intend to specialize in agriculture register as corporations with the same sort of operation scale and employment (i.e., whether there is one or no full-time employee) as A-3. Management goals take capital revenue into consideration. In business administration, accounting management is established, and management through figures is performed for production and sales. If the scale of the holdings becomes large, command/control task and direct working labor are separated (Table-3).

In this way, even food product corporations are human group corporations, with "family/relative corporate-type holdings" (A-4) for which capital is owned by the founders or the families thereof who also run the business are overwhelmingly many in number. There are many outstanding companies of this type that are the firms established a century or two ago in the Kyoto-Osaka-Kobe area. Also, in the capital group corporations (corporations with stock offerings), there are many family/relatives corporate-type holdings (A-6) for which most stock is owned by the family/relatives. Also, there are many cases involving func-



-Establishment of holding by capital subscription from a household economy
-Supreme decision-making by capital investors of families

A4 Family-run corporate farming

Fig 4. Schematic diagram of agricultural holdings (A4)

tional groups run corporate-type holdings (B-6) are in which the management of an A-6 was removed from the control of the founder. B-6 that are functional groups from the time of founding are limited to corporations of cooperative origin.

In Japan, perhaps because being listed in the stock market is considered as something that represents the status of a corporation, there is a tendency for corporations to be regarded as exactly the same as corporations with stock offerings, but this is not actually the case. Overseas, corporations with stock offerings positioned as a totally separate existence, and in the EU this is also established by company law. Even huge transnational corporations like Cereal Major are privately owned and family managed. In this case, regardless of the size of the social influence of the company, the fact that it is not a stock issuing corporation means that it has no obligation to publicly announce its finances, which in turn gives rise to a lack of transparency in its business and management. Also, agricultural cooperative enterprises in included B-4 are the top ranked food product corporations.

3) Producer group holdings

Agricultural holdings operated by a group of producers is unique in the world of agriculture. In Japan, in particular, village community-based farming organizations that are tied by being a member of the same community are a representative example of this. In the past, traditional collaborative management in which all the farmers of a village took part was practiced. At present, even if all farmers in the community constituents the members of the organization, the organization has a dual layer structure for which an operator group is created to run machinery, and there are many types that are close to “functional producer group-run holdings.” There are also many examples in livestock farming in which multiple operators and their families performed collaborative operation separately from their own holdings. Regardless of their scale, these had a high degree of independence from member's household, so it is likely best to apprehend them as B-3 “functional producer group-run holdings” (Table-4). The formation of traditional group-run agriculture (B-1) was promoted as a political policy in the 1960s to promote small farm ownership as it gives rise to efficiency. Today's village community-based farming (B-3) was promoted as policy in regions where the number of farmers has diminished due to the aging of society and deepening of the practice working in other industries. The goal of management of B-3 is to generate income for the constituent producers, and business administration is the same as that for A-3 (Table-3).

Many “producer group-run corporate-type holdings” B-4 (Figure-4B4) in the field of livestock have been developed from B-3 (Agricultural Business Association Corporation), with a greater share than that for cultivation. Also, the average scale is great (Table 5). They have

management goals and business administration in common with A-4, but thanks to investments and management by multiple producers, the scale of operation is greater than that for A-4, with business diversification continuing apace and much hiring taking place, which is consist with company form. Progressive management and general management that integrates

Table 4. Characteristics of functional group-run holdings

Type		B-1 Tradirional group-run holdings		B-3 Functional group-run holdings	B-4 Producer group-run corporate-type holdings
Structure		Combination of family labor and land and capital family owns		Procurement of large amounts of production factors from market and autonomy from household economy	Binding of functional capital of few entrepreneur
Managerial goal		For income for living of member families		For net earnings	Capitalization
Management system		Non-separation of accounting for farming		Separation of accounting for farming and for family	Established accounting management
		Empirical technique		Management through figures、budgetary control	Management through figures ～ total management
		Family-oriented sharing roles		Division of farming labor based on the categorizing of tasks	Separation of command-and-control and direct labor
Other					
The picture of items	Crop farming	Traditional cooperate faming baed on whole community until 1970s		Community based farming (rice and wheat)	Community based farming (rice and wheat)
	Livestock	Traditional cooperation until 1970s		Group operation (cattle feeding, dairy farming) (have considerable share)	Many cattle feeding, pig farmig, egg farming, poultry operations (have over half production share)

