

Acculturation of Colonial Industry and Javanese Agrarian Culture in Mangkunegaran Sugar Factory

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ABSTRACT

Sugar factories from the colonial era throughout Java are part of an important industrial heritage because they have witnessed the glory of the sugar industry in the past, as well as a sign of the entry of modern industry to the Java. One of the biggest sugar factory in Java was the sugar factory owned by Mangkunegaran Kingdom (*Praja Mangkunegaran*). The sugar factory represented a capitalist industrial culture that prioritized rationality. On the other hand, the process of supplying raw materials for sugar factories in *vorstenlanden* area (*Praja Kejawen*) was highly dependent on Javanese farmers who were strong with their agrarian culture. This paper aimed to figure out the interaction between the two cultures, which together carried out the sustainability of the sugar industry in Java. The interaction of these two cultures was seen from the components of the actors, activities, and places of the Tasikmadu Sugar Factory owned by *Praja Mangkunegaran* as a case study with a historical approach. The finding of the study indicated that there was acculturation between capitalist industrial culture and Javanese agrarian culture, which could be seen in the aspects of the actors, activities, and architectural layout of the Tasikmadu sugar factory. Acculturation between capitalist industrial culture and Javanese agrarian culture was a local wisdom of industrial heritage in Javanese Kingdom.

Key words : Acculturation, Sugar factory, Praja Mangkunegaran, Industrial heritage.

Introduction

Many researchers are interested in the study of sugar factories as part of the plantation industry. Even though it covers a variety of topics, research on sugar factories in the world tends to be technological, environmental, and socio-economic aspects. Research from Subramanian *et al.* (2015); Panda *et al.* (2000); and Senthil *et al.* (2020) are some examples of sugar factory research that takes the topic of technology and the environment in India. Meanwhile, the study by Wiseman (2001), Padmo (2007),

Wasino (2008), and Sudrajat (2010) are some examples of research on sugar factories with a socio-economic theme in Indonesia. In contrast to existing studies, this paper focuses on the study of architectural and cultural aspects in the sugar factory environment, especially sugar factories from the colonial era in the Javanese kingdom. The sugar industry in Java reached its peak in the 1930s, with 179 sugar factories producing 3 million tons of sugar per year. This industry experienced a decline after the 1930s due to falling sugar prices as a result of the world financial crisis (*malaise*) (FAO, 1997). The importance

of sugar factories for Java at that time was due to the great influence and role they played in the development of the Javanese royal city (Padmo, 2007). Sugar factories in Java are included in the grandest industrial heritage category compared to other industries at that time and have left a monumental footprint (Inagurasi, 2010; Asoka *et al.*, 2016). Research on sugar factory architecture illustrates that sugar factories with various architectural elements have unique and specific characters that are important as industrial heritage (Wijaya, 2002; Threesje *et al.*, 2012). Currently, sugar factories in Java are facing complex problems. The dynamics of social, economic, political, and environmental changes are the main issues causing the decreasing number of sugar factories and the decline in sugar production in Java (Sudrajat, 2010). Of the 231 sugar factories from the colonial era that existed in Java, only 45 are still operating (Nugroho, 2019).

The majority of sugar factories in Java are owned by the Dutch (Wiseman, 2001). Only a few are owned by indigenous entrepreneurs. Of the four Javanese kingdom rulers (*vorstenlanden*), the only kingdom that owned a sugar factory was *Praja Mangkunegaran*. Surakarta Sunanate, Yogyakarta Sultanate, and Pakualaman principality only rent out land to private Dutch entrepreneurs. The Tasikmadu sugar factory, founded by Mangkunegara IV in 1871, is the only sugar factory belonging to *Praja Mangkunegaran*, which is still actively operating today (Wasino, 2008). Sugar factories represent a capitalist industrial culture that promotes rationality in the sugar production process. On the other hand, the supply of raw materials in the form of sugar cane for sugar factories in the *Praja Kejawen* area is highly dependent on Javanese farmers who are still strong with their agrarian culture. This paper aims to figure out the interaction between the two cultures at *Praja Mangkunegaran's* Tasikmadu Sugar factory.

