Exploring the possibilities of creating shared value in Japan’s urban agriculture: using a mixed methods approach

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Abstract
The purpose of this research is to clarify the mechanism of creating shared value in Japan’s urban agriculture by focusing on the cognitive innovation of social entrepreneurship and urban residents’ cognition and behavior toward urban agriculture. Specifically, we introduce a mixed methods approach by integrating a multiple case-based qualitative exploration method for clarifying the cognitive innovation of social entrepreneurship and a quantitative sociological approach to the authors’ original questionnaire for analyzing the urban residents’ cognition toward urban agriculture. The following results are obtained from our empirical analysis. First, the results of latent class analysis clarified that diversified cognition and behavior toward urban agriculture are existing in urban residents. Second, the results of case analysis clarified that social entrepreneurs with radical cognitive innovation and gradual cognitive innovation are able to solve social problems and enhance competency through urban agriculture with stakeholders. However, social entrepreneurs fallen into social dilemma of cognitive innovation should pay more attention to organizational learning while involving residents in urban agriculture. Policy implication drawn from the above-mentioned results suggests that a system change may happen when urban agriculture in Japan becomes more familiar to general urban residents through collective social entrepreneurship.

Keywords Urban agriculture · Creating shared value · Mixed methods approach · Latent class analysis · Multiple case-based qualitative exploration method · Cognitive innovation · Japan

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1 Introduction

In recent years, the Law on Green Production Land has been amended in 2017 and the Law Concerning the Facilitation of Leasing of Urban Farmland has been enacted in 2018 for the development of business and the fulfillment of multiple functions of urban agriculture in Japan. Urban agriculture includes different forms of business in Japan, such as experience farms/allotment gardens, off-market distribution such as direct sales and school meals, disaster prevention cooperation farmland, green areas/waterside spaces in urban areas, etc., and many of them are considered to have the function of positive externalities. Furthermore, new movements such as plant factories and rooftop farms that are not dependent on urban farmland are appearing.

Comparing agriculture in urbanized areas with that of Japan as a whole, the share of the number of agricultural management entities is 10.2% (MAFF 2020). However, since the share of agricultural land in the urbanized area is only 1.5%, the scale of cultivated land for agricultural management in the urbanized area is small. On the other hand, agriculture in urbanized areas is carried out by taking advantage of the location characteristics of being close to a large number of consumers, the share of agricultural output value in the whole country accounts for 6.8%. Furthermore, looking at the characteristics of urban agriculture from the sectoral composition of agricultural products, the proportion of vegetables is extremely high.\(^1\)

According to the results of a questionnaire survey (see Sect. 3 for the details about investigation method) conducted by the authors on metropolitan residents, although multi-functionality of urban agriculture is evaluated by about 70% of the residents as shown in Table 2 in Sect. 3, only about 10% of them have actually experienced urban agriculture (see Fig. 1). In addition, ‘weakening of local communities’, ‘deterioration of natural environment’, ‘lack of measures against natural disasters’, ‘decline of local traditions and culture’, ‘lack of employment opportunities’, etc. are raised as the social problems in metropolitan cities (see Fig. 2).

Therefore, to contribute to the formation of a favorable urban environment through the stable continuation of urban agriculture and the exertion of multiple functions, the purpose of this research is to clarify the mechanism of creating shared value in Japan’s urban agriculture. Specifically, we will focus on the cognitive innovation of social entrepreneurship and the cognition and behavior of urban residents toward urban agriculture. In addition, we will draw policy implications for Japan’s urban agriculture based on the analytical results.

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\(^1\) See MAFF “Statistics of Agricultural Income Produced Statistics (2018)” and “2018 Agricultural Output by Municipality (Estimates)”.

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2 Literature review and research framework

2.1 Literature review

2.1.1 Multi-functionality of urban agriculture and social entrepreneurship

According to UNDP (1996), urban agriculture is a large industry consisting of many small-scale farmers and some large agribusinesses. Urban agriculture takes place on
smaller tracts of land than rural farmers’ fields and on open spaces that are vacant, idle or unsuited for urban development. Although the most common site is the household plot, urban agriculture can be found throughout the metropolitan area. A large-scale operator may rent 10 hectares in an industrial zone. A small-scale farmer may make a living on as little as 200 square meters. A household garden may cover 20 square meters or less. Urban agriculture can be defined as an industry that produces, processes, and markets food, fuel, and other outputs, largely in response to the daily demand of consumers within a town, city, or metropolis, on many types of privately and publicly held land and water bodies found throughout intra-urban and peri-urban areas (Smit et al. 2001). In short, it is the practice of cultivating, processing, and distributing food in or around urban areas (Bailkey and Nasr 2000).

Multi-functionality of agriculture is the term used to indicate generally that agriculture can produce various non-commodity outputs in addition to food (OECD 2000), which is composed of economic, environmental, and social aspects. In addition, Artman and Sartison (2018) conducted a systematic review of studies on urban agriculture after 2010 (166 editions mainly on developed countries in the Northern Hemisphere), and clarified that urban agriculture contributes to the solution of social issues that cities are facing. Although, multi-functionality of agriculture has already been pointed out in many existing studies, empirical studies on entrepreneurship in agriculture have mainly focused on the abilities and skills of entrepreneurs, as well as on entrepreneurship, business strategies, and relevance to local communities and regional development (Dias et al. 2019a, b). In addition, Arafat et al. (2020) used GEM data to analyze the determinants of practicing in agriculture and show that socio-economic attributes, cognitive factors and social capital influence entrepreneurship. On the other hand, Kiminami et al. (2020) clarified the relationships among social entrepreneurship, social business (SB) and multiple functions of urban agriculture in Japan, by introducing the methodologies of SEM (structural equation modeling) and TEM (trajectory equifinality model).

According to Yunus (2010), social entrepreneurship (SE) relates to a person and describes an initiative of social consequences created by an entrepreneur with a social vision. He argued that a social business is designed exclusively to deliver social benefits and there is no thought of creating profit for any investor. However, SE is also defined by its two constituent elements: a prime strategic focus on social impact and an innovative approach to achieving its mission (Nicholls 2006). Stephan et al. (2015) highlighted four factors that affect SE: institutional voids, institutional support, post-materialism cultural values and socially supportive culture norms (weak-tie social capital) and pointed out that the promotion of SE is greatly influenced by government support and values based on the results of quantitative analysis using Global Entrepreneurship Monitor (GEM) data. In addition, based on the review results of 395 previous studies on SE, Saebi et al. (2019) pointed out that an approach to understand social entrepreneurship from the three levels of individuals, organizations, and institutions and to analyze their manifestation and change processes is necessary.