Source: Niiyama, Y., Concept of Family-run Holdings and Corporate Holdings, and Survival Conditions, Agriculture and Economics, Sept. 2014, Niiyama, Y. The Types of Enterprise and Administration for Livestock Operation, 1997, Nihon-Keizai-hyouronsya.

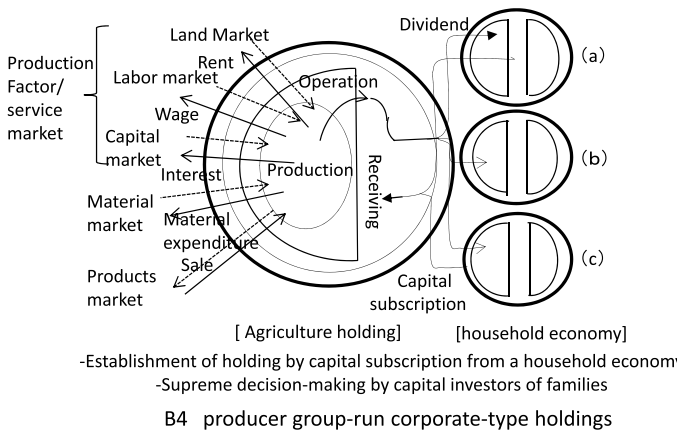


Fig 4. Schematic diagram of agricultural holdings (B4)

physical management and value management with, has been incorporated into livestock for much improved business administration (Table-3). In crop cultivation, almost all village-based farming organizations of B-4 are of the capital investment type. These often have a double layered structure with investors and an operator group that performs work and management.

Table 5. The share of "non-agriculture-household entity" in the field of livestock(Census 1990)

	Dariy farming	Cattle farming	Pig operation	Egg farming	Poultry operation
Number of total agricurture entity (thousand)	429	908	796	926	228
Share of total agricurture entity (%)	0.8	0.5	2.4	22.9	—
Sare of total livestock (%)	3.0	15.2	29.4	52.2	45.3
Composition ratio of agricurture entity (Livestock) (%)					
Cooperating corporation	46.5	24.7	12.7	12.8	6.7
Corporation	22.7	40.7	77.0	85.0	92.2
Others*	30.7	34.6	10.4	2.2	1.1
Average of Livestock (head、thousand hen)	140	416	4,178	943	8,355
Cooperating corporation	152	319	2,604	673	3,655
Corporation	77	453	5,058	1,047	9,428
Others*	276	473	2,690	372	3,075
Reference: average of livestock in commercial farm (head、thousand hen)	33.2	10.2	251.3	25.6	-

Note: * "Others" including agricururl cooporaion-run, etc.
Since this classification is until 2005, reclassification tabulation is necessary to know recent trends.

4. How should we consider the advantages and limitations of family-run holdings?

There are advantages and disadvantages to any type of corporate form. Based on their conclusions, it is not conceivable that as you progress from left to right in the corporate forms of Table-3 (that is, the further you go to the lower right away from family-run holdings) the forms become superior. As we have already seen, for family-run holdings and family/relative management, there is some overlap between noncorporate-type holdings and corporate-type holdings. In agriculture, they exist in a range from A-1 through A-4, and in the food products manufacturing industry, they exist in a broad range from A-1 through A-6. When discussing the advantages, disadvantages, superiority, and limitations of "family-run holdings", it is important to identify what type is targeted and what to discuss about it, and what type to be compared to. The same is also true for "corporate-type holdings."