Background Study

Acculturation occurs when an immigrant culture mixes with the local culture. The presence of the Dutch as rulers on the island of Java led to a meeting of European and Javanese cultures with different ethnic and social structures. The entry of European culture fulfills the seven universal cultural elements that have been described by anthropologists (Soekiman, 2014). The seven elements of culture include elements of language, art, religion, liveli-

hoods, technology, social organization, and knowledge. European cultural values developing after the Industrial Revolution reflect a rational mindset that is anthropocentric in seeing and interacting with their environment. One of the rationalities of industrial thought is the formulation of standard guidelines for planning and building special housing in sugar factories (Van Moll, 1916).

Javanese cultural values represent the relationship between humans and God, humans and nature, humans and humans as social beings, and humans as individuals. The social life of the Javanese community aims to maintain social harmony that emphasizes the taste and spiritual aspects. The spirituality of Javanese society reflects in their conception of space divided into two types, namely homogeneous space, which has been purified (sacred), and inhomogeneous space, which has not been purified/regulated (profane). In the sacred realm, everything is in order, both human behavior and the structure of the building. Meanwhile, in an inhomogeneous space, everything is irregular because it is not/not yet purified (Eliade, 1959: 20-65). This concept applies in traditional Javanese residential architecture, which usually consists of certain building arrangements in such a way that there are cosmological centers associated with sacred-profane aspects (Tjahyono, 1989), (Kartono, 1999). The Javanese Hindu community recognizes the four cardinal directions as the direction of orientation, each of which takes the shade of gods (*Mancapat* myth) as an element of the cosmological balance of Javanese culture (Ronald, 2005: 38). The orientation of Javanese houses generally uses the North-South cosmic axis. Meanwhile, East-West is a cosmic axis belonging to aristocrats and palaces that must be distinguished (Frick 2010: 84-85).

Materials and Methods

The study focused on the Tasikmadu Sugar Factory owned by *Praja Mangkunegaran* as a case study, as seen in Figure 1. The Tasikmadu sugar factory was the only active sugar factory that has been built by the King of Mangkunegaran in the Javanese kingdom. KGPAA Mangkunegara IV commissioned experts from Europe to design and build the Tasikmadu Sugar Factory in 1871. This factory is a representation of industrial heritage built on a rational industrial mindset in the ecological environment of Javanese culture.

To find out the interaction between a rationalist

industrial culture and a spiritualist agricultural culture in the Mangkunegaran sugar factory, the study is focused on aspects of the actors, activities and places in the Tasikmadu sugar factory. By the nature and character of the problem, the study was conducted with a qualitative descriptive historical approach in the unique case (Creswell, 1998).

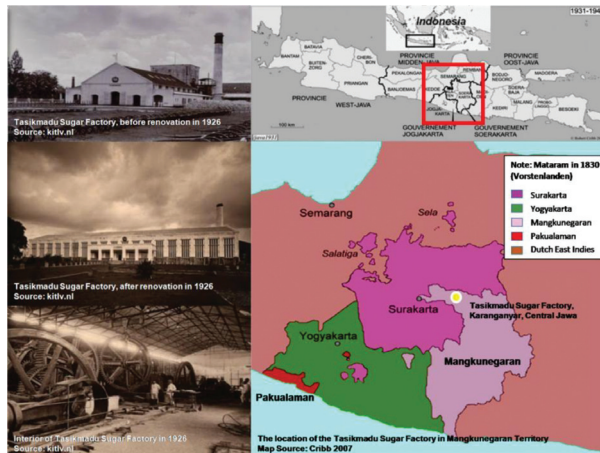


Fig. 1. Location and Photos of the Tasikmadu Sugar Factory Source: compiled from Cribb (2007) and kitlv.n

Results and Discussion

The Tasikmadu sugar factory setting system can be grouped into three aspects consisting of the actors, activities and places that are connected as a system.

