Literature Review on Spatial Order of Ancient Javanese Cultural Landscape: It May Contains Spatial Continuum Idea

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Abstract. Popular paradigm defines urban area as a Growth-Pole which has been expected to give trickle-down effect and spread welfare to its hinterlands and rural areas. In fact, urban growth tends to generate resource exploitations from its hinterland to comply urban necessity. Those, sharpen the dichotomy between urban and rural welfare and generate Desakota phenomenon. New paradigm sought as an alternative strategy seeks balance in the role of rural-urban linkages. This study aimed to bring out a model of spatial order that had existed in ancient Javanese civilization which followed a philosophy of maintaining the balance between human and nature in utilizing environment. Qualitative research was conducted through content exploration on ancient Javanese civilization references. Those contents were cross-diachronic to unravel the connection between political and economic situation when that spatial order model had existed. Wenua (village) was located in a configuration that followed four geographic directions: at north, south east, west, and one in the middle of the fourth villages. Market was held rotationally among five villages through rotation Pekan Mechanism. This rotation system gave each village opportunity to become central pole for the economic activity in the region. Therefore, economic vitality was able to spread equitably over the villages.

Keyword: spatial order, javanese, cultural landscape

1. Introduction

Cultural landscapes is a product of natural processes of interactions between humans and nature, over a long period of time [1]. Cultural landscape is formed from continuous landscape reorganization by indigenous people in order to adapt their land use and spatial structures to achieve the ever-changing needs of humans from time to time. It is recognized as a multifunctional landscape that provides diverse benefits for people, produces goods and products, supports and delimits local resource management, improves culture, and so on. Cultural landscapes, therefore, presumably contain principles in building modern societies, and as a more harmonious model of interaction between humans and nature [2]. In addition, there has been an awareness of the need to explore local content to address some issues in the current spatial planning [3].

Urban and regional planning discourses are always evolving concomitant with the growing dynamical issues. Spatial planning theory in regional and urban planning studies was built on the foundation of location theory. This theory investigated spatial order with emphasis on the economic viewpoint. Location theory has been formulated on the basis of the geographical location of economic resources and their relation to the location of various types of activities, both economic and social activities [5]. One of the spatial elements is ‘distance’ which is considered to be a ‘disturbance’ when humans relate to or move from one place to another [6]. Although this theory has not been much
discussed, it has been formulated since at the beginning of nineteenth century. Empirically, it can be observed that service centers are generally urban in nature. As a location with the highest vitality than its surroundings, urban areas pretend to be an economic polar, or as central place. Such circumstances are universal and are tried to be explained by economists or geographers pioneered, Walter Christaller. Economist Von Thunen saw the differences in land uses from the point of difference of distance to the market which was reflected in land value. Weber specifically analyzed the location of the industry. Above three figures are considered pioneers or foundation creators in terms of location theory.

![Diagram](image1.png)

**Figure 1. Classic Theories of Spatial Order**

Refer to Christaller, service centers tend to be scattered within the territory according to a hexagon-shaped pattern. A region has a functional linkage between one center and its surroundings. The development of central places depends on the consumption of central goods influenced by population, demand and supply, and price, as well as regional and transportation conditions, known as "Central Place Theory." A region has dependence on other regions. Each region has advantages over the others, so the area has facilities that can serve the needs of the population within a broader radius and other residents will come to the region to meet their needs. Popular paradigm defines urban area as a Central-Place that is expected to give trickle-down effect and spread effect to its hinterlands and rural areas [5]. In fact, urban growth generates backwash effect, a form of resources exploitation on its hinterland to comply urban necessity [7]. Those sharpening dichotomy between urban and rural welfare generates Desakota phenomenon, which has a negative impact which gives stress to ecosystems and natural resources.

The Desakota phenomenon illustrates the impact of rural or suburban dependence to urban center. Desakota is a term used in urban geography that is used to describe areas in the extended surroundings of large cities, in which urban and agricultural forms of land use and settlement coexist and are intensively intermingled. The term was pointed by the urban researcher Terry McGee of the University of British Columbia around 1990. It comes from Bahasa Indonesia words: desa "village" and kota "city" [6]. Desakota areas typically occur in Asia, especially South-East Asia. Examples can be found in the urbanised regions of Java, such as the densely populated, delta-shaped areas on the peripheries of the Jakarta agglomeration (Jabodetabek), and also the extended metropolitan regions of Bangkok or Manila [6]. Outside South-East Asia, areas with comparable features have been described in China, India, Japan, Taiwan, and South Korea [8].

Desakota regions are characterised by high mobility of goods and services and rapid change in patterns of settlement. They are characterised by high population density and intensive agricultural use (especially wet-rice cultivation), but differ from the densely populated rural areas by more urban-like characteristics [9]. These are developed transport networks, high population mobility, increasing activity outside the agricultural sector, the coexistence of many different forms of land use, more female participation in paid labour, and unregulated land use [10]. The environment is being stressed differentially across varied geographies by the processes of technology-led economic globalization,
which in turn have brought about rapid social responses of livelihood transformations in the form of migrations and more market-dependent activities. Environmental services that were rarely a concern in rural livelihood systems now are becoming of critical importance – air and water quality, for example, have implications for crop production as well as health. These may also be linked to poverty in very different ways than has been traditionally conceived of in rural areas. In rural regions, the link between poverty and ecosystems services has generally been conceptualized in terms of access to resources [11], [12], [13].