1) Operating scale and the types of enterprise

There tends to be a relationship between management scale and the types of enterprise, but this is not absolute. When attempting to expand scale, it is possible to expand the ownership volume of production elements, and provided labor-saving technological innovations

continue to progress, the scale at which can continue to exists as the A1 will grow. In Japan, no progress is made on the expansion of farmland owned by agricultural holdings; instead, utilization of farmland is procured externally by means of leasing or subcontracting, and substantial external funds are introduced, so when the scale expands the types of enterprise transitions from A1→A2. When the scale of management becomes large, it becomes more and more independent from the parent farmer economy in terms of business management and accounting, and its changes from A2→A3. As the scale continues to expand, the types of enterprise will transform, and not the reverse. Further, in order to establish autonomous management, the holdings will separate from the management of the parent farmer economy and opt to establish management grounded in capital investment (A4), but in fact this decision not only increases the scale of agricultural production; there are also many cases in which it sparks expansion in commercial fields such as processing agricultural products and foods, product sales, and restaurants.

In Europe and the USA, the scale of farmland ownership is great, and there is little expansion to other industries, so it may be the case that there are many instances of heightening autonomy of management in a way similar to A2 without transitioning to A4.

2) Business administration

The scale determines the state of business administration. If the scale of the production elements becomes large, in the process in which these elements are combined, to carry out production physical controls (production controls) and value controls of imput and output calculations (budgeting, cost price, funds controls) become indispensable, and their increased sophistication is also essential. Because of this, there is a tendency to plot a transition from business administration aspects to the autonomous A-3 type concomitantly with the expansion of scale.

Changes to the A-4 type that separates management from the economy of the parent household to not involve only expansion of the scale production, but also strongly consider diversification of business into related fields as described above. Reporting line, division of labor roles, decision making systems, wage systems, and accounting systems that are part of business administration are easy to establish for holdings that is grounded in capital investment. Even for corporate-type holdings, B-4 with its functional group management is superior to A-4 with its ease of incorporating family relations into business administration. However, even for A-4, considering that a long-lasting or gigantic corporation exists in various fields including food, management will be refined even for family/relative management, and business administration can become more sophisticated.

3) Efficiency, scale, and capital strength

It is not necessarily the case that the bigger the scale, the better. If the scale is economical, being closer to the minimum optimal scale will result in the achievement of technical efficiency and can be advantageous in terms of cost. However, if the minimum optimal scale is exceeded, the holdings will become inefficient, resulting in an increase in costs. The minimum optimal scale is not something that drastically increases. The reasons for this are: 1) it is impossible to surpass technological progress; 2) the products of agriculture are organic, and their production process is dependent on the growth of living things; and 3) in Japan, there are restrictions on the shape of farmland due to the dearth of level surfaces. As a result of these factors, there is a limit to the degree of agregation time and space limitations in production. If the minimum optimal scale is not that big, the holdings will not be advantageous especially in comparison with modern family-run holdings within agriculture, even if non-agricultural corporations with capital strength become involved. It is said that even if economy of scale is achieved at the factory unit, it is often not achieved at the corporation level (i.e., even if the number of factories increases, no economy of scale is demonstrated).

Also, the minimum optimal scale is the scale to which management should aspire, and even if it is not achieved, that scale and management type should be regarded as sufficiently satisfactory for society provided that quality and production efficiency that are optimal for society are ensured.

4) Risk response, manager's ability, capital strength

It may be the case that in agriculture non-corporate-type holdings have the best risk absorption ability. For corporate-type holdings it is easy to put in place multiple managers and improve the ability of the management. On the other hand, in agriculture the quality and quantity of produce is affected by the climate and weather and market conditions are prone to fluctuations such as rises in the prices of raw materials or declines in the prices of products. Consequently, agriculture carries a high risk of having its profits and losses being affected by these factors. However, in corporate-type holdings, if many employees are hired, it is impossible to reduce wage payments as this would be wage labor. There is no buffer against bankruptcy. Diversification of business increases opportunities for revenue while embrac it has inexperienced risks. A corporate-type holding cannot continue to exist if it does not have an extremely high ability to respond to these risks. On the other hand, in the case of unincorporated family-run holdings, owing to the accounting structur, family labor compensation is included in the remainder of income - payment expenses; therefore, it is possible to trim down on the compensation, and even if it is diminished it will not be immediately

dismantled the holdings. This explains the resilience of unincorporated family-run holdings, but it is a double-edged sword, and if it becomes permanent, it is said to amount to a state of self-exploitation.

