Characteristics and Challenge of Traditional *Jamu* Production in Yogyakarta: Case Study of Seruni Putih Women Cooperative

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Abstract. Traditional *jamu* production in Yogyakarta has been conducted for centuries and is attached to the local wisdom and culture. This study is aimed to clarify the characteristics and analyze the challenge of traditional *jamu* production in Yogyakarta. This study is conducted through a case study at Seruni Putih Women Cooperative in Kiringan Village which is known as the Tourism Village of Traditional *Jamu* in Yogyakarta. From this study, it is clarified that traditional *jamu* production in Kiringan Village is predominantly carried out by the Seruni Putih Women Cooperative and still relies on traditional recipes and methods passed down through generations, using a variety of local herbs, spices, and other natural ingredients. However, traditional *jamu* production in Kiringan Village has been facing several challenges, namely difficulty in matching the consistency, attractive packaging, and efficient distribution networks; aging generation among *jamu* producers; and limited access to high-quality raw materials, reliable supply chains, and modern production equipment.

1 Introduction

Jamu (herbal medicine) is an important part of Indonesia's cultural heritage that must be preserved, developed, and used to improve people's health, fitness, beauty, and prosperity [1]. According to a study by Geertz (1983), as cited in [2], *jamu* is a traditional medicine derived from a culture known to the Javanese people since ancient times. [3]'s research later revealed that, unlike with the Javanese, the use of *jamu* in various regions and/or ethnic groups in Indonesia had not been thoroughly documented. However, *jamu* industry has grown in popularity because of people's increased interest in the qualities of herbal remedies for bodily immunity, particularly during the coronavirus pandemic in Indonesia [4]. While *jamu* is frequently criticized as unscientific and dismissed by the formal public health sector, this study highlights the importance of understanding its role in the lives of many women. The

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small *jamu* industry is closely related to women's lives because, according to previous research, women make up most *jamu* users and most *jamu* sellers [5, 6].

[5]'s research demonstrated how *jamu* sellers' participation in commercial activities has allowed them to expand their social networks, improve their social status within the community, and, in some cases, within their households. Hence, besides the health and cultural aspects, the development of *jamu* industry where women play both roles as users and sellers can be seen as an actual example of the importance of women's participation in empowering communities through social and economic activities.

Moreover, the history of *jamu* culture in Indonesia is believed to have existed since the 8th century AD, in which it was chronicled in ancient manuscripts, orally transmitted through generations by Indigenous people of the archipelago and preserved within the communities [7]. Thus, the development of *jamu* industry in Indonesia has strongly relied on connection and cooperation among local people. As is commonly seen in other agricultural sectors, the expansion of the *jamu* industry across Indonesia has also been aligned with the roles of cooperatives in local areas.

According to [8]'s research, cooperatives engage in community empowerment to increase members' income, reach out to small and medium-sized businesses in the surrounding community, and increase the number of cooperative members. Cooperatives as one of the economic institutions in Indonesia are different from other economic institutions. Indonesia had 127,124 cooperative units in 2020 [9]. This figure increased by 3.31% from the previous year. The number of cooperatives in Indonesia has risen to its highest level in the last 15 years. The Ministry of Cooperatives and Small and Medium Enterprises (SMEs) expects the cooperative sector to contribute 5.5% of the national gross domestic product (GDP) in 2024.

[10] stated that cooperatives can be interpreted as business entities that have members, where each member has their duties and responsibilities. Each member has equal voting rights in every decision that will be taken because it is based on deliberation and consensus. According to Law No. 25 of 1992 on cooperatives, Chapter I, Article 1 Paragraph (1) states that cooperatives are business entities made up of individuals or cooperative legal entities with activities based on cooperative principles, as well as a people's economic movement based on the principle of kinship. Furthermore, Article 3 of Law No. 25 of 1992 on cooperatives mandates the following cooperative objectives: to advance the welfare of members in particular and society in general, as well as to participate in the development of a national economic order to create an advanced, just, and prosperous society founded on Pancasila and the 1995 Constitution.