Montgomery et al. (2012) regarded social entrepreneurship as belonging to a group or organization rather than to an individual. Specifically, collective social entrepreneurship is the solution to social problems using a business approach
through the cooperation of various actors (collective action). In particular, the manifestation of collective social entrepreneurship is characterized by focusing on the fact that it exerts collective impact and causes system changes as the construction of an ecosystem of shared value. Furthermore, Strasser et al. (2020) found that three institutional aspects of structural and cultural embeddedness, widespread and coherent influence, and persistent and evolving reproduction are important in creating a transformative impact and promoting the emergence of social innovation.

Defined as the process of innovation that solves social problems at a gradual, institutional and destructive level for sustainable regional development (e.g., dealing with social needs, market and government failure) (Nicholls and Murdock 2012), research on social innovation has two streams: ‘Practical Stream’ and ‘Critical Stream’ (Moulaert and MacCallum 2019, p.36). The former is an approach to study entrepreneurship and management issues for solving the social problems in real-life, and the latter is an approach to study system and institutional issues for group empowerment. However, using the framework of knowledge creation theory, Nonaka (2021) redefined social innovation as the process of renewing social capital such as values and relationship structure, creating new knowledge through “interaction of knowledge”, and creating socially meaningful value.

2.1.2 Creating shared value (CSV) and cognitive innovation

Creating shared value (CSV) is the idea that a company creates social value by working to solve social needs and social problems, and as a result, economic value is created (Porter and Kramer 2011). Unlike the conventional way of thinking about CSR and social contribution activities, CSV is positioned at the center rather than around corporate activities, and it is significant that it changes the way of thinking about business itself. CSV and Blended Value2 are complementary concepts, the one focusing upon corporate practice, while the other has a broader vision and implications for how we understand the nature and returns of capital (Daood and Menghwar 2017). However, Kramer and Pfitzer (2016) pointed out that it is not easy when a company implements a CSV strategy, it faces barriers that the company cannot control, such as changes in demand due to government regulations and cultural norms. They added that it is necessary to involve governments, NGOs and communities to form a shared value ecosystem and create collective impact. In particular, it is important to exert a collective impact through collaboration between social enterprises and various stakeholders (Kania and Kramer 2011). On the other hand, Menghwar and Daood (2021) classified the factors that influence the realization of CSV into external factors and internal factors, and list three factors for each.

As for the external factors, the first is the system. According to an international comparative study by Liang and Renneboog (2017), there is a high correlation between the legal origin behind the economic activities of each country and CSR performance. Therefore, it is considered that various systems have a strong influence on the

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2 Reflecting a combination of financial, social and environmental objectives—to describe social enterprises (Emerson 2003).
realization of CSV. However, the system here is not only the laws and regulations by the state, but also the rules that people, whether formal or informal, follow normatively and cognitively, and it is considered that social capital is also included in the factors. In addition, the second is the trends of competitors (Competitors’ approach). Cao et al. (2019) empirically showed that competitors’ CSR efforts influence their decision-making regarding the introduction of CSR. Similarly, the implementation of CSV by a company may depend on the strategies of its competitors. Therefore, the CSV strategy in urban farming is influenced by the reality of CSV by other farming and non-farming companies competing for resources, products and services. The third external factor is customer’s behavior. Ham et al. (2020) found that an eating out company’s CSV strategy affects the effect of consumers on raising brand attitudes through awareness of the company’s social contribution, resulting in increased demand for the company. Therefore, the recognition and evaluation of the economic and multi-functionality of urban agriculture by consumers of agricultural products and services, as well as by local stakeholders, will determine the CSV strategy of urban agriculture.

As for the internal factors, the first is the emergent strategy of a company. Through the case analysis of Wal-Mart, Spicer and Hyatt (2017) clarified that the emergent strategy plays an important role in creating shared value. In other words, entrepreneurship, which creates an emergent strategy, is considered to contribute significantly to the success of CSV. The second is visionary leadership. Vaidyanathan and Scott (2012) pointed out that a vision of leadership and clear strategic decision-making are important for implementing CSV, and the motivation for enterprises to adopt CSV is related to morality in leadership (Chen et al. 2018), awareness of survival and strong ethics (Kim et al. 2019). To realize CSV in urban agriculture, it is important for agricultural managers to be aware of the management philosophy and the current state of society. The third is cognitive capabilities. Barr et al. (1992) revealed that changes in mental models of manager (cognitive maps in empirical analysis) promote strategic innovation in organizations. Corner and Pavlovich (2016) regarded metacognition as essential for individuals to overcome habitual decision-making patterns and improve organizational value creation processes. Metacognition can encourage innovation especially when conflicts need to be overcome (Lorenz et al. 2018), such as in the simultaneous creation of social/environmental and economic value in hybrid organizations (Yaari et al. 2019). Furthermore, as a precondition for strategic innovation of a company, Rajagopalan and Spreitzer (1997) and Kida (2007) focused on the changes in organizational knowledge structure including manager’s cognitive structure from a cognitive perspective.

Therefore, in this research, we consider creating shared value (CSV) which is a generic concept of value defined in terms of the increase in the utility of society’s members, as the rationale for agriculture to bring out multiple functions while conducting economic business (creating economic value and social value at the same time). Since it is consistent with the treatment of the concept of value in economic theory, for which social welfare is defined by the aggregation of individual utility, and is also consistent with blended value (Santos 2012). Furthermore, cognitive innovation of social entrepreneurship in urban agriculture may lead to the success of CSV by involving local stakeholders.
2.2 Research framework and method

Based on the above review results, this study sets up a basic model for the process of creating shared value in urban agriculture as shown in Fig. 3. It is considered that creating shared value in urban agriculture needs cognitive innovation of social entrepreneurship along with the development of social business through organizational learning by involving various stakeholders including creative classes (Florida 2002) and urban residents. In other words, the process of the virtuous cycle of creating shared value and collective social entrepreneurship in urban agriculture will be enhanced through solving social problems, while it is affected by different factors of the system. However, social institutions here are the evolution of relationships between individual members of society, political mechanisms and other forms of social order, including language, rule of habits, kinships, community traditions, cultural values, and codes of conduct, as well as social customs. Urban residents can be involved in various ways as users, operators, and collaborators of social businesses in urban agriculture.