Aspect of Actors

The aspect of the actors is related to all those directly involved in sugarcane production and processing at the Mangkunegaran sugar factory. There are figures with specific functions, who are very influential in the sustainability of the production of the Mangkunegaran sugar factory as shown in Figure 2.

The main actors in the Tasikmadu sugar factory setting system are the king with his *Patuh* (people who received a share of land control in return for their duty to help the king), the sugar factory administrature with all his employees, *bekel/demang* as the leader of the sugarcane plantation village with all his farmers, and the merchants conglomerates as the liaison with sugar consumers.

The king as the main figure in the sugar factory managerial activities was assisted by the royal family. To carry out processing activities at the sugar

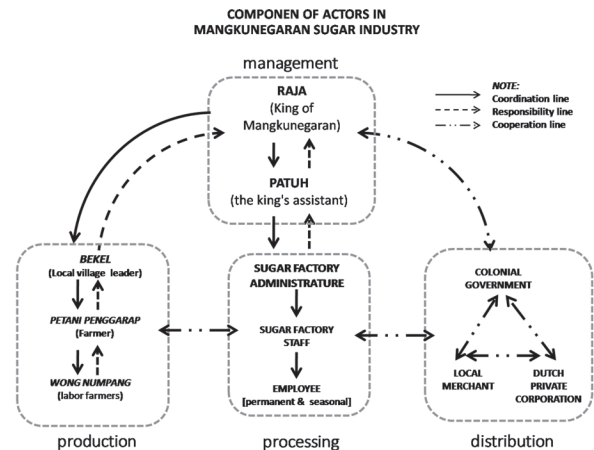


Fig. 2. Relationship between components of actors in the Mangkunegaran Sugar Factory Setting System Source: analysis, 2020

factory, the king appointed employees who were mostly European citizens and represented the factory leadership to an administrator. In sugarcane production activities, the king has a special relationship with *bekel / demang* as village leaders. The king appointed *bekel / demang* as the leader of sugarcane production in charge of working farmers in the village. KGPAA Mangkunegara IV initiated a breakthrough in the control of *lungguh* (*apanage* land) by changing it to a salary system, as innovation as native capitalist. In distribution activities, the King cooperated with the Dutch government and private sector to distribute sugar. The King had good relations with Dutch officials and Chinese merchants in Surakarta City and Semarang City, even with world leaders. International relations of Praja Mangkunegaran can be seen from several congratulatory letters from leaders of foreign countries to King Mangkunegara VII during the inauguration of his 24-year rule (*triwindhu*). The king, who held the power of authority in Praja Mangkunegaran, becomes a central figure in the sugar factory activities. The king holds absolute authority and binds the relationships of all actors associated with sugar factory activities.

Aspect of Activities

Aspects of activities in a sugar factory include all activities in the sugar production process. There are four main activities in a sugar factory which include management, production, processing and distribution activities as shown in Figure 3.

