

## **Rice Straw Craft Preservation and Development in Nagano Prefecture, Japan**

**Pandu Purwandaru**

Faculty of Fine Art and Design, Universitas Sebelas Maret, Ir. Sutami 36, Kentingan, Jebres District,  
Surakarta City, Central Java Province, 57126, Indonesia

ORCID ID: 0000-0002-4431-2853, SCOPUS ID: 57359135100

*pandupurwandaru@staff.uns.ac.id*

The Japanese rice straw culture began in the Yayoi period approximately 2000 years ago. This culture can be found in almost all areas of Japan, including the Nagano Prefecture. One of the supporting elements of the rice straw culture development in this area is because it has been recognized as a potential rice farming area. Based on the historical evidence displayed in a number of museums, there are various traditional uses of rice straw for utility, ritual, and celebration needs. Unfortunately, the number of workshops and craftsmen is currently decreasing due to modernization. However, there are still several workshops that still exist and are actively producing rice straw crafts. Therefore, this research was conducted to understand various supporting aspects in the preservation and development program of rice straw crafts in Nagano Prefecture. From the mapping results in Otarimura and Azumino, it may be concluded that the character of the rice straw crafts produced those areas is through coiling and basket weaving methods. There are five elements that support the development of these crafts, namely human resources, production methods, design development, support from the government and private sector, and the market.

*Keywords: Rice straw, craft, culture, craftsmen, Nagano*

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## INTRODUCTION

Rice is the most widely produced commodity in Japan with a total of 9,706,250 tons, placing the country globally as the 12th largest rice producer in the world (FAOStat., 2021). Rice cultivation in Japan itself began with the transition from the Jomon era to Yayoi era or 10-4 century BCE. Rice cultivation methods are broadly divided into dry field and wet field cultivation, in which wet field cultivation approach is the one that is widely implemented in Japan today (JapanGov., 2020). The wet field cultivation implementation originated in northern Kyushu in approximately 10 century BCE, spreading to the Kinki region from 7th century BCE and to the far north of the Tohoku region from 4th century BCE (Leipe et al., 2020).

Rice farming culture has become an important part of Japanese people's lives. In addition to producing various culinary cultures, rice farming culture also shapes the village community in a socio-cultural and spiritual aspects (Sutiyono et al., 2018) through *matsuri* or festivals, such as community festivals that celebrate the rice harvest, which are held across the country every autumn. In spring or the rice planting season, there are also community activities that reflect the community's strong connection to nature by singing, dancing, and praying for protection from planting to harvest to the gods.

In addition to this rice culture, traditionally, the Japanese also have a culture of utilizing rice straw

known as *wara no bunka*. This culture began 2,000 years ago during the Yayoi period and, at the beginning of the Edo period (1603-1868), became the culmination of this culture, which can be found in various records both in writings and traditional paintings (Wiyancoko, 2010). Culture is owned by the community and handed down through generations (Mulyanto et al., 2017). In Japan, this rice straw utilization culture was applied not only in farming communities, but also in mountainous areas, as well as fishing villages. Through this culture, people utilize rice straw for utilitarian needs or *ke no hi*, such as for agricultural, architectural, and other needs, as well as for celebration and ritual needs or *hare no hi*, such as for *shimenawa* or rope to be placed in Shinto shrines. In total, there are 1164 artefacts of traditional rice straw crafts collected by 14 museums in Japan (Miyazaki, 1995).

Based on the perspective of Japanese traditional farmers, rice straw is the parent of the rice plant because it grows before the grain appears. In terms of quantity, the rice straw produced in rice farming in Japan is large, thereby making it a potentially abundant material to be utilized. According to calculations by (Miyazaki, 2006), if all the rice straw in Japan were collected in a year, a rope 1 cm thick could cover 36 round trips between the earth and the moon, covering approximately 8,000 times the size of the Yokohama stadium or the second largest stadium in Japan if made into *tatami* or Japanese traditional mat.