The analytical methods used in this study are mixed methods approach by fusing quantitative sociological approach of LCA (latent class analysis) and multiple case-based qualitative exploration method. The first is to clarify the cognition and involvement of urban residents in the social business of urban agriculture through the analysis of the results of the questionnaire survey, and the second is to clarify the cognitive innovation of social entrepreneurs in urban agriculture. There are a variety of ways to integrate quantitative and qualitative research, and many typologies have been proposed for mixed methods research designs. Creswell and Plano Clark (2017) organized their mixed methods research designs into three core models: the convergent design, the explanatory sequential design, and the exploratory sequential design.

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3 Mixed methods approach has been applied to issues related to social and economic development, starting with Bamberger (2000).

4 According to Creswell (2017), a multiple-case design explores a real-life multiple bounded system through detailed, in-depth data collection involving multiple sources of information.
design. However, our design for mixed methods approach in this research is basically a convergent design in the sense that quantitative and qualitative researches are applied independently to the process of CSV in urban agriculture as shown in Fig. 3. On the other hand, it has an aspect of exploratory sequential design in that the qualitative research analyzes the historical changes and feedback of the CSV process based on the analytical results of the quantitative research. It also includes elements of exploratory sequential design in that the variables used in the quantitative research are based on the results of qualitative research conducted in the past (Kiminami et al. 2018, 2020).

3 Residents’ cognition toward urban agriculture

According to Rogers (2003), new products and services are generally introduced by the earliest consumers “innovators” (2.5%), followed by “early adopters” (13.5%) and become popular. To clarify the actual conditions of residents’ involvement in urban agriculture and their evaluation on the multi-functionality of urban agriculture, a Web questionnaire survey was conducted. The actual inspection was outsourced to Cross Marketing Co., Ltd. and conducted from March 10 to March 12, 2021. The target is the residents of four cities: 23 special wards of Tokyo (n = 586), Nagoya (n = 147), Osaka (n = 178), and Kyoto (n = 93). The number of collected samples is 1004 based on the ratio of gender and age of the census.

Here, the method of latent class analysis (LCA) is used to classify urban inhabitants and clarify their characteristics. Latent class analysis is a method of identifying the potential types (= latent classes) of the respondent population and clarifying the structure of each. It is an analytical method for exploring potential tastes, assuming the diversity of the population, and has been widely used in the marketing field for the first time in recent years. The characteristics of urban residents can be analyzed using multiple qualitative data combined with quantitative data, and the optimum number of classes can be determined using statistical criteria.

As a result of searching for the optimum number of classes using AIC and BIC, the number of four classes was optimal according to BIC (AIC = 14,451.15, BIC = 14,898.12, Chi-square value = 19,173.81). Table 1 shows the number of classes (specified as 4), the ratio of each class and the expected probability of each question item. The characteristics of each class can be organized as follows. First, “Class 1” can be interpreted as “Follower Type I” because urban residents in the class have a slightly lower innovation orientation than the medium level and have low involvement in urban agriculture. Next, “Class 2” can be interpreted as “Innovator/Agricultural Involvement Type” because urban residents in the class are highly innovation-oriented, highly involved in urban agriculture, and have high social capital. In addition, “Class 3” can be interpreted as “Follower Type II” because urban residents in the class have a medium level of innovation orientation and low involvement in urban agriculture. In addition, many urban residents in the class answered “I can’t say either” in other question items. Finally, “Class 4” can be interpreted as a “Fixed Type” because urban residents in the class have a low innovation orientation and a low involvement in urban agriculture. In addition, their social capital and
satisfaction with local life tend to be polarized, and COVID-19 has no influence on their cognition.

Next, we clarify the evaluation of each class for the multi-functionality of urban agriculture and consider the challenges in inducing social innovation through urban agriculture. Table 2 summarizes the residents' evaluation by class for the multi-functionality of urban agriculture. Class 1 (Follower Type I) gave a high evaluation of the multifaceted functions as a whole, Class 2 (Innovator/Agriculture Involvement Type) and Class 4 (Fixed Type) are close to the average of all respondents, and class 3 (Follower Type II) gave a low evaluation as a whole. Considering urban residents of Follower Type I (class1) who have a medium level of innovation orientation and a low involvement in agriculture, satisfaction with local life tend to be polarized, and COVID-19 has no influence on their cognition.