Management activities are activities that regulate

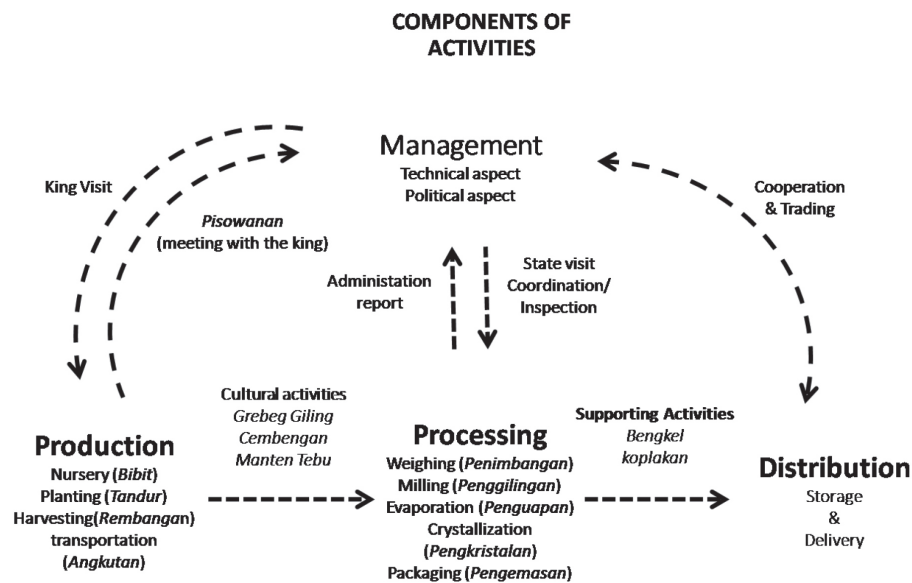


Fig. 3. Relationship between activity components in the Mangkunegaran Sugar Factory Setting System Source: analysis, 2020

the entire management of sugarcane production activities, sugarcane processing, and sugar distribution. Management activities were centered on the Mangkunegaran king, both technically and politically. The king, as the owner of the factory, became the determinant of policies assisted by the administrators who were usually European. Production activities are sugarcane cultivation activities that include preparation for seeding, planting and maintenance, cultivation (harvesting), and transportation of sugarcane from the plantation to the sugar factory. The processing activity is the process of converting sugarcane juice into sugar crystals through the process of weighing, milling, refining, evaporating, cooking/crystallizing, and packaging in the sugar factory emplacement. Distribution activities include the process of packaging, storing and transporting sugar from the factory to traders in the port city who send the sugar to the destination country.

Of the entire series of activities, there is one cultural activity called the *grebeg giling* event (ritual preparation for processing/grinding sugarcane) as shown in Figure 4. *Grebeg giling* consists of the *Selamatan* ritual (praying and eating together), *Manten Tebu* (sugarcane bride procession), and the *Cembengan* (night market). The *grebeg giling* event is considered very important and determines the success of production activities at the Mangkunegaran sugar factory.

In addition to the mandatory *grebeg giling* activ-



Fig. 4. *Grebeg Giling* activities in Tasikmadu Sugar Factory (before pandemic) Source: compiled from various sources between 2017-2018

ity, there was the king's activities to inspect the sugar factory and sugarcane plantation areas. There are also activities *seba / pisowanan* (an obligation to meet the king) as coordination and control of the king's power over his territory.

Aspect of Places

The Places aspect of the Mangkunegaran Sugar Factory setting system basically includes the Mangkunegaran Palace as the residence of the king, the village around the sugar factory as a sugar cane production site, the Sugar Factory Area as a place for processing sugar cane into sugar and the Port City as a place for distributing sugar to consumers

(especially in European countries) as shown in Figure 5. The discussion will focus on the aspects of place in the sugar factory environment. Although the factory layout was planned with rational considerations, the Tasikmadu sugar factory has a special sacred place called *punden*. This place is considered culturally essential for the success of the sugar factory production process. *Punden* is the starting point for *grebeg giling* ritual at the Mangkunegaran sugar factory.

The place aspect includes the functional and formal spatial structure of the sugar factory. The functional spatial arrangement of the sugar factory shows a hierarchical pattern. This pattern can be seen from the zoning division of functions in the sugar factory. The hierarchical arrangement is in line with the character of procedural factory activities based on rational considerations. The formal spatial structure of the buildings in the sugar factory also shows a hierarchical pattern. The hierarchical pattern of the formal spatial structure of buildings can be seen from the variety of building shapes, sizes, and quality of the building's architectural formations as shown in Figure 6.

The hierarchical pattern of the functional spatial

structure of the sugar factory is shown from the horizontal zoning. There is a core zone as the center of the factory arrangement in the form of the *Mbesaran* house (house for the Administrator, the highest officials in the sugar factory).