Women's cooperatives, on the other hand, are organizations formed to improve women's living standards by providing savings and business capital loans to help grow micro and medium-sized economies [11]. Women's cooperatives are groups of women who are expected to help increase family income and overcome economic difficulties by focusing on daily life fulfillment [12] and motivating workers [13]. Women and cooperatives have an important relationship, therefore their role needs to be increased continuously for several reasons, namely [9]: (a) women are important actors concerning poverty alleviation programs, (b) women are important actors and are directly involved in improving family welfare, and (c) women as individuals need media in terms of self-actualization so that they can play a bigger role than just being a housewife. [14] expressed a similar view, stating that women's contributions are very important and have a significant impact on economic activities in various sectors, including business, agriculture, and others.

[9] describe the presence of women's cooperatives in Indonesia: (1) According to the type of business, they are savings and loan cooperatives, multi-business cooperatives, consumption cooperatives, and production cooperatives. (2) Women have an advantage, particularly in collaborative management. These advantages manifest in tenacity, honesty, and thoroughness in dealing with various dynamics of women's cooperatives issues. (3) In

the context of poverty and increasing family welfare, the role of women is very important, because cooperatives can be a very strategic platform for improving family welfare. Cooperative activities can also be used as a medium for women's self-actualization. (4) The existence of women's cooperatives has a significant impact on gender inequality, health, reproduction, malnutrition, infectious diseases, and sanitation. (5) Women's cooperatives contribute significantly to the government's efforts to address national issues such as health, education, unemployment, and the expansion of capital services for small communities. Therefore, the presence of women's cooperatives aims to help improve the household economy and achieve gender equality by giving women the freedom to make decisions in economic activities in the various sectors in which they are involved [11]. This study focuses on women's cooperatives that produce *jamu*, in the context of the economy, which could offer economic opportunities for the locals [15].

2 Research method

2.1 Study Area

Kiringan is a rural farming village located in the southern Bantul district of Yogyakarta, roughly 30 kilometers to the south of the city, and is home to a majority of traditional *jamu* producers (Fig.1). Yogyakarta, as the site of this study, has several advantages. It remains a hub for traditional and modern *jamu* practices. It is also close to both rural and urban contexts, which is useful for analyzing discourse about *jamu* in various socioeconomic contexts.

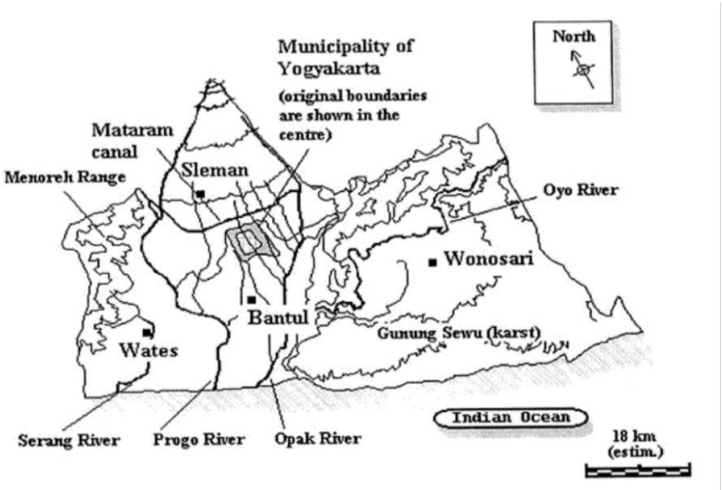

Fig. 1. Physical map of Yogyakarta Province. (Source: [16])

Kiringan Village is renowned as a tourism destination for education of traditional jamu production. However, not everyone in the village is involved in making jamu. Kiringan was chosen for this study because it is a recognized center for traditional jamu production, and the Seruni Putih Women Cooperative stands out as one of the largest and most prominent cooperatives in the area.

2.2 Data Collection and Analysis

Data collection involved in-depth interviews, focus group discussions (FGDs), observations, and document reviews. Participants for the interviews and FGDs were purposely selected

based on their involvement and experience in traditional jamu production in Kiringan Village. Key informants included the village head, the leader of Seruni Putih (SP) Women Cooperative, and several cooperative members.