Even for food product corporations, it is not possible to make a blanket statement that great capital strength is an advantage in responding to risk. For stock exchange listed companies, fluctuations in the stock market themselves are a strong risk factor. A fluctuation of one yen can have a major impact on management, and management trends will be influenced in those places where management controls do not extend.

5) The relationship between the local community and regional resources

Agriculture uses the resources specific to a region such as farmland and rivers and is the basic industry of a region, and through these things it gives shape to the foundation of social relations in that region. If agriculture is successfully maintained while embracing the various above-mentioned risks, they will be preserved and maintained. It is easy to associate being a management holding that faces risk tenaciously with the preservation of said holdings. Also, being family-run holdings and producer group-run holdings that live in the community, or that maintains a foundation of human trust even in corporate-type holdings interrelates with awareness of ethical responsibilities to the region. Even when nonagricultural capital becomes involved in the agriculture business, it is highly possible that regional industry will become anchored, and it has been reported that when publick-listed corporations operated nationwide become involved, the deterioration of the situation can easily lead to withdrawal.

As noted above, no blanket statements can be made about the advantages and disadvantages of the types of enterprises in agriculture. However, at the very least, efficiency is dependent on the special characteristics of organic production, and because of this unincorporated modern family-run holding are recognized as having a substantial advantage. If a certain degree of efficient scale can be achieved, traditional family-run holdings also likely have this advantage. Human relationships are important aspect of responsibility to preserving regional society and regional resources. In the field of agriculture, with respect to corporate-type holdings human group corporations built on a foundation of human trust are recognized as appropriate. In Japan, agricultural policy promotes the expansion of corporate-type holdings, and while these enjoy considerable managerial talent they also have heightened risks, so it is probably best to leave their choices up to their individual discretion and avoid promoting anything through policy.

Irrespective of the situation surrounding the aforementioned corporate morphologies, in Japan the survival of the modern family-run holdings is difficult, but the cause of this is not

the types of enterprise, but rather managerial environment conditions, in particular, the state of the market where discretion is difficult for individual holdings.

5. Market environments reduced to territories in which modern family-run holdings continue to exist - Minimum optimal scale and minimum required scale

In recent agricultural management in Japan, even in the “minimum optimal scale” that is most efficient from an “economy of scale” * perspective, it is possible that in terms of revenue the “minimum required scale” capable of securing the successors necessary for the continued running of the business has not been attained. The cause for this can be found in product markets and production factor markets conditions that exceed the range of discretion or effort to be found in that holdings' management.

*Economies of scale, as is well-known, refers to the introduction of technology with high efficiency becoming possible due to the expansion of scales, creating a cost-cutting effect for each product. Production expands to the scale (minimum optimal scale) in which costs on a long-term average cost curve are minimized.

In order for the business to continue to run, production factor must be repeatedly procured, but in cases of management such as that for agricultural holdings, this will be constrained by the procurement conditions of the rarest factor and is dependent on whether sufficient revenues can be earned to cover those procurement costs. It is believed that the scale in which it is possible to procure one unit of that rarest factor is the “minimum required scale” necessary for the survival of that business (Niiyama 1997).

In the past, the rarest such factor was farmland, but now it is a labor force that specializes in agricultural work (or successors). Successors to agricultural holdings have a high degree of freedom in selecting opportunities for employment, so for agriculture to be a viable option, at the very least it must be possible to secure compensation for labor (agricultural income) competitive with the average wage levels in other industries, and the scale in which this is possible is thought to be the minimum required scale.

The minimum optimal scale must be greater than the minimum required scale, and it can be said that there is a great deal of room for the survival of the business when there is a wide distance between both scales. Revenues are dependent on operating efficiency and product or production factor price levels. Even if the technically optimal scale is achieved, product price level drops or factor price level increases will reduce profits and lower compensation for la-

bor, and greatly increase the minimum required scale to satisfy the average income standards of other industries (Figure 5).