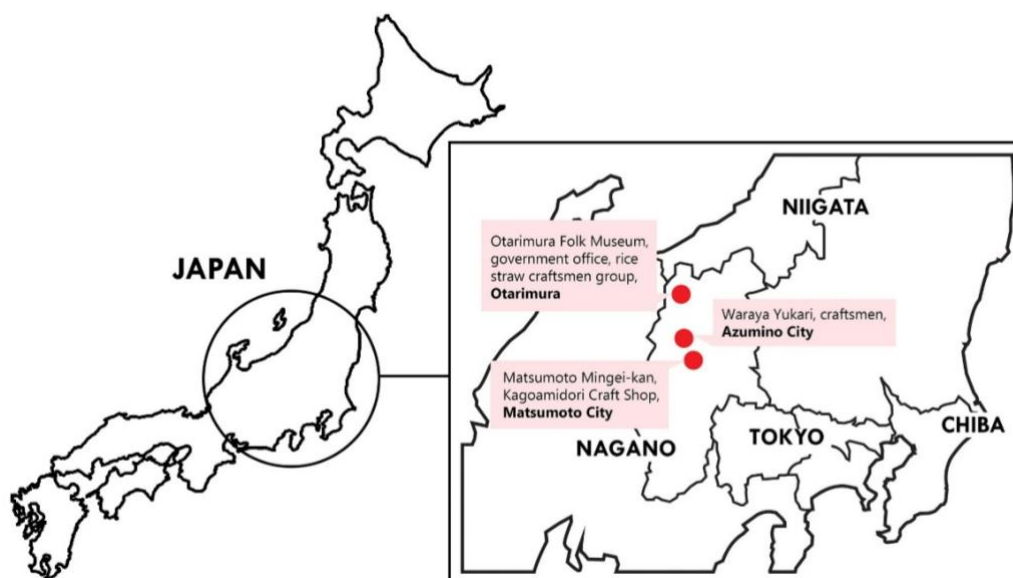


Figure 1. Research areas in Nagano Prefecture

Japanese rice straw culture is strongly based on *moushiwakenai* and *mottainai* ways of life. *Mottainai* is defined as ‘something should be left as it is even though it is useful and that is a shame to waste. Another word is *moushiwakenai* or the word for apologies from the heart in response to using a resource provided by nature in a wasteful way (Ueda & Ooga, 2010). These two ways of life have created a rice straw utilization culture as a form of respect by not wasting what God and nature have provided. The symbiotic function (functional life cycle) approach is also applied in this culture as a form of harmony between humans and nature from the preliminary stage (separating grain from the straw, cleaning), treatment stage (drying, weaving, tying, and forming), utilization stage (use for human life), to disposal stage (returning straw to nature as fertilizer) for growing up the next rice paddy and always rotating with that pattern continuously. In Kutsuki in Takashima County, the following is stated: “don’t waste your straw sandals even if they break” because people recognize that straw could be returned to the rice field as fertilizer. In the Tohoku region, rice straw is just as valuable as rice because of the many benefits that may be obtained from this material.

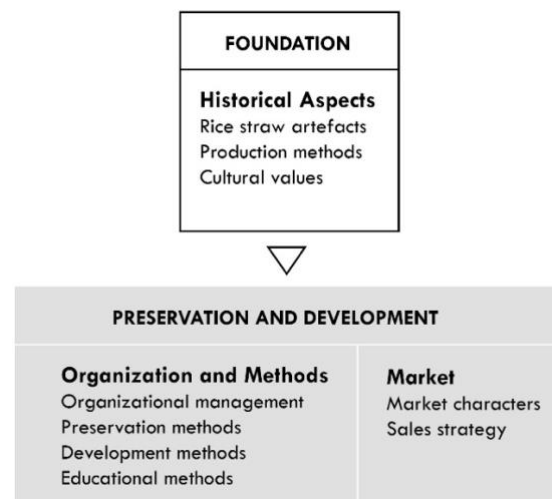
Rice straw culture has spread almost throughout all areas of Japan with each utilization characteristic and production method. Some areas in Japan that are famous for their rice straw culture and still exist today include Aomori, Niigata, Akita, Miyazaki, and Nagano prefectures (Purwandaru et al., 2020). However, in its development, this culture has been increasingly decreasing; in 1978, there were only 400 workshops left for making straw rope, which was down from 2,000 in 1967 (Miyazaki, 1992). Through the author’s interviews with farmers in Itoigawa, Niigata Prefecture, data were also obtained that demonstrated that the last traditional rice cultivation and the utilization of straw were carried out until 1980. Ironically, presently, the local community is not interested in farming activities, which has resulted in a decreasing number of farmers.