Around the core zone, there was an emplacement zone with the main and its supporting buildings. The main building of emplacement contained ma-

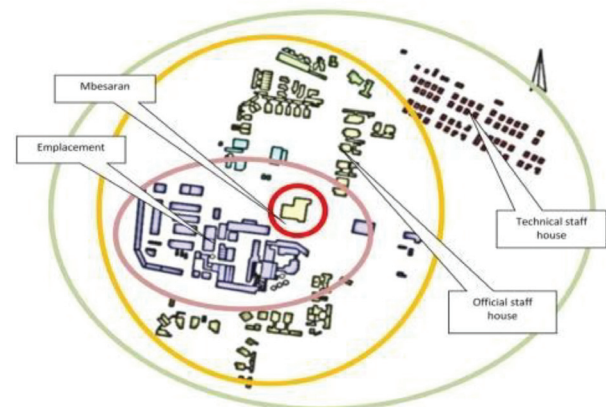


Fig. 6. Hierarchical pattern in the structure and shape of the Tasikmadu sugar factory building
Source: Analysis, 2020

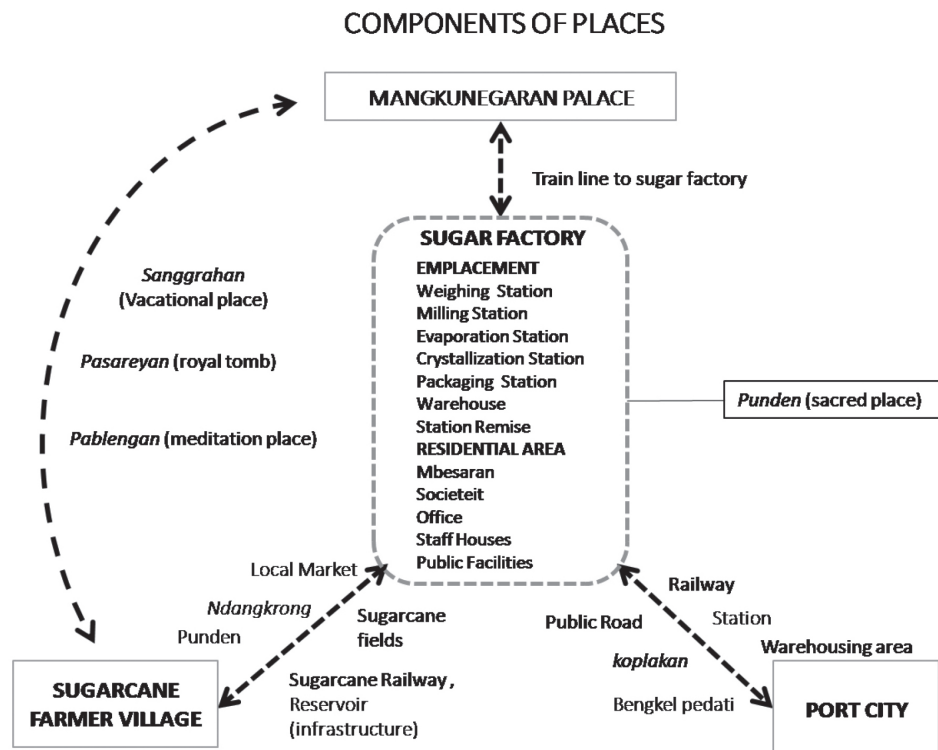


Fig. 5. Relationship among place components in the Mangkunegaran Sugar Factory Setting System

Source: analysis, 2020

chines for grinding, refining, evaporating, crystallizing, and handling the final product. The core zone (*mbesaran* house) and the emplacement zone have the highest level of security with strict access procedures and permits. The next circle was the residential zone for the Management Staff (administrative workers) who were generally European. This zone was still inside the factory wall. Residential buildings for the management staff has single or duplex type houses with *Indische* styles. Although the size and detail of the ornaments are not equal with the *mbesaran* house, the house of the management staff has relatively the same type and function of space. The outer circle was a residential zone for Technical Staff who directly handled factory operations. This zone is outside the emplacement wall with smaller building size and simpler building style. The space structure consisted of a terrace, living room, and bedroom with integrated service rooms. The type of house for Technical staff is more for meeting basic housing needs. The lowest hierarchy is in the occupancy of seasonal employees (daily contract employees during the milling season) who only rely on the ability of labor (*tenogo/kuli*), who usually also work as planting, cutting, and transporting sugarcane. Seasonal employees were not entitled to shelter. They were only provided with a communal ward to just rest.