Those phenomenon leads to the development of spatial equilibrium theory in urban and regional planning. New paradigm sought as an alternative strategy seeks balance in the role of rural-urban linkages (rural urban linkages). This study aimed to find out a model of spatial balance that had existed in ancient Javanese civilization. Javanese civilization examined urbanism since the 10th century. Javanese cultural landscape order followed the Vastusastra principles, steeped in philosophy to maintain the balance between human and nature.

2. Methods

This is research implemented the documentary research method. It is refers to the analysis of documents that contain information about the phenomenon we wish to study [14], that is ancient Javanese civilization. Payne and Payne [15] stated the documentary method includes categorising, investigating, interpreting and identifying focused information, which are most commonly written at documents. Documentary sources selected by quality control criteria, these are: authenticity, credibility, representativeness and meaning [16]. Authenticity refers to whether the evidence is genuine and from impeccable sources, such as the results of translations of various ancient manuscripts and inscriptions from ancient Java; credibility refers to whether the document is written by historians and archeologists who are concerned with ancient Javanese studies; representation refers to whether the document being consulted contains a narrative picture about social, politics and culture in ancient Java period; and meaning refers to whether the content of the document is clear and not multiple interpretations. Content analysis applied by grouping information: Philosophy and beliefs that underlie the ancient Javanese people's thinking; livelihood and economic systems that has been existed in Ancient Java. These are spatially mapped and how they are intertwined in the spatial order of landscapes is discussed further.

3. Results

3.1. Philosophy

Ancient Javanese civilization in a structured space, is at least recorded to have existed since the 9th century AD. Michael D. Coe [17] argued there are two types of civilizations that can grow in tropical forest areas as the original landscape of Java Island, namely unilateral and organic. Characteristic of civilization is the pattern of relationships among members of society that is mechanical solidarity. This pattern is characterized by relationships that emphasize the values of uniformity, the system of sanctions that are coercive and tend to be faithful to tradition. Religion used as a moral source and the basis of social control is applied as a law that tends to be coercive.

The ancient Javan had been recognized as urban civilization since 9th century. Hindu teaching background is still prominent and coloring ancient Javanese society. Spatial structure of the landscape in its existence has arranged correspond to a Hindu cultural value, i.e. Vastu Shastra philosophy. 'Vastu' means places where immortals and mortals dwell. It classifies cosmos into earth (bhumi), house (harmya), vehicle (yana) and furniture / seating (sayana), defined to achieve harmony in living environment [18]. These conceptions are applied in a wide range of structures, such as: in utilizing neighborhood, temple architecture, painting and sculpturing. Vastu Shastra for every site and country differs as per the various regional factors of that place. Van Ossenbruggen [19] mentioned there was a local conception that organize relationship among javenese villages, it was known as mancapat-mancalima. It is a five-elements principle which is one of the symbols of cosmos harmonization according to Javanese philosophy [20]. Villages as living place for human are located in a 5-pole
configuration, one village is located at the middle and the other four villages are located at four directions of the village: north, west, east and south. However, the location of these villages may not always be precise in the direction of the four or eight corners of the wind, because in the direction of the winds there are rivers, seas, ravines, lakes, or forests that are impossible to live in [21]. Besides that, Javanese also implement the 5-elements principle in calendar, that is *pancawara* or 5 days in a week: *Manis, Pahing, Pon, Wage* and *Kliwon* [22].

3.2. Livelihood

In the old Javanese society, the king lived in a palace located in the imperial capital surrounded by a brick wall. Inside the palace also lived royal family and servants. Outside the palace wall (but its still inside of city walls) lived the crown prince and princess with his family, palace officials. The crown prince, princess, and nobleman also had an area outside the capital city or *watak*. They acted as local rulers.

Common people lived in clustered villages or *wenua*. They are generally farming, trading, working on home industries producing food such as sugar and oil, daily necessities such as charcoal and firewood, lime, pottery, wicker, snare trap and snares. A village may accept a gift as an autonomous village or *sima*, if it had services to the kingdom during war and/or becomes a location for sacred religious ceremonies. Although most villages was agricultural, there are also types of villages inhabited by a community of craftsmen who specialize in certain goods production such as blacksmiths or pottery, its called *Staphaka* [22]. A person who taught the expertise to community, appointed as a village ruler.

3.3. Economic and Market

The river-ways had an important role for mobility in the ancient Javanese civilization, including for logistics trasportation. Two Rivers as major for ancient Javanese civilization is Kali Brantas and Bengawan Solo River. Both linked Java's inland to coastal areas, and vice versa. Various types of commodities traded on the market are mainly agriculture commodities, such as: rice, fruits, coconut, cucumber, flower, livestock (cow, goat, chicken and eggs), fresh fish and dried fish. Home industry products such as baskets, salt, whiting, home furnishings from pottery, and iron and copper [22].

The Garaman inscription dated back to 975 *Caka* (1053 AD) shows the linkage between the location of the villages and the market location. It is mentioned the existence of traders who take merchandise from other villages and sell it in the villages around Garaman Village without being reprimanded by officials of the five villages. These mentioned that there was an organization among 5 villages in trading management, and suggested that every village had a market. Pangumulan, an inscription dated back to 824 *Caka* (902 AD) mentioned traders’ behavior in ancient Javanese who used to move from village to another where was a market open alternately among 5 