SP's leader was interviewed about the cooperative's history, current operations, challenges, and future plans. The jamu production of the SP leader was selected as a case study for traditional jamu production in Kiringan village because it was the largest and most prominent. All data from the interviews and FGDs were transcribed and thematically analyzed. Verbatim discussion points were included to provide evidence supporting the findings.

3 Results and discussion

3.1 Characteristics of Traditional Jamu Production in Kiringan Village

The traditional *jamu* production in Kiringan Village, Bantul Regency, Yogyakarta Province is predominantly carried out by the Seruni Putih Women Cooperative. *Jamu gendong* is a popular traditional herbal drink in Indonesia, and the Seruni Putih Women Cooperative has been playing a crucial role in preserving this cultural heritage. The *jamu* producers are still relying on traditional recipes with several varieties of *jamu* drinks available year-round and methods passed down through generations [17], using a variety of local herbs, spices, and other natural ingredients. Also, the tools and equipment used in the production process are often handmade and traditional in nature, highlighting the artisanal nature of this industry.

Fig. 2. Traditional tools for *jamu* production
Details:
a) *Jamu's* seller with bicycle transportation
b) Process of making *jamu* with the method of squeezing a mixture of herbal ingredients
c) *Keronjot* for keeping the materials
d) *Caping* for a traditional hat made from bamboo for the *jamu*'s seller
e) *Bathok* made from coconut shells as a cup for one portion of *jamu*

According to our observations, the *jamu* production in Kiringan village is primarily a family-based enterprise, with women playing a central role in the entire process, from sourcing the raw materials to processing and marketing the final products [18]. The characteristics of traditional *jamu* production in this region are deeply rooted in the local cultural traditions, indigenous knowledge, and the unique environmental conditions of the area, which have collectively shaped the distinctive features of this traditional industry over time. *Jamu curah* is well-known by the local people as *jamu* production in Bantul with the method of squeezing a mixture of herbal ingredients (Fig.2).

Jamu producers usually sell their products in a traditional way known as *Jamu Gendong*, a method of carrying *jamu* on their backs with a special container called *Keronjot* and wearing a traditional hat called *Caping* to go from house to house or stay in one place around housing areas. The transportation methods used by *jamu* producers vary, they can use bicycles, motorcycles, or even on foot, depending on their economic condition. In the past, *jamu gendong* was a common sight that *jamu* producers were selling *jamu* on foot. Recently, some *jamu* sellers have adopted new strategies, such as establishing permanent stalls or kiosks to sell their products, and the majority use motorcycles to reach a wider market, while others have leveraged digital platforms to expand their customer base [18]. The uniqueness of *jamu* production in Kiringan village is the use of *bathok* as a cup to serve the *jamu* drink which is rarely found in other places in Java. They still kept the *bathok* tradition, which is a biodegradable serving cup made from coconut shells. The use of *bathok* has existed in the village since the 1950s when the first producer of *jamu gendong* emerged in Kiringan village.

In the traditional production of *jamu*, managing physical, chemical, microbiological, or allergen hazards is crucial to ensuring the safety of the final product. Physical hazards, such as foreign objects like stones, glass, or metal fragments, can be controlled by using sieves, strainers, and filtration systems during the preparation process [19]. Regular maintenance and inspection of *jamu* production utensils can also help prevent contamination. Chemical and microbiological hazards, including pesticide residues and harmful bacteria, can be managed through the thorough washing and proper handling of herbs and other ingredients. Traditional *jamu* producers in the area often rely on natural cleaning agents, such as lime and salt, to disinfect tools and utensils.

3.2 Development of Seruni Putih Women Cooperative in Kiringan Village

Residents of Kiringan village, particularly women, primarily engaged in selling traditional *jamu*, formed the Seruni Putih Women Cooperative. After Bantul's 2006 earthquake, this cooperative was established. The residents of Kiringan village had physical challenges due to the earthquake and were generally frustrated by it. In addition, the people of Kiringan village suffered greatly due to the earthquake, which brought about economic difficulties. The head of Kiringan village invited them to form the Seruni Putih Women Cooperative to aid in the community's uplift. Moreover, the foundation of this cooperative aimed to revitalize the spirits of women selling traditional *jamu* in Kiringan village and to strengthen social capital. In line with the study by [11], cooperatives have an essential role in empowering the community, especially women as a marginalized group, to revive the household economy.