| Table 1 | Results of LCA and characteristics of each class of urban residents |
|-----------------|-----------------|-----------------|-----------------|-----------------|
|  | Latent class name | Class 1 | Class 2 | Class 3 | Class 4 |
|  | (Ratio of each class: %) | (25.6) | (7.1) | (28.6) | (38.7) |
| [Consumer innovation] |  |  |  |  |  |
| Do you like to improve and devise tools, accessories, sundries, toys, clothing, sporting goods, cars, household appliances, software, etc. in your daily life? | 1 | like it very much | 0.04 | 0.25 | 0.00 | 0.16 |
|  |  | 2 | like a little | 0.19 | 0.45 | 0.12 | 0.09 |
|  |  | 3 | Neither | 0.24 | 0.19 | 0.60 | 0.13 |
|  |  | 4 | don’t like so much | 0.34 | 0.09 | 0.18 | 0.14 |
|  |  | 5 | don’t like it at all | 0.20 | 0.02 | 0.11 | 0.47 |
| [Urban farmland endowment] |  |  |  |  |  |
| Is there farmland in the area where you live? | 1 | There is a lot | 0.00 | 0.09 | 0.00 | 0.03 |
|  |  | 2 | There is a bit | 0.11 | 0.44 | 0.18 | 0.11 |
|  |  | 3 | There is not much | 0.30 | 0.32 | 0.36 | 0.12 |
|  |  | 4 | There is not any | 0.58 | 0.15 | 0.46 | 0.73 |
| [Involvement in urban agriculture] |  |  |  |  |  |
| Do you have experience in urban agriculture? | 1 | Experience to grow plants and animals by myself | 0.01 | 0.26 | 0.05 | 0.02 |
|  |  | 2 | Help with urban agriculture involving others | 0.00 | 0.18 | 0.00 | 0.02 |
|  |  | 3 | No experience with it, but there are people around me | 0.10 | 0.28 | 0.11 | 0.02 |
|  |  | 4 | No experience of being involved, and no one around me has been involved | 0.90 | 0.27 | 0.84 | 0.94 |
| [Social capital] |  |  |  |  |  |
| Do you think you have good relationships with your acquaintances / friends and neighbors? | 1 | I think so | 0.00 | 0.14 | 0.00 | 0.23 |
|  |  | 2 | I think so | 0.58 | 0.65 | 0.13 | 0.06 |
|  |  | 3 | I can’t say either | 0.27 | 0.17 | 0.75 | 0.16 |
|  |  | 4 | I don’t think so much | 0.15 | 0.05 | 0.06 | 0.09 |
|  |  | 5 | I don’t think so at all | 0.01 | 0.00 | 0.06 | 0.47 |
| [Satisfaction with community life] |  |  |  |  |  |
| Are you satisfied with the area you currently live in? | 1 | Very satisfied | 0.11 | 0.21 | 0.00 | 0.29 |
|  |  | 2 | Well satisfied | 0.74 | 0.63 | 0.33 | 0.18 |
|  |  | 3 | Not satisfied | 0.04 | 0.14 | 0.67 | 0.17 |
|  |  | 4 | Not satisfied | 0.09 | 0.02 | 0.00 | 0.04 |
|  |  | 5 | Not satisfied at all | 0.02 | 0.00 | 0.01 | 0.31 |
| [Cognitive changes due to the COVID-19] |  |  |  |  |  |
| Did you change your view of your diet and agriculture as a result of the epidemic of the new coronavirus? | 1 | It changed a lot | 0.03 | 0.14 | 0.01 | 0.07 |
|  |  | 2 | It changed a little | 0.27 | 0.46 | 0.06 | 0.08 |
|  |  | 3 | Neither | 0.16 | 0.21 | 0.66 | 0.23 |
|  |  | 4 | It doesn’t change so much | 0.40 | 0.15 | 0.22 | 0.12 |
|  |  | 5 | It doesn’t change at all | 0.15 | 0.04 | 0.06 | 0.50 |

The numbers in the table are the expected probabilities for each class in which the option is selected for each question.

Among the classes, the cells with the highest probability that each option are shaded.

Within each class, the cells in which each option is most likely to be selected are shown in bold.
Table 2  Evaluation on the importance of multi-functionality of urban agriculture by each class (unit: %)

| Function                                                                 | All respondents | Class 1  | Class 2  | Class 3  | Class 4  |
|--------------------------------------------------------------------------|-----------------|----------|----------|----------|----------|
| Supply of fresh and safe agricultural and livestock products             | (100.0)         | (25.6)   | (7.1)    | (28.6)   | (38.7)   |
| Providing a place for employment                                         | 32.5            | 42.0     | 31.0     | 21.6     | 34.4     |
| Greenery and environmental conservation                                  | 17.4            | 27.2     | 21.1     | 10.8     | 15.2     |
| Educational functions such as farm work experience and food education    | 33.6            | 44.4     | 33.8     | 22.3     | 34.7     |
| Revitalization of local industries (including cooperation between agriculture and other industries) | 21.2            | 32.7     | 19.7     | 10.8     | 21.6     |
| Disaster prevention functions such as evacuation sites in the event of a disaster | 14.8            | 24.9     | 16.9     | 7.0      | 13.6     |
| Providing moisture and comfort to life                                   | 16.0            | 24.1     | 15.5     | 8.4      | 16.5     |
| Tradition function of local traditions and culture                       | 25.9            | 32.7     | 26.8     | 18.1     | 27.0     |
| Creation of beautiful landscape                                         | 10.4            | 17.1     | 11.3     | 5.9      | 9.0      |
| Providing a place for local communities                                  | 14.5            | 18.7     | 16.9     | 8.4      | 15.9     |
| Medical and welfare functions such as horticultural therapy             | 18.4            | 22.2     | 22.5     | 13.2     | 19.0     |
| Providing a place for familiar recreation                                | 12.1            | 21.8     | 14.1     | 5.9      | 9.8      |
| Other                                                                    | 11.8            | 14.0     | 15.5     | 7.0      | 13.1     |
| Nothing I think is important                                             | 0.3             | 0.4      | 0.0      | 0.0      | 0.5      |

The question is “Please choose all items that are considered to be important functions of urban agriculture”.

The numbers that are more than five points larger than the whole are double underlined (the numbers that are five points or more smaller than the whole are underlined)
we believe that urban agriculture will become more widespread if they have the opportunity to access it. On the other hand, if urban agriculture as a social innovation can cause the cognitive change of urban residents of Follower Type II (class 3), it is possible to become more widespread. In other words, a system change in the whole city will occur when urban agriculture is infiltrated by the general urban residents. Therefore, we assume that urban agriculture will be permeated to urban residents according to the stage of dissemination of social innovation.

4 Cognitive innovation of social entrepreneurship in urban agriculture

4.1 Analysis target

In the following, we will clarify the cognitive innovation of social entrepreneurship in urban agriculture in Japan through qualitative analysis based on the framework as shown in Fig. 4. In setting the evaluation items for each element in this paper, Yamamoto (2002), Hosoki and Kiminami (2021) were referred. We also added the learning ability that is assumed to be strongly related to the cognitive innovation of entrepreneurs. In other words, the development process of social entrepreneurship is categorized through the analysis of each element (motivation/orientation, competency, learning ability, etc.) in phase I and phase II. Furthermore, we will superimpose and organize the aspects of business development as a social business that creates shared value. For information on each analysis target, we use the contents obtained from literature/materials and interview surveys.