However, currently, preservation and development programs have been initiated by several craftsmen, government, and handicraft sellers to increase public awareness of Japanese rice straw culture. Therefore, this research was conducted to explore rice straw culture from the production process, the development of craftsmen’s organizations and designs, and the marketing and sales aspect of the rice straw crafts. This research was carried out in several rice farming areas of Nagano prefecture, which is one of the potential rice-producing areas in

Japan (Ryotaro, 2009). Nagano produced approximately 181,200 tonnes of rice in 2022, with *Koshihikari* as the most widely grown rice variety (Ministry of Agriculture, 2022). Three locations were selected with the consideration of rice straw workshops, museums, and craft shops, becoming the elements that support the preservation and development of rice straw culture in Nagano.

## RESEARCH METHOD

In this research, the main objective is to understand the character of rice straw crafts in Nagano Prefecture in a historical context, as well as its current development. Therefore, as an initial stage of research, exploration was conducted at two historical museums in Nagano to determine utilization, production methods, and value produced from artefacts. This data were essential for collection because traditional aspects are the foundation of the development of straw crafts in Nagano. The following area is the aspect of the preservation and development strategy, whether initiated by the government or the private sector, as well as initiated by the craftsmen themselves. As such, this research focuses on understanding the current production methods of harvesting, material preparation, production, and efforts to preserve the craft through the management of craftsmen organizations, and strategies for the development of straw crafts.



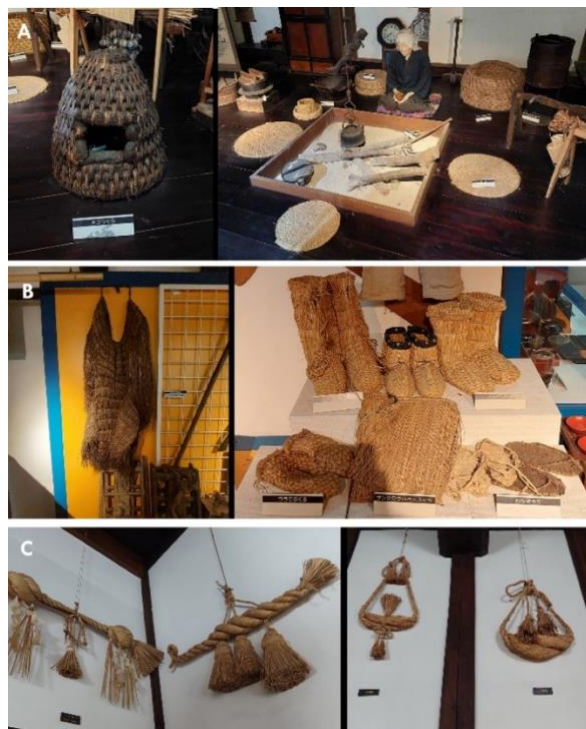
**Figure 2.** Research method of preservation and development of rice straw crafts in Nagano Prefecture

The final aspect of this research is a market analysis, with a focus on the market characteristics of rice straw craft products and the methods of marketing the product to the wider community. To obtain data on the historical aspects of the market, the method used was a field survey in direct discussion with stakeholders such as the community and craftsmen,

local government, local museums, and rice straw craft shops.

## RESEARCH RESULTS

Based on a field survey at the Otirimura *Kyoudo-kan* or town museum, traditional people in the Nagano Prefecture have long used rice straw for their daily lives and rituals, as can be seen from how the scenery of traditional family life in a house 100 years ago was in the *irori* area or central place in the house for gathering, representing a place for heating, lighting, and cooking (Ueda, 2013). Inside this area, there are various crafts made using rice straws for *enza* (seating), baby crib, *nekotsugura* (cat house), a place for serving rice, and for rituals.