Actions are taken to increase this capital by funding and training traditional *jamu* sellers in Kiringan village. That was still a period of low capital for the Seruni Putih Women Cooperative. Ultimately, the lack of capital was resolved by the head of the village and the leader of the cooperative. Based on the field interview, the cooperative applied for loans from multiple banks under the People's Business Credit (KUR) program. The loan aims to help women who sell traditional *jamu* with their capital and financial needs.

In 2007, the seller of traditional *jamu* joined the Seruni Putih Women Cooperative under the guidance of the Bantul Regency Office of Cooperatives, SMEs, and Industry. Cooperative activities include discussing, training, managing the area of traditional *jamu* sales, regulating the price of *jamu* per cup, savings, and loan capital. The Seruni Putih Women Cooperative also developed the instant traditional *jamu* business which was produced in groups by residents. The manufacture of the instant traditional *jamu* is also managed by the cooperative.

The Seruni Putih Women Cooperative had about 110 members in 2014. Then 22 new members joined this cooperative at the beginning of 2015. Now, it has 132 members, and its core administrators—the advisor, leader, secretary, treasurer, public relations section, and supervisor—organize its cooperative management (Fig.3).

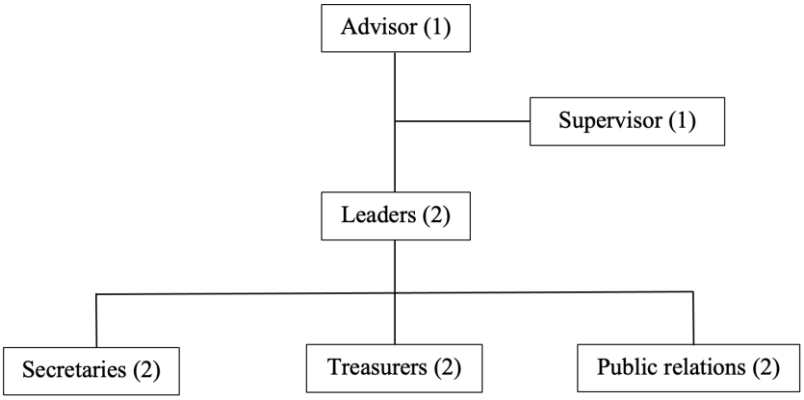

Fig. 3. The organizational structure of Seruni Putih Women Cooperative with the core administrators.

Table 1 shows the management role of the core administrators of Seruni Putih Women Cooperative. They are classified according to the job desk, age, gender, experience in *jamu* business, and job descriptions. The majority of the core administrators are female, with an average age of 55, which is classified as productive age. Owing to their family backgrounds, most of these individuals have an average of experience in running *jamu* business between 13 to 45 years. They hold regular meetings with the board once a month and with all members once a year. The annual financial report, the budget plan for the upcoming year's expenses, the record list of loans and savings, suggestions for increasing *jamu* production, and other management issues are all discussed at these meetings.

Kiringan village transformed into a tourist village over time. The cooperative welcomes visitors to tour herb gardens and learn how to prepare herbal remedies through various educational events. In addition, the cooperative constructed a library and carried out experiments to find ideas for processing *jamu.* These initiatives aimed to transform Kiringan village into a 'Tourism Village'. Moreover, various organizations, tourists, government agencies, universities, and schools visit the Seruni Putih Women Cooperative.

Table 1. The management role of Seruni Putih Women Cooperative's core Administrators

Core administrators (the number of people involved)	**Age**	**Gender**	**Experience in *jamu* business**	**Job descriptions**
Advisor (1)	63	Female	29	Offering guidance, security, instruction, and a plan for the establishment of a cooperative.
Supervisor (1)	64	Male	22	Examining the board decisions, sales, and financial aspects.