Furthermore, according to Sato et al. (2016), the number of analysis targets in qualitative analysis is 1 person when exploring the depth of an individual’s pathway, 4 ± 1 person when exploring the diversity of experience, and 9 ± 2 people when grasping the type of route. Since our purpose in this research is to clarify
| Table 3  | Overview of analyzed cases (social entrepreneurship in urban agriculture) |
|----------|-------------------------------------------------------------------------|
|          | Ono Kunitachi Farm | Miyaji Miyaji Pig Farm | Ochi Cave d’Occi Winery | Fujita Fujita Farm | Hisamatsu Hisamatsu Farm | Nishitsuji My Farm | Kojima NPO Agricultural School |
| Location | Large city (Tokyo) | Large city (Fujisawa City) | Provincial city (Niigata City) | Provincial city (Niigata City) | Provincial city (Tsuchiura City) | Large cities and others (Tokyo and other big cities) | Large city (Fujisawa City) |
| Business | Municipal farm | Livestock | Winery | Livestock | Organic farming | Agricultural experience, etc | Agricultural fortune cooperation, etc |
| Way of entry | New entry (outside the area) | Management succession | New entry (outside the area) | Management succession | New entry (within the area) | New entry (outside the area) | New entry (outside the area) |
Fig. 5 Location of cases. Source: Made from e-stat (https://jstatmap.e-stat.go.jp/jstatmap/main/base.html?1618734621258)

Fig. 6 Radar chart of 7 entrepreneurs
both the depth of social entrepreneur’s pathway and grasp the type of their cognitive innovation, we analyze seven cases in the paper by taking the diversities of business location and business type into account under the current situation of urban agriculture in Japan. The overview of analyzed cases of social entrepreneurship in urban agriculture in the study is as shown in Table 3 and Fig. 5.

### 4.2 Case analysis in urban agriculture

Figure 6 (see Appendix Table 4 and 5 for details) showed the results of evaluating on each element of social entrepreneurship in the periods of founding/succession (Phase I) and business development (Phase II) of seven cases. These elements are motives/orientations (problem awareness, opportunities/experiences), competencies (diversity/flexibility, networks, customer orientations), true needs and learning ability (learning opportunity/motivation). Evaluation is performed on a 7-point scale (1: very weak, 2: weak, 3: slightly weak, 4: normal, 5: slightly strong, 6: strong, 7: very strong).

#### 4.2.1 Case I: Mr. Ono

Located in Kunitachi City of megacity Tokyo, a community farm (Farm K) operated by Mr. Ono has its size of 1,000 m² field. However, there are a small paddy field, vegetable fields, a BBQ space, earthen pipes, handmade playground equipment and animals (ponies) in the farm. In addition, its number of users is more than 5000 per year.

Mr. Ono was initially unaware of agricultural issues and attractiveness, did not have a high social entrepreneurship. In Phase I, each element was rather low, and the social entrepreneurship of him was gradually increased in the process of trial and error in search of social business in urban agriculture. In Phase II, he established a community farm, received administrative support, and clarified the concept through discussions with the government and local stakeholders. As a result, Mr. Ono is engaged in an innovative social business that provides space design and services for communities with diversity, openness, and comfort. He focuses on the design for various people to interact with each other, causing cognitive changes and value creation (shared value creation) through interaction between users and operators and among customers. The business is highly diverse, customer-oriented, and successfully managed to capture true needs of users.

#### 4.2.2 Case II: Mr. Miyaji

Farm M is a pig farming company located in Fujisawa City, Kanagawa Prefecture. In addition to the pork production business, Farm M conducts diversification of

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5 The analysis of this case was conducted using Ono (2018) and Community Farm HP(https://hatakendo.org/)).

6 The analysis of this case was conducted using Miyaji (2009), Miyaji and Saito (2017), Miyaji (2019).
agri-business such as processing, direct sale and BBQ business (interacting between producers and consumers).

Mr. Miyaji attaches great importance to creating a face-to-face relationship between producers and consumers through the barbecue business as a motive for succeeding the pig farming business at his parents’ home. It can be said that he had relatively high customer orientation and true customer needs in Phase I, but his social entrepreneurial spirit itself was not high. In Phase II, Mr. Miyaji planned new business while being restricted as a pig farming business located in the city, and rebuilt the internal cohesive social capital such as family, acquaintances/friends and local communities. In addition, Mr. Miyaji is transforming his entrepreneurial spirit into social entrepreneurship. He has built a bridging network inside and outside agriculture, as well as a platform for solving social problems, such as the establishment of a “farmer’s child network.”

4.2.3 Case III: Mr. Ochi

Winery C is located in the sand dune area of Kakudahama, Nishikana-ku, Niigata City. The first owner, Mr. Ochi, started a genuine winery centering on in-house grown grapes. Currently, the company has been developed as a wine business including restaurants, a hot spring spa, an accommodation, and a beauty and health salon.

In Phase I, Mr. Ochi aimed to make genuine wine, and had started a business with a strong awareness of problems, customer orientation, and true needs. He aimed to increase the social value of the area where the winery is located through small-lot production, small-lot sales and establishment of a community-based business model. His social entrepreneurship had been at a certain level from the beginning. In Phase II, he stabilized the business through the opening of restaurants in the city. In addition, he opened the winery management school to foster successors and form wine clusters in the region. As a result, Mr. Ochi’s cooperation/network and learning ability have been enhanced.

4.2.4 Case IV: Mr. Fujita

Located in Nishikan-ku, Niigata City, Farm F is the group companies of dairy farming including the rice farming and whole crop silage, ice-cream shop, farmer’s restaurant, BBQ restaurant, etc. Taking advantage of the location of rice paddy area, Farm F has developed a new type of dairy farming so called ‘integrating farming system between cultivation and livestock sector’ in the region through processing the manure generated by dairy farming and using it as compost utilization for rice farming.

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7 The analysis of this case was conducted using Ochi (2009).
8 The analysis of this case was conducted using Souma and Kiminami (2008, 2011).
In Phase I, Mr. Fujita inherited the business from his father and established a limited company aiming at a family-owned business model of cyclical agriculture in collaboration with farming that suits the local environmental conditions. He regarded the problems of Japanese dairy farming as social issues, presented solutions by building new business models, and had a high awareness of the issues and a social entrepreneurial spirit. In Phase II, the business is being enhanced by expanding the family business from various perspectives through the opening of a gelato store, the implementation of dairy experience education, and the opening of a farm restaurant. He has also accumulated opportunities and experience through cooperation with various agricultural committee members and the media.