Until now, at scales of 80 heads of caw or greater, dairy farming had family labor compensation per person that exceeded the average wages in industry; thus, the minimum required scale had been attained (Figure-6a). Upon examining costs on a scale by scale basis, it seems that scales of 100 heads of caw or greater are equivalent to the optimum minimal scale (Figure-6b). In this way, there was a fixed area in which dairy farming can continue to ex-

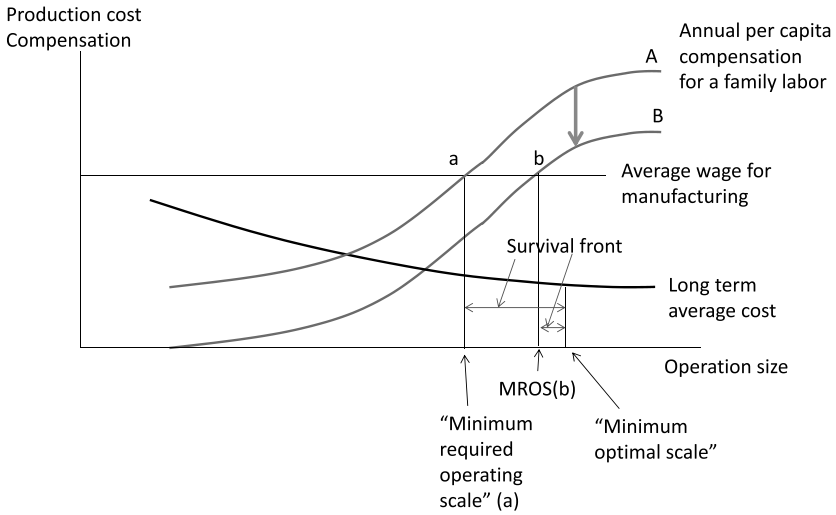


Fig 5. Minimum optimal scale and minimum required operating scale; the front in which farming can survive

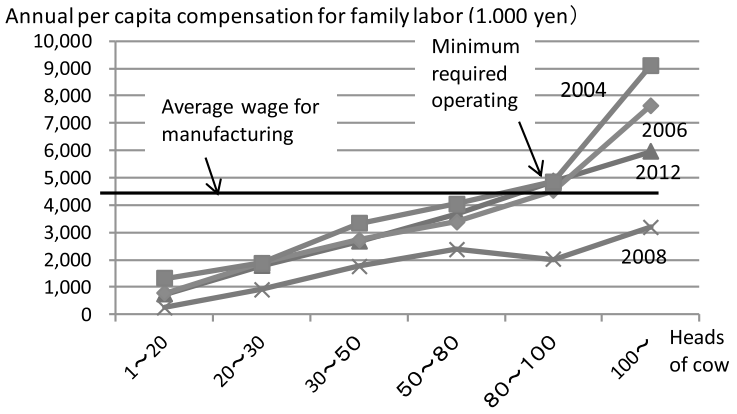


Fig 6-a. The annual per capita compensation for family labor of dairy operation and average wage for manufacturing

Source: *Investigation of Livestock Products Production Cost*, MAFF

ist. However, in 2008 even at this level labor compensation fell dramatically below average wages for the manufacturing industry. The cause of this deterioration was, when milk prices continued to decline, that an increase in production expenses such as that for feed that could not be passed to products price (Figure-6c). The government called for consideration to be given to the industry, and for the 1st time in 30 years finally raised retail prices and producer milk prices.