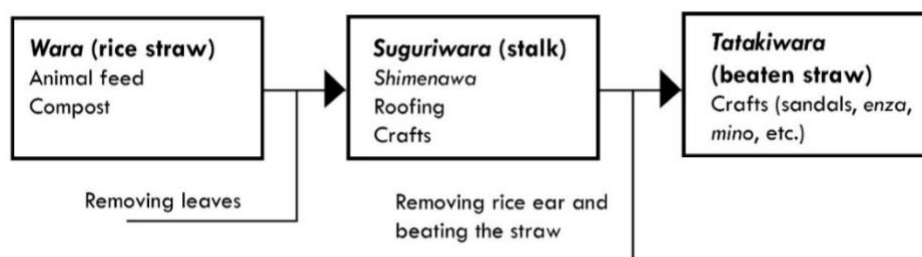
**Figure 3.** Traditional Nagano community life in the *Irori* area or traditional living room (a), utilization of rice straw for other utility purposes (b), and for *shimenawa* (c) displayed in museums

For outdoor activities, the museum also displays the utilization of rice straw materials for boots, *warazouri* (sandals), *mino* (jacket), hats, and various other utilitarian objects. Furthermore, at the Matsumoto Folkcraft Museum, various *shimenawa* designs are exhibited that reflect the characteristics of rice straw craftsmen in Nagano in the context of the rice straw production methods in rituals. These museums' collection prove that Nagano has strong roots in the traditional culture of straw in the past, where there are three villages known for their straw culture, namely Otirimura, Sakaemura, and Iijima.

The roots of the traditional rice straw culture in Nagano have become the foundation for the development of rice straw crafts in Nagano with a multi-aspect approach that underlies it, including production, organization, development, and the market.

## Production

Straw is harvested after the rice part is separated from the stalks. In Japanese rice straw culture this material is divided into 3 categories based on the material preparation process. The first is *wara* or rice straw that has just been harvested which is usually used for animal feed and compost. The second is *suguriwara*, or rice straw that has been separated from the leaves (*hakama*) and is commonly used for *shimenawa*, roofing, and crafts, while the leaves are usually used for packing materials and animal feed. The third category is *tatakiwara*, or *suguriwara* which has been beaten using wooden hammer which resulting a softer character of rice straw to weave. *Tatakiwara* is usually used for various crafts from *warazouri*, *enza*, and other crafts that require a soft straw character in the production process (Suzuki & Miyazaki, 2008). The *migo* or rice ears are also used usually for brooms or brushes, therefore in Japanese rice straw culture, all parts are utilized optimally. In terms of value, the more complex production method will produce a higher value crafts.



**Figure 4.** Rice straw categories in Japanese rice straw culture



In the Nagano Prefecture, there are two rice varieties commonly utilized for making handicrafts, namely *Koshihikari* and *Akitakomachi*. The rice straw from *Akitakomachi* has a thinner shape and a shorter node distance than *Koshihikari*. Therefore, *Koshihikari* straw is more widely used for crafts purposes. In terms of harvesting the rice straw process, in contrast to the traditional methods of the past, today, most rice farming areas in Japan are harvested using machines that effectively and efficiently collect the rice grain. This process produces broken rice straw and non-ideal crafting materials. Therefore, the craftsmen in Nagano usually grow their own rice to obtain the ideal straw output for crafts in the harvest season.

In this straw harvesting process, craftsmen usually either use *kama* or Japanese sickle. Specific harvesting machines are also used to harvest to cut from the bottom of the straw. After the rice straw is harvested, the *hasakage* method is implemented to dry straw using bamboo to hang it under the sunlight outdoors. The physical characteristics that indicate that rice straw is ready to be stored for the production process are when the colour turns light brown and dry. The drying time is approximately 10-14 days depending on the climate.



**Figure 5.** *Hasakage* rice straw drying method (left) and storage method (right)

To store rice straw, it tends to be stacked in a room with one direction position. According to the craftsmen at Otarimura, the recommended method of storing straw is in a hanging position to keep the straw's form straight and undamaged. In terms of production methods, in the culture of using Japanese straw, there are three main methods that are widely used, namely *nawa* or rope, *ami* or woven, and *tabane* or bundling, from which there are 26 variations of production methods, which are derivatives of these three main production methods (Miyazaki, 1995). For craftsmen in Otarimura, the most widely used production method found is weaving with the coiling approach due to the characteristics of *nekotsugura*, a local product that is widely known by the public and produced with the coiling method. On the other hand, the Azumino region's distinctive potential is the rice straw basket, and characteristic of the method used is *tawara ami*

or woven, which is commonly used to make bags and baskets.