4.2.5 Case V: Mr. Hisamatsu

Mr. Hisamatsu has been engaged in organic farming since 1999 in Tsuchiura City (former Niihari Village) in the southern part of Ibaraki Prefecture, sandwiched between Mt. Tsukuba and Lake Kasumigaura, with the motto of "Delicious vegetables make you happy." At Hisamatsu Farm, more than 100 kinds of seasonal vegetables are cultivated annually in a 4 ha field and sold to contract consumers by regular flights. In addition to the area, vegetables are also sold to the restaurants outside the area (in Tokyo).

Mr. Hisamatsu admires the business of organic farming, but since he started farming independently in Phase I, each element of social entrepreneurship was generally at a low level. However, through the advice of experts in soil fertilizer science and active learning from advanced farmers in organic farming, he has built the technology and networks necessary for organic farming and gradually stabilized the business. In particular, in Phase II, he started to increase the motivation and opportunity to learn by employing female farmers and appointed them as farm managers, and shifting the farm management from individual-oriented to group- and team-oriented. Mr. Hisamatsu has established a business model in collaboration with local governments, retail stores and restaurants. In addition, efforts are being made to foster small-scale, independent organic farmers who do not rely on subsidies, and social entrepreneurship is rapidly increasing in Phase II.

4.2.6 Case VI: Mr. Nishitsuji

MYFARM Inc. is the main example of start-ups of Mr. Nishitsuji founded in 2007 with the idea of "self-production for local consumption". The main business is an agricultural experience service, which is operated by utilizing abandoned cultivated land all over the country (reaching 100 locations in 2015). In addition, it has developed various businesses such as an agricultural school (Agri-Innovation School) that

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9 The analysis of this case was conducted using Hisamatsu (2013, 2014) and Hisamatsu Farm HP (http://hisamatsufarm.com/).
10 The analysis of this case was conducted using Nishitsuji (2012) and MY FARM HP (https://myfarm.co.jp/).
is open on weekends, an online wholesale market, an agricultural management consulting business, a mail order business, and research and development.

Mr. Nishitsuji started his business with two clear missions: “Increase the number of people who can make their own food” and “Regenerate abandoned cultivated land” in Phase I. In addition, he set up two courses to solve social problems: “Weekend Farming Preparation Course” and “Organic Professional Farmer Training Course” for supporting farming preparation and training organic farmers. He was strongly conscious and had a certain level of social entrepreneurship from the beginning. In Phase II, he started a project aimed at the reconstruction of agriculture in Tohoku area from the Great Earthquake of East Japan. Without fear of failure, he took it as an opportunity to think about various types of agriculture, while working in collaboration with local farmers. His awareness of the problem and each element of social entrepreneurship has been increased. In addition, he is planning various business developments such as distribution business, farmland rental service with sales destination, agriculture-related consulting business, and overseas business expansion.

4.2.7 Case VII: Ms. Kojima

Ms. Kojima started supporting activities around 2009, and has supported 72 people who had difficulty in working, such as homeless people, welfare recipients, social withdrawals, turnovers, and those who were on leave due to mental illness by 2016. After being supported from “Agriculture School”, the business started by Ms. Kojima, 43% (31 people) are having job, and 13 of them are working in agriculture sector. The main example of Ms. Kojima's entrepreneurship is to connect people who have some difficulty in working in society or those who want to work but do not have a job, linking with agricultural sector that is facing a shortage of labor.

Ms. Kojima started a kitchen garden school in Phase I and hired homeless people as part-time workers. Although she had a strong awareness of solving social problems from the beginning, her business potential and impact are not high. In Phase II, she started a farming support program which has made many people becoming farmers, and established a NPO corporation with the aim of stabilizing the business. In addition, the business of training people in need for independence has been enhanced, and the diversity and flexibility of the business are particularly high.

4.3 Development pattern of cognitive innovation of social entrepreneurship in urban agriculture

From the above analytical results, the following two points are clarified. First, social entrepreneurship does not have all aspects of high motivation/orientation, competencies, and learning abilities. Each social entrepreneur has strong characteristics of their own and their social entrepreneurship was not high from the very beginning but

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11 The analysis of this case was conducted using Kojima (2019) and Know-school HP (https://know-school.org/).
was acquired through trial and error and systematic learning. Secondly, three patterns (radical cognitive innovation, gradual cognitive innovation and social dilemma of cognitive innovation) are existing in the development of social entrepreneurship in urban agriculture.

4.3.1 Pattern 1: Radical cognitive innovation (Mr. Ono and Mr. Hisamatsu)

In the two cases, each element was at the lowest level in the entrepreneurial Phase I but cognitive innovations were created in progresses along with the growth and expansion of the business. As a result, the factor evaluation in the entrepreneurial Phase II is rising rapidly. In particular, Mr. Ono is highly evaluated for customer-oriented and true needs, and Mr. Hisamatsu is highly evaluated for his motivation and opportunity to learn which was related to radical cognitive innovation.

4.3.2 Pattern 2: Gradual cognitive innovation (Mr. Nishitsuji and Mr. Miyaji)

Each element was high to a certain extent even in the first phase of entrepreneurship, and as the business grows and expands, the cognitive innovation is getting gradually in the two cases. As a result, the elemental evaluations in the second phase of entrepreneurship are relatively well balanced. However, Mr. Miyaji is a little less diverse and flexible.
4.3.3 Pattern3: Stagnation: social dilemma of cognitive innovation (Mr. Ochi, Mr. Fujita and Ms. Kojima)

Mr. Ochi and Mr. Fujita have succeeded as social entrepreneurs, but are facing a social dilemma. Due to the strength of the social institutional direction in the area where they are located and the lack of an open mind, the entrepreneurs themselves are assimilated into the environment and become part of it. They could hardly obtain social support (region) that was commensurate with it due to placing more importance on self-actualization than on solving social problems. As for Ms. Kojima, it was a good strategy to set the targets of support in the first phase of entrepreneurship. However, for capturing the true targets of support, Ms. Kojima needs to approach the causes of poverty. Therefore, organizational learning involving the people surrounded seems to be necessary for the cognitive innovation of the entrepreneurs themselves.

5 Conclusion and policy implication

Based on the above analytical results, the process of shared value creation in urban agriculture can be organized into three main models as shown in Fig. 7.