In the rice farming, it seems to be the case that 15 ha or greater is the minimum optimal scale (Figure-7b), but the production cost data is hard to grasp. At least, in the range of scales in production cost surveys, when factoring for family labor compensation per person the minimum required scale cannot been reached (Figure-7a). If policy benefits were factored

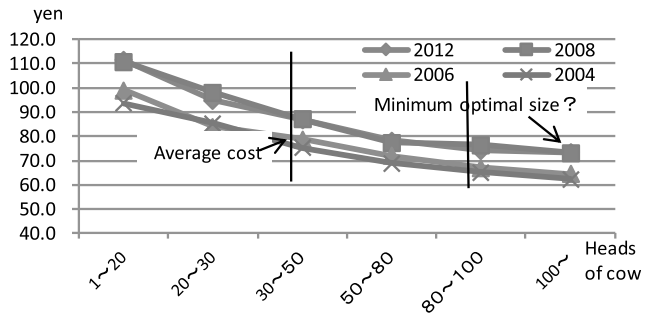


Fig 6-b. Average cost of raw milk per kg by dairy cow size (corresponding value by amount of milkfat 3.5%)

Source : *Investigation of livestock products production cost,* MAFF

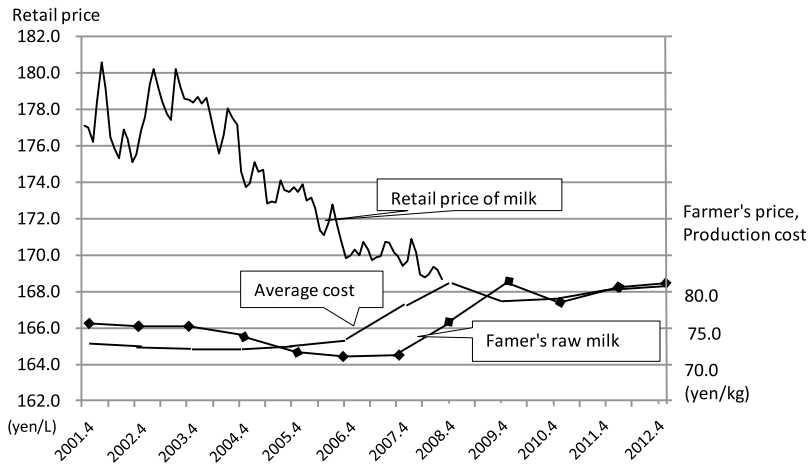


Fig 6-c. Retail price of milk, farmer's price and production cost

Souce: Trend of Retail Price, Agricultre & Livestock Industries Corportion, Investigation of Livetock Products production cot, MAFF

into this income, there were at last some years in which the scale was achieved. Average rice price is below average cost (Figure 3c). This was greatly affected by the price of rice and the state of policy benefits, and it is difficult to determine from statistical data whether the ex-

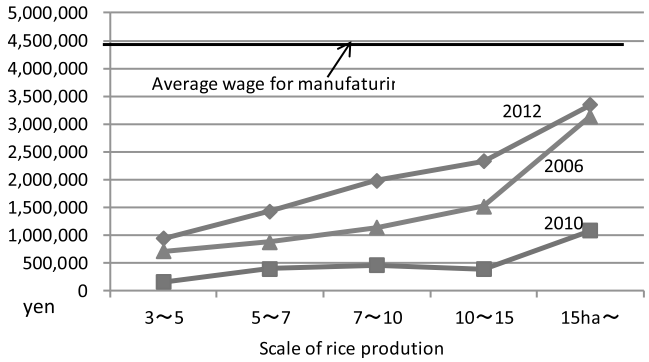


Fig 7-a. The annual per capita compensation for family labor of rice farming and average wage for manufacturing

Source: *Investigation of Rice Production Cost*, MAFF
Note: percentge of number of gricultural holdings; 3~5:90.7%, 5~10:3.1%, 10~15:0.9%, 15~2%