Apart from the functional spatial aspects, a hierarchical pattern is also seen in the formal spatial aspects of the employees' residential buildings in the sugar factory. The highest hierarchy of residential buildings in a sugar factory is the *Mbesaran* house. The *Mbesaran* house stands out from all types of houses within the factory complex due to its size, height, and richer detail of architectural elements. Although the whole building was designed in a colonial style (symmetrical spatial arrangement, a row of European round poles, the size of the window doors, and a high ceiling with ventilation holes), elements of Javanese architecture were used. Javanese architectural elements are quite visible on the *Limasan* (pyramid-shaped roof of the building), *Cakra* ornament (arrangement of arrows) on the vent, as well as the color of the building that uses a typical Mangkunegaran green and yellow color combination called *pare anom*. The *mbesaran* house as shown in Figure 7, consists of a terrace that surrounds the main house, living room, bedroom, sitting room, dining room, pavilion, and room for service functions (kitchen, garage, maid's room, driver,

and gardener) that are separate from the main building. The *mbesaran* house was also a place to stop when the king visited the factory. There is a special *senthong* (bedroom) for the king, which until now has never been opened and is only used to store heirlooms (weapons) and *ageman* (clothing) from King Mangkunegara IV. In front of the *mbesaran* house, there is a gazebo with a cast-iron structure imported from Belgium. King Mangkunegara never met at the factory office but preferred a gazebo as a place of coordination.

The acculturation of European colonial industrial culture with Javanese agricultural culture can be seen from the components of the setting system of Mangkunegaran's Sugar Factory. This is following the notion of a system setting in architecture, which puts forward the idea that architecture is not just form and space but also includes all activities in its functional processes. (Rapoport, 1969), (Rapoport, 1990). The relationship between architecture and the environment in the form of spatial space settings includes at least fixed-feature elements, semi fixed-feature elements, and non-fixed-feature elements (Rapoport, 1982: 61). The components of actors, activities, and places interconnected as a system become a reference in observing the phenomenon of acculturation in the Mangkunegaran's sugar factory. Aspect of Actors: although the management of the factory is left to the Europeans (Germany and the Netherlands), the King of Mangkunegara has full authority that is very influential the sustainability of the sugar factory. The king tries to position himself as the ruler with the highest authority. The components of the actors show that King of Mangkunegaran as central figure. The leadership of the king is a form of acculturation between European industrial culture and Javanese agrarian feudal culture in sugar industry management.

Aspect of Activities: The *grebeg giling* ceremony, which marks the beginning of the milling season, is a royal initiation in carrying out the tradition of a peasant community that always carries out celebrations to express gratitude as well as a marker for any changes of time that are considered essential. *Grebeg giling* is an appreciation for the long efforts of farmers in the process of supplying raw materials for sugar factories. The ceremonies, packaged in the form of festivals, consist of *Selamatan* (praying and eating together), a ceremony for the procession of *Manten Tebu* (sugarcane bride), and the holding of *Cembengan* (although it has shifted from the original