The first is a Virtuous Cycle Model I for creating shared value. In this model, social issues are solved through cognitive innovation and the development of social business, and a virtuous cycle process is created through changes in social institutions and organizational learning. The urban residents involved in urban agriculture are supposed not only limited to latent class 2 (Innovator/Agricultural Involvement Type), but widely included in latent class 1 (Follower Type I) and latent class 3 (Follower Type II). Creating shared value in urban agriculture will be widespread and social issues will be solved effectively through business activities. And changes in social institutions will be caused by the cognitive innovations in the collective social entrepreneurship of the stakeholders through organizational learning.

The second is a Virtuous Cycle Model II for creating shared value. In this model, although the gradual cognitive innovation is realized but the penetration is not high because organizational learning as a change in collective cognition remains partially, and the urban inhabitants involved are supposed to be only the latent class 2 and class 1. As a result, changes in the social institutions have not been triggered. However, the third is the stagnant model of shared value creation. In this model, the cognitive innovation of social entrepreneurs and the development of social business
have not yet led to the organizational learning of related stakeholders and thus to institutional changes.

In addition, the results of latent class analysis clarified that diversified cognition and behavior toward urban agriculture are existing in the urban residents, the involvement of urban agriculture among residents is supposed to be only latent class 2, and the degree of penetration is low. Therefore, the stakeholders of urban agriculture are facing both institutional and cognitive barriers in today’s Japan.

Policy implication drawn from the above-mentioned results suggests that a system change may happen when urban agriculture in Japan becomes more familiar to general urban residents through collective social entrepreneurship. Therefore, it is important for social entrepreneurs to create shared value in urban agriculture through organizational learning with stakeholders including creative classes and urban residents for solving social problems. As for our future research topics, a quantitative survey on urban agricultural management to understand the actual state of efforts to solve social issues through cognitive innovation will be necessary for generalizing the results obtained in this study. In addition, it is necessary to analyze the perceptions and behaviors of various stakeholders, and clarify the mechanism of shared value creation in urban agriculture from the perspective of food system.

Appendix

See Tables 4 and 5.
| Problem awareness                                                                 | Ono                        | Miyaji                                         | Ochi                                      | Fujita                                   | Nishitsuji                               | Kojima                                  | Hisamatsu                               |
|----------------------------------------------------------------------------------|----------------------------|-----------------------------------------------|-------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| Many people do not know the production site of agriculture in urban areas        | We sell delicious pork directly to customers. A new business model for pig farmers that is not pursuing scale. | Genuine wine making. Creating a winery that values individuality, is proud of the local area, and contributes to the realization of a high-quality life. | A business model of dairy farming that can have holidays. | Achieving two things: increase the number of people who make and eat by themselves, regenerate abandoned cultivated land, and contribute to the realization of a high-quality life. | Interesting in agricultural and homeless issues. I want to create a distribution system for farmers to become a business. | Doing organic farming as a fusion of agriculture and the solution of environmental problems. |
| Weak = 2 points                                                                  | Slightly weak = 3 points   | Normal = 4 points                              | Somewhat strong = 5 points                | Normal = 4 points                        | Normal = 4 points                        | Weak = 2 points                         |
| Opportunity/experience                                                            | Changing jobs to an agricultural corporation and learning production technology. | Emphasizing on sending e-mail newsletters. Sowing seeds for the future by communicating the idea to the people you meet. | Studying abroad for wine making. | Overseas agricultural training. Learning the attitude of a dairy farmer/manager from his father. | Utilization of incubation office. | Studying entrepreneurship at a vegetable wholesale company at a part-time job. | Farming training at an organic farming corporation. |
| Weak = 2 points                                                                  | Weak = 2 points            | Slightly weak = 3 points                       | Weak = 2 points                           | Slightly weak = 3 points                 | Weak = 2 points                           | Weak = 2 points                         |
|                                                                                  |                            |                                               |                                           |                                          |                                          |                                          |                                          |
| Table 4 (continued) |
|---------------------|
| Ono | Miyaji | Ochi | Fujita | Nishitsuji | Kojima | Hisamatsu |
| **Diversity-flexibility** | Although he focused on multipurpose space design, the concept is unclear | A business model that makes the best use of local resources (agriculture) | Emphasizing on individuality and building equal relationships with customers. Small quantity production and small quantity sales | Recycling agriculture through farming cooperation that meets local conditions | Finding a farmer to cooperate with | Operating of a farmer-directed online shop that directly connects producers and consumers |
| | Weak = 2 points | Weak = 2 points | Slightly weak = 3 points | Slightly weak = 2 points | | Weak = 2 points |
| **Cooperation/network** | Idea study and cooperation system with local residents | Cooperation with tourist farms. Main customers are friends and acquaintances | Administrative support. Connection with local company investors | Collaboration with family-owned group companies | Connection with young farmers in the area | Connection with local farmers |
| | Weak = 2 points | Weak = 2 points | Weak = 2 points | Weak = 2 points | Weak = 2 points | Weak = 2 points |
| **Customer-oriented true needs** | A farm where you can rent out fields and enjoy barbecue | A face-to-face relationship with customers through barbecue. Develop your own sales channel | Genuine wine making | Development of recycling-type agriculture that meets local conditions | Providing opportunities for those who wish to experience farming | Consumers who want to eat delicious food and producers who want to make it trade at a price commensurate with quality |
| | Slightly weak = 3 points | Normal = 4 points | Slightly weak = 3 points | Slightly weak = 3 points | Slightly weak = 3 points | |
| | | | | | | Growing organic vegetables |
| | | | | | | Very weak = 1 point |
| Motivation and opportunity to learn | Ono | Miyaji | Ochi | Fujita | Nishitsuji | Kojima | Hisamatsu |
|-----------------------------------|-----|--------|------|--------|-----------|--------|-----------|
| Learning from challenges and failures. Learn through cooperation with people | Slightly weak = 3 points | Learning to gain knowledge for entrepreneurship | Slightly weak = 3 points | Mental learning from his father through the management succession process. Acquisition of advanced technology and knowledge | Slightly weak = 3 points | Humble learning to gain trust from sales failure experience | Slightly weak = 3 points | Learning about various issues related to agriculture and poverty | Slightly weak = 3 points | Learning for theoretical armament | Normal = 4 points |
| Ono       | Miyaji       | Ochi           | Fujita                      | Nishitsuji                      | Kojima             | Hisamatsu      |
|-----------|--------------|----------------|-----------------------------|--------------------------------|--------------------|----------------|
| **Problem awareness** |              |                |                             |                                |                    |                |
| Creating a community space with diversity, openness, and comfort | Solving Japanese agricultural problems. 3 earn, if there is cool to impress primary industry K to industry | Genuine wine making. Creating a winery that values individuality, is proud of the local area, and contributes to the realization of a high-quality life | A business model of local production for local consumption through recycling-type dairy farming utilizing local resources and business diversification | Solving the problems of Japanese agriculture through agricultural service business that provides agricultural experience, farming support, and farmer training | Creating a farm and farming support system for homeless people and withdrawals to regain their lives | “Delicious vegetables make you happy”. Dissemination of business model of organic farming as small but strong agriculture, human resource development |
| Strong = 6 points | Strong = 6 points | Normal = 4 points | Somewhat strong = 5 points | Very strong = 7 points | Strong = 6 points | Strong = 6 points |
| **Opportunity/experience** | “Vegetable making” DVD supervision, seminar/training instructor media appearance | Participating in various projects starting from the platform (NPO) created with friends | Knowledge transferring through winery management school | A member of a local government committee and an officer of the Agricultural Corporation Association. Media transmission | Participating in the Great East Japan Earthquake reconstruction project, media appearance | Entrepreneurship plan, application for business contest, media appearance |
| Somewhat strong = 5 points | Strong = 6 points | Normal = 4 points | Strong = 6 points | Strong = 6 points | Normal = 4 points | Somewhat strong = 5 points |
|                   |              |                |                             |                                |                    |                |
|                   |              |                |                             |                                |                    |                |
Table 5 (continued)