Table 1. Continued

Leaders (2)				
Leader	54	Female	39	Managing board meetings and expanding production, finances, trade, and economy.
Vice leader	53	Female	23	The representative of the leader when the leader is not present.
Secretaries (2)				
Secretary I	43	Female	13	Creating the meeting notes, completing the membership lists book, and organizing the core administrators' job descriptions.
Secretary II	58	Female	38	
Treasurers (2)				
Treasurer I	62	Female	45	Preparing the financial report and giving members more access to loans based on their qualifications.
Treasurer II	56	Female	32	
Public relations/PR (2)				
PR I	45	Female	21	Arranging some joint activities related to *jamu* production, processing, marketing, and village promotion to attract visitors.
PR II	52	Female	25	
Average	**55**		**29**	

3.3 Case Study of Traditional Jamu Production in Kiringan Village

To understand the current condition of traditional *jamu* production in Kiringan village, the leader of Seruni Putih Women Cooperative (SP leader) was interviewed as a case study. Table 2 shows the profile of *jamu* production conducted by the SP leader.

Table 2. Profile of case study of traditional *jamu* production

Age of producer	54 years old
Number of family members	6 persons
Educational background of producer	Elementary graduated
Years of producing *jamu*	39 years

The SP leader began *jamu* production when she was still 15 years old as the third generation of traditional *jamu* artisans in her family. According to [20], about 70% of family-owned businesses fail to survive in the second generation, and 90% are no longer run by the original family's third generation. However, the case of the SP leader is different and tends to succeed from the first generation to the third generation and prospectively continue to the following generation. Traditional *jamu* production in the SP leader's family was started by her late grandmother in around 1955 before being passed on to her mother and herself. This finding is in line with the previous study on the knowledge and skills gained from the mother [6]. After finishing elementary school, she decided to help her mother in making *jamu* at her house before getting married at age 20. She now has one daughter who is working as a nurse in a local clinic but sometimes also helps her make *jamu* together at home. Besides *jamu*

production, currently, the family income comes from various sources, including other on-farm activities such as paddy, fruits, vegetables, and livestock that are mainly managed by the SP leader's husband and income from her daughter's family. Although it may not be their main source of income, the SP leader hopes her daughter can continue their family's *jamu* tradition in the future.

The SP leader produces many varieties of traditional *jamu*, both in liquid *(jamu curah)* and powder *(jamu instant)* types. The liquid type is a ready-to-drink *jamu* that is usually put in a 330 ml or 600 ml plastic bottle or a 1.7 L bin bottle. Customers can either buy it in a bottle or be directly served in the store using a *bathok* cup (Fig.1). On the other hand, the powder type is made in the form of an instant drink, which customers can adjust their own taste and serve by themselves at home just by pouring the powder and hot water into the cup. The powder type has recently attracted attention from customers as it can be preserved longer for up to one year and is easy to bring anywhere. Currently, the SP leader makes 34 varieties of *jamu* depending on the order from customers, with 6 varieties, namely *Beras Kencur, Kunyit Asam, Jahe Merah, Temulawak, Pegel Linu, and Daun Kelor* are the main *jamu* products that are daily produced due to high demand from customers. For these 6 varieties, she can produce around 4 kilograms per day that can be made into 26 bottles of 100 grams powdered instant *jamu* for each variety. Each bottle is priced at IDR 20,000 when sold in retail and IDR 15,000 when sold to resellers.

In producing *jamu,* the SP leader mostly buys raw materials from farmers around Kiringan village, who mainly reside around the Imogiri area. Raw materials, such as ginger, turmeric, *temulawak* (Javanese ginger), and other materials are supplied by those farmers. Meanwhile, other herbs and spices that are used to give taste to the *jamu,* e.g. clove, nutmeg, cinnamon, and tamarind, and palm sugar are supplied from local markets around Kiringan village. However, raw materials supply from local farmers are not always stable. As many farmers in Imogiri area do not actually conduct proper cultivating, but instead are still considered as harvesting wild plants from surrounding forests, there are times that the SP leader faced difficulties in securing raw materials for her orders. Due to this condition, she had to fulfill raw materials from different middlemen in local markets. Hence, these challenges can lead to a change in the taste of her products because raw materials used as ingredients come from various sources.