**Figure 6.** *Nekotsugura*, rice straw basket (top), and production tools (bottom)

In the production process, the tools used are divided into those for material preparation and craft weaving process. For material preparation, in the *tatakiwara* production process, straw is softened in two ways, first of which is by using a mill, and the second by beating it with a wood hammer and a stone base. Meanwhile, in terms of craft production tools, in producing *nekotsugura* and straw baskets, simple tools are needed and are entirely self-produced, such as the tool to pull the straw during the coiling process which is modified from spoon metal, as well as wooden hangers to weave the baskets. The production time for *nekotsugura* is from seven to 10 days due to the dimension, production techniques, and the need for a large amount of straw for 1 product (9 bundles of *tatakiwara*), whereas straw baskets can be completed in 1 day because they require a simpler production process and a smaller quantity.

### Craftsmen Organization

The number of straw craft workshops number in Japan is decreasing. In terms of the age of the craftsmen, such as in Nagano, the average is 50 years and above. Therefore, as an effort to preserve the rice straw craftsmen, Otarimura local government took the initiative to establish an organization called *Otarimura Warazaiku Shokunin Guruppu* or the Otarimura Rice Straw Craftsmen Group which was founded in 2017. The establishment of this organization was carried out based on a government program called *Chiiki Okoshi Kigyoujin* by inviting profitable company representatives to the village for 6 months to 3 years to explore local potential for development until finally *nekotsugura* became a local potential that characterizes Otarimura.



**Figure 7.** Otarimura rice straw craftsmen group (top) and certified craftsman label (bottom)

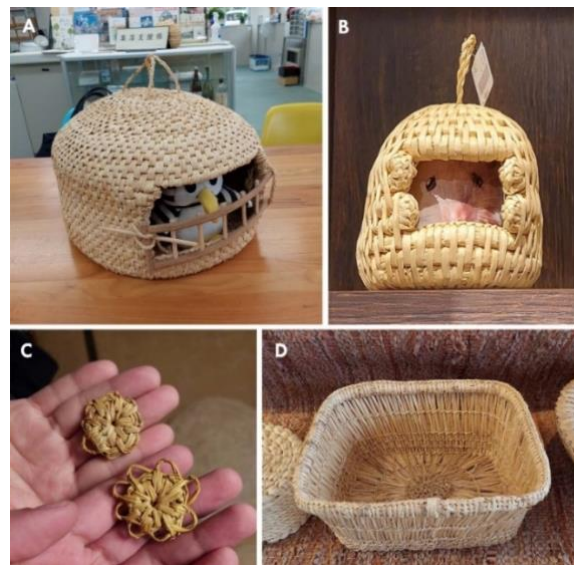
In forming this organization, the government facilitated workshops on making *nekotsugura*, which are held twice a week to increase the local community's interest in becoming rice straw craftsmen. The area is also facilitated by the Otarimura government as the gathering place of the craftsman community and for holding workshops.

From this activity, approximately 20 members produce handicrafts. Even though it takes a long time to produce, *nekotsugura* has positive sales potential, particularly for markets in urban areas in Tokyo, Chiba, and Saitama. According to the craftsmen's statement, *nekotsugura* have a product age of up to 10 years. Government support for straw craftsmen in Otarimura may also be seen from the certification of craftsmen who meet quality requirements to be sold by giving special labels as part of the product they sell, to provide insurance in terms of quality for their buyers, especially online buyers who cannot purchase the product directly.

### Crafts Development

The main straw craft product produced by craftsmen in Otarimura is *nekotsugura* with a traditional design shape. However, some craftsmen made developments with functional considerations, namely by making a mobile *nekotsugura* that may be carried anywhere in the same way as a cat bag for traveling in the modern day. In terms of form, the product has not changed significantly from the traditional *nekotsugura*. However, in terms of function, the craftsmen saw a market opportunity for a new design. Another example of development by

Otarimura craftsmen is them making a miniature of *nekotsugura* named *nezumitsugura* or mouse house for decoration purposes with the typical Japanese *kawaii* or cute approach (Nittono et al., 2012). The consideration of *mottainai* or the attitude of regret when not utilizing the remaining material is also a concern because in the production process of *nekotsugura* there, a lot of the rice straw is disposed of without being used. Therefore, some craftsmen develop leftover materials to be used as *kazarimono* or decorations by making the most out of the characteristics of the existing waste.