| Diversity-Flexibility   | Ono                  | Miyaji                                   | Ochi                           | Fujita                                      | Nishitsuji                                     | Kojima                                      | Hisamatsu                                   |
|-------------------------|----------------------|------------------------------------------|---------------------------------|---------------------------------------------|------------------------------------------------|---------------------------------------------|---------------------------------------------|
|                         | Accepting private   | Participating in a community where you   | Emphasizing on individuality   | Development of beef cattle breeding,       | Utilization measures and business development of abandoned cultivated land that meet the characteristics and needs of each region, overseas expansion | Supporting trainees according to their needs | Growing 100 kinds of vegetables a year and sell vegetables that meet the needs of various consumers and actual consumers |
|                         | lodging and inbound | can share your ideas and thoughts        | and building equal relations-| establishment of farm restaurant           | Normal = 4 points                              | Very strong = 7 points                       | Normal = 4 points                           |
|                         | tourists             | Normal = 4 points                        | ships with customers. Small    | Normal = 4 points                           | Somewhat strong = 5 points                     |                                             |                                             |
|                         | Strong = 6 points    |                                          | quantity production and small  |                                              |                                               |                                             |                                             |
|                         |                      |                                          | quantity sales Normal = 4      |                                              |                                               |                                             |                                             |
|                         |                      |                                          | points                         |                                              |                                               |                                             |                                             |
|                         |                      |                                          |                                |                                              |                                               |                                             |                                             |
| Cooperation/network     | Collaborating with   | Collaborating with other social          | Collaborating with winery      | Cooperating with local farmers (compost   | In cooperation with various organizations,     | Collaborating with NPOs Somewhat strong = 5  | Connecting with local farmers and organic   |
|                         | local residents,    | entrepreneurs Very strong = 7 points     | entrepreneurs Somewhat strong  | spraying contract, WCS sales) Normal = 4  | agricultural experience, as well as human     |                                             | farmers. Farm management as a team Somewhat strong = 5 points |
|                         | government, and     |                                          | strong = 5 points              | points                                       | resource development business, research and   |                                             |                                             |
|                         | university students |                                          |                                |                                              | development Strong = 6 points                  |                                             |                                             |
|                         | Somewhat strong = 5 |                                          |                                |                                              |                                               |                                             |                                             |
|                         | points              |                                          |                                |                                              |                                               |                                             |                                             |
| Customer-oriented True needs | Ono | Miyagi | Ochi | Fujita | Nishitsuji | Kojima | Hisamatsu |
|-----------------------------|-----|--------|------|--------|-----------|--------|-----------|
| Creating a platform for farmers | Somewhat strong = 5 points | Genuine wine making. A variety of wines offered by multiple wineries | Somewhat strong = 5 points | Dairy education farm (processing experience/milking experience). Direct sales of rice via the Internet | Normal = 4 points | Grasping various needs related to agriculture (consumers, local residents, producers, educational/research institutes) from multiple perspectives | Somewhat strong = 5 points |
| Customer-oriented agricultural services, child-rearing support business | Very strong = 7 points | | | Normal = 4 points | | Strong = 6 points | Building stable and long-term relationships with contract consumers and restaurants on regular flights | Normal = 4 points |
| Motivation and opportunity to learn | From “urban residents” to “typical consumers”, meet agriculture and the community, and continue to grow with the process of becoming “local residents” with their families | Somewhat strong = 5 points | The humility of being an “ordinary person without special abilities”. Balance of knowledge and action. A challenging spirit that “you can’t understand until you try (after absorbing knowledge)” | Somewhat strong = 5 points | Knowledge transfer by winery management school. Business succession and new challenges in other regions | Somewhat strong = 5 points | Challenge to a new business (beef cattle breeding) | Somewhat strong = 5 points |
| From “urban residents” to “typical consumers”, meet agriculture and the community, and continue to grow with the process of becoming “local residents” with their families | Somewhat strong = 5 points | | | | Continually learning even in different climates (Tohoku) and harsh conditions | Strong = 6 points | Learning about various issues related to agriculture and poverty. Learning through practice | Normal = 4 points |
| The humility of being an “ordinary person without special abilities”. Balance of knowledge and action. A challenging spirit that “you can’t understand until you try (after absorbing knowledge)” | Somewhat strong = 5 points | | | | | | | Deep learning about organic farming issues, theory and practice | Very strong = 7 points |
| Continually learning even in different climates (Tohoku) and harsh conditions | Strong = 6 points | | | | | | | Very strong = 7 points |
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