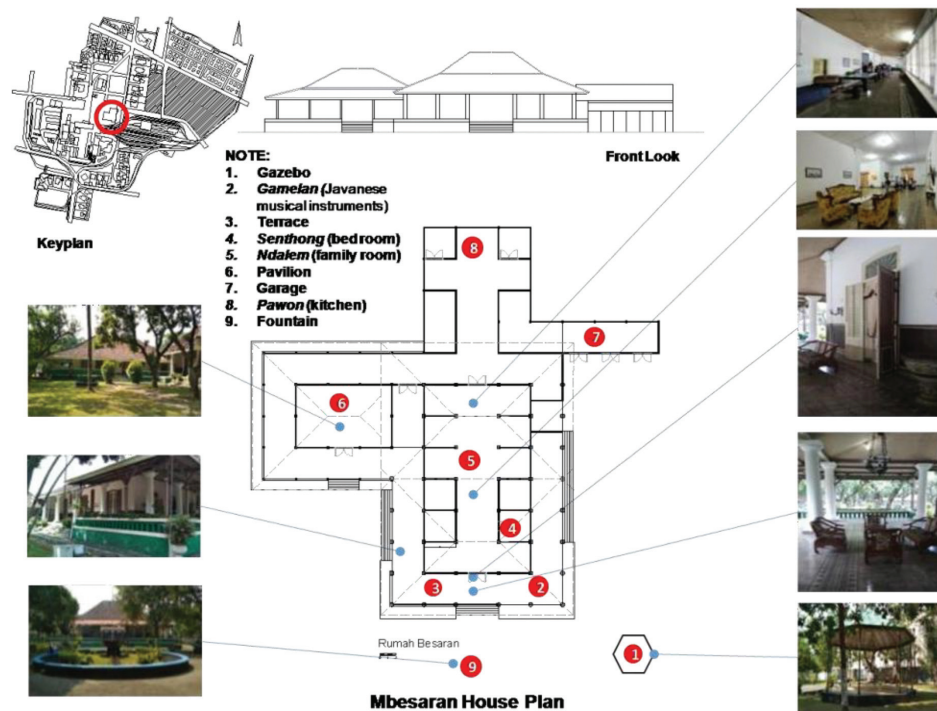


Fig. 7. Plan, exterior and interior of Mbesaran House

Source: author, 2020

meaning of the term *Cing Bing*, in principle it has almost the same spiritual goals, namely expressing gratitude for the fortune obtained). The *Manten Tebu* rituals depict the handing over of sugarcane from farmers to factories to process into goods that are considered more valuable (At that time, granulated sugar was more aimed at the needs of European consumers). The activities components in the Mangkunegaran sugar factory setting system show that the *Grebeg Giling* activity is an important activity that connects the agricultural production process with the industrial processing process.

Aspect of Places: The placement of the house as a special stopover for the King is reminiscent of the palace layout that places the king's *ndalem* as the center of its structure. The placement of the king's place in the center of the arrangement, concentrically surrounded by aristocrats, relatives, and courtiers of *ndalem*, is also depicted in the layout of the *mbesaran* building, which is the center of the building components of the lead employees and executive employees in the sugar factory. Besides, there are several places that, apart from being a function of industrial processes, are used simultaneously with cultural functions. The existence of *punden* as a sacred place in the factory is a representation of the

pattern of *punden* existence in sugarcane plantation villages. The existence of a special *senthong* (bedroom) for the king in the mansion's house also represents the type and function of sacred space in the Javanese people's houses. The factory's front yard, which is wide enough for the *Manten Tebu* ceremony, reminds us of the front yard of the palace, which is indeed functioned for large-scale social and ceremonial activities. There is an open space (like a hall) in the factory, used for the procession of *Selamatan* events, reminiscent of the function of the *pendopo* of Javanese houses. The place components in the Mangkunegaran sugar factory setting system show acculturation in the concept of the layout structure and shape of the building. The factory layout that considers production efficiency and effectiveness is mixed with the concept of a hierarchy based on Javanese cultural considerations.

Conclusion

Cultural study in the Mangkunegaran sugar factory shows the acculturation between colonial industrial culture and Javanese agrarian feudal culture. This findings complement the results of research from Padmo (2007), Wasino (2008), Sudrajat (2010) on

macro-economic aspects of sugar factories in the Javanese Kingdom. Although not a major factor in the sugar factory production process, cultural aspect have an important role to determine the success of the entire production process.

Acculturation between industrial culture and agrarian culture in the Mangkunegaran sugar factory can be seen from the components of the setting system, which consists of the actors, activities, and places. This acculturation shows a local wisdom from industrial heritage in the Kingdom of Java that can support heritage practices on a broader scale.

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