**Figure 8.** Design development of mobile *nekotsugura* (A), *nezumitsugura* (B), *kazarimono* made from straw waste (C), and rectangular basket of Azumino (D)

Meanwhile, at Azumino, craftsmen develop rice straw basket products, which were first inspired by traditional baskets for carrying manure and crops in fieldwork. In terms of innovation, craftsmen develop new products for form and function improvement from the traditional basket. Traditionally, the top side of the basket is less mobile because it is not sturdy, and this part is made thicker as the solution. In terms of shape, all traditional baskets have a circular shape. Therefore, a new rectangular shape is developed to give a more modern impression to accommodate more varied objects.

### Sales and Marketing

There are several strategies that have been undertaken to introduce rice straw crafts to the wider community. In Otarimura, through a national television broadcast covering the production of *nekotsugura*, the product was successfully recognized by the public and increased sales, as seen in the sales data, in which 24 pieces were sold, in contrast with the usual up to 10 pieces per year. Other programs supported by the government



introduce products through sales at one of the leading local stores in the village, namely Michinoeki-Otari, by providing a special space for rice straw handicraft products and local bazaar activities. In Azumino, apart from being marketed in the craft shop gallery in Kagoamidori Matsumoto City, social media approaches are being implemented to introduce rice straw basket crafts, as well as to participate in various local and national handicraft exhibitions.

In terms of sales, there are various methods used by rice straw craftsmen, including government-facilitated systems, such as the *Furusato Nouzei* scheme or the Japanese income tax system in Otarimura. This system allows Japanese people to freely select the area in which they pay taxes, and as a return from villages ([Kato & Yanagihara, 2021](#)), such as Otarimura, the local government will provide *nekotsugura* as a representative product of the village for free. Through TV broadcasts of Otarimura rice straw craftsmen, the government aims to increase the level of *Furusato Nouzei* for Otarimura tax income. Another sales scheme is through a shop with a buy-up or consignment scheme with a sales percentage agreed on by both parties.



**Figure 9.** Straw craft products displayed at Michinoeki-Otari and Kagoamidori Matsumoto craft shops

## DISCUSSION

Rice straw crafts in Nagano are preserved and developed by several workshops. In obtaining raw materials, an adaptation of harvesting methods is necessary to obtain the optimal dimensions for crafts because the rice straw currently produced from modern harvesting methods has a short and broken character. Therefore, rice straw craftsmen usually become farmers or vice versa to be able to harvest rice straw to obtain the ideal criteria for crafts. In terms of development, five elements support the existence of rice straw crafts in Nagano.

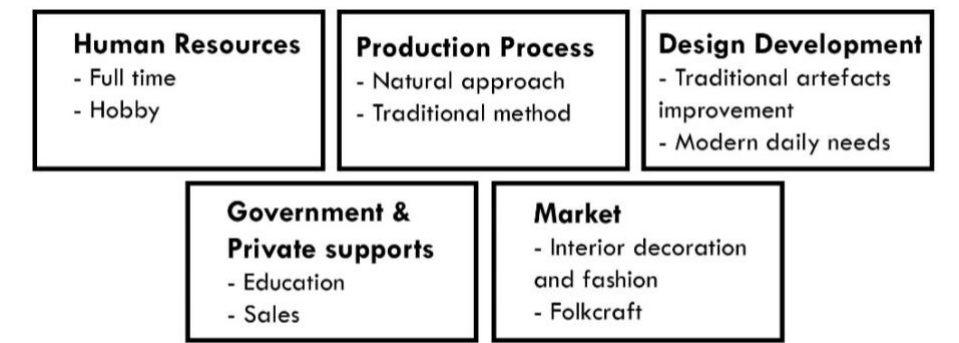
The first element is human resources, which are divided into full-time rice straw craftsmen and those who crafts as a hobby. From these two categories, the quality crafts produced by full-time craftsmen have a greater attention to detail, whereas production results with a hobby background are not as detailed because the goal is only to occupy their spare time. The second element is production, where all craftsmen in the production process use a natural or non-chemical approach. For example, rice straw is dried using the *hasakage* method, and to avoid insects, some craftsmen soak the straw in hot water or smoke it with wood or burnt straw. This approach is used to maintain the natural character of rice straw so that it can be optimally experienced by the user through all sensory aspects. On the other hand, this natural approach still has a weakness in rice straw crafts because until the present, insects are occasionally found in the craft and still represent a problem for craftsmen to avoid. On the other hand, the concept of straw crafts produced by rice straw craftsmen still adopts local wisdom from Japanese rice straw culture, where there is a circle, in which, when the craft is broken, it is returned to nature to become fertilizer in the rice planting process. This ecological approach has also become educational material, both for the government and rice straw crafts shops.