In selling *jamu* products, the SP leader uses different distribution channels. She mainly sells *jamu* in her store at home and receives orders from her long-time customers and resellers. She also joins many events such as festivals or bazaars to promote her *jamu* production. Besides selling her products, as the leader of Seruni Putih Women Cooperative, she is also actively coordinating members of the cooperative to attend events as a group. The SP leader will collectively manage production from members and sell the products at the events under the Seruni Putih brand. Not only attending events together with cooperative members, the SP leader also supplies products made by her members on a daily basis to fulfill demand from her own customers. Through these efforts, traditional *jamu* products from Kiringan village can be widely known by many people, especially since Kiringan village became a tourist destination for learning the traditional *jamu* culture in Yogyakarta Province. The SP leader and other SP members have tried their best to always provide *jamu* products whenever there are groups of tourists visiting their village.

3.4 Challenges of Jamu Production Development in Kiringan Village

The traditional *jamu* production in Kiringan village, despite its rich historical and cultural significance, faces numerous challenges threatening its sustainability. The advent of industrialized *jamu* manufacturing, characterized by standardized production techniques and advanced marketing strategies, has created a tough competitive environment for traditional

jamu artisans in Kiringan village. These artisans often find it difficult to match the consistency, attractive packaging, and efficient distribution networks of their industrial counterparts, leading to a gradual decline in their market share. Traditional *jamu* producers also face substantial resource constraints. They have limited access to high-quality raw materials, reliable supply chains, and modern production equipment. The reliance on local, often scarce, resources, combined with insufficient investment and infrastructure, hampers their ability to improve the quality and consistency of their *jamu* products. These factors collectively undermine the competitiveness of traditional *jamu* production in Kiringan village.

Furthermore, the demographic profile of traditional *jamu* producers in Kiringan village compounds these challenges. Most artisans are elderly, with the average age of key members in the Seruni Putih Women Cooperative being 55 years old. The younger generation shows little interest in continuing the craft, preferring other economic pursuits. This generational gap poses a significant risk to the sustainability of traditional *jamu* production, as there are few skilled and motivated successors to carry on the tradition. On the other hand, the issues associated with *jamu* production also go beyond gender dynamics. From the history and culture of *jamu* [21], female customers typically experience discomfort and embarrassment while buying *jamu* beverages for women's health from male vendors, as these items often deal with delicate matters like reproductive health, menstrual discomfort, and fertility. Gender norms and societal expectations might intensify feelings of unease, causing women to refrain from purchasing necessary health supplies when they are sold by male vendors [22]. This hesitancy not only hinders women's ability to obtain crucial health remedies but also has an impact on the sales and distribution of these specific *jamu* products. Guaranteeing constant quality and safety in the manufacture of traditional *jamu* necessitates careful attention to the sourcing and processing of ingredients, which may be both laborious and time-consuming.

In addition, *jamu* producers must negotiate a competitive market while complying with regulations that regulate herbal medicines. Female producers face a dual challenge: they need to build trust with their clients, who may have a preference for female vendors due to privacy concerns [22], while also navigating the intricacies of production and distribution. These obstacles emphasize the necessity of establishing supportive networks and training programs that empower female *jamu* producers, enabling them to fulfill the demand for these vital health products while upholding stringent standards of quality and safety.

4 Conclusion and recommendation

The traditional *jamu* production in Kiringan village, located in Bantul Regency, Yogyakarta Province, represents a rich and unique industry that has been passed down through generations. The Seruni Putih Women Cooperative, established after the 2006 Bantul earthquake, has been instrumental in preserving and supporting this traditional practice. However, the industry faces significant challenges that threaten its sustainability, including intense competition from industrialized *jamu* producers, an aging workforce with few young successors, and limited access to essential resources required to maintain product quality and consistency.

To address these obstacles and ensure the preservation of this local wisdom, a comprehensive strategy is essential. This strategy should harness the strengths of the Seruni Putih Women Cooperative and the resilience of the local community to overcome the industry's challenges [4, 23]. Further research into innovative solutions, along with policy support to provide the necessary resources and infrastructure is crucial for safeguarding the future of traditional *jamu* production in Kiringan village and similar communities across Indonesia.

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