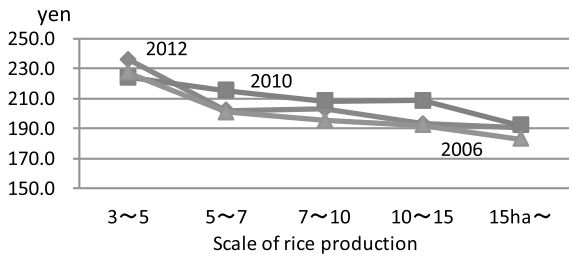


Fig 7-b. Average production cost of rice per kg by rice production size

Source: *Investigation of Rice Production Cost*, MAFF

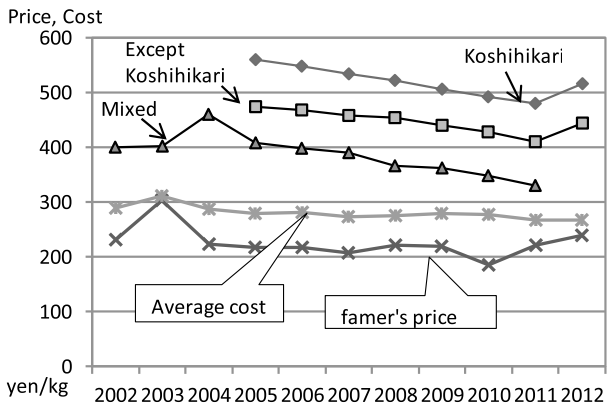


Fig 7-c. Retail price of rice, farmer's price and production cost

Source: *Investigation of Rice Production Cost*, MAFF

panded scale of production will secure the survival of the business.

In this way, the "survival front" in which the business can continue to exist is determined by the state of produce prices. Amid such a state of affairs, the only way to avoid going out of business is to cut compensation for labor and try to endure. Even for efficient holdings that are close to the minimum optimal scale, there has been an increase in the number of farmers who are hesitant to pass their business onto a successor, and the survival of efficient operation is in jeopardy.

6. The survival of agricultural holdings and the role of agricultural policy - Constructing management environments/fair markets

The survival of today's agricultural holdings in Japan as outlined above is dependent on market conditions that lie outside the discretion of their management, and if only the suitability and improvement of the types of enterprises is discussed, it will be impossible for the businesses to continue to exist.

For the industries that supply necessities for society, the arrangement of conditions that allow for the survival of business provided that a reasonable effort is made in a social sense is indispensable, and it is the role of the state's policy to make full use of all policy methods to put these conditions in place. Particularly important is the maintenance of good competition conditions in the market.

Generally speaking, as long as the business is not an enterprise with dominant market power such as an oligopolistic corporation, it is difficult for production companies to work on and change to external environments like the product market and production factor market to reform.

In the domestic market measures to ensure fair transactions between buyer and seller are necessary. A countermeasure for handling surplus agricultural produce is indispensable, but the price conditions are not settled with the supply/demand balance alone. From the perspective of industrial organizational theory, to ensure effective competition, it is necessary to constantly monitor the states of the seller industries and buyer industries, and the power to control the market at play between them. In the agricultural products and food product markets, the buyers (retailers) have become conspicuously large, and are using their strong market control power to promote intense price destruction of fresh food products. Rice and milk prices are so low that they can't even cover the average production costs (Figure-6c, 7c), in this way, that state of transactions do not allow for the survival of agricultural holdings that

makes socially reasonable efficiency is clearly unfair. This is the number one cause of the narrowing of the area in which business can continue to exist. In Europe, the European Commission has taken up price monitoring and prevention of unfair business practices and has a common agricultural policy that aims to bolster negotiating power through the organizing of producers.

In addition to that, even in Europe and the USA, adopted income compensation policy, without it, market prices will prevent the survival of businesses. Both Europe and the USA have switched to a price support policy and have adopted a strong income security policy. The flipside of this is that international market prices are not resulting from free competition. Improving competitiveness of management is important, but that alone is not the condition for a business to subsist. When exposed to international competition, making sure that the conditions of competition are arranged to be equivalent is an important role of the state.

Addendum: The way of apprehending each the types of enterprise and the special characteristics of business management are based on Niiyama (1997), and the area in which businesses can continue to exist is based on Niiyama (1997, 2011, 2011). Gasson and Errington (1993) argued that there are two trends in the genealogy of the concept of family agricultural management, one based on the nature of the workforce and one based on ownership and management by the family. They developed the theory in the latter position, and this paper is also close to that.

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