The third element is design development. In this context, traditional artefacts are the main products produced by craftsmen, and traditional production methods have become the foundation for design development process. The development process is carried out using two approaches, namely by technically improving the quality of traditional artefacts and designing new crafts for modern daily use products. However, based on the craftsmen's perspective, the added value of rice straw crafts compared to mass products on the market today is in terms of beauty and the story behind the Japanese rice straw culture. In terms of development, there is

also an awareness of minimizing waste by making new crafts based on the character of existing waste.

The fourth element is support from the government and the private sector. These two elements play a major role in connecting craftsmen to buyers through various online and offline schemes. In this activity, the role of these two elements is also

important in educating the public regarding the story behind the product from Nagano rice straw crafts to produce attachment between craftsmen and consumers. The government and the private sector also provide alternative product sales schemes that can help product sales, such as *Furuzato Nouzei*, buy-up, and consignment.



**Figure 10.** Five elements that support the existence of rice straw craft in Nagano

The final aspect is the market, which is an important element for the existence of straw crafts because it becomes the motivation of the craftsmen in terms of economic factors. Based on the results of discussions with craft shop owners, there are two categories for the rice straw craft market, the first of which is the market category for interior decoration and fashion. In this category, most product buyers are people with families who have a higher income and are starting to have awareness of quality and safe products for their families. Meanwhile, the second category is the market for rice straw folkcraft. In this category, the majority of buyers are above the level of the decoration product market in terms of knowledge because their background in buying product is based on an appreciation of deep cultural values behind traditional artefacts. Currently, the demand for rice straw handicraft products in Japan is high because the community is sufficiently educated and wants to know more about this straw culture through the products, as can be seen from 2019-2022 sales data, which shows an increase in straw handicraft products.

## CONCLUSION

Rice straw crafts in Otirimura and Azumino, Nagano Prefecture are characterized by the use of coiling and basket weaving methods. This craft requires a long production phase, from harvesting, drying, cleaning, sorting material to the production process. This background provide straw crafts with a strong attachment to cultural, environmental, and craftsmanship factors, offering a backstory as the product's strength in the market. With the different character of the craftsmen's personalities,

production output also varies and makes it difficult for this craft to reach the set quality standards. Therefore, only experienced, or full-time craftsmen, can produce high quality crafts for commodity product. The market for rice straw crafts in Japan is currently increasing, though the number of craftsmen is decreasing, and most craftsmen are old. Therefore, with the existing market potential, support from the government and the private sector is very important, as has been done in Nagano in educating in terms of culture, craftsmen, and products through various media. With increasing public awareness, interest of young generations with rice straw crafts have begun to appear in Japan, such as in Nagano, Miyazaki, Kyoto, and Aomori Prefecture.

## ACKNOWLEDGMENTS

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#### List of Resource Persons/Informants

Tagami Hirokazu (62 years), farmers, interview on 29<sup>th</sup> September 2022 at Itoigawa rice terrace, Itoigawa, Niigata Prefecture.

Aizawa Ayumi, Otirimura Tourist Area Promotion staff, interview on 2<sup>nd</sup> October 2022 at Otirimura Government Office, Nagano Prefecture.

Akira Tatsumi (60 years) Otirimura craftsmen, interview on 3<sup>rd</sup> October 2022, at Kazuenoyuki guesthouse, Otirimura, Nagano Prefecture.

Kiyofumi Hosozawa, Otirimura senior craftsmen, interview on 5<sup>th</sup> October, at Otirimura Rice Straw Craftsmen Group Workshop on 4th October 2022.

Seiichiro Ito, owner of Kagoamidori Matsumoto, interview on 8<sup>th</sup> October 2022 at Kagoamidori Shop Matsumoto City, Nagano Prefecture

Yukari Suzuki, owner of Waraya Yukari, interview on 7<sup>th</sup> October 2022 at Waraya Yukari Workshop, Azumino, Nagano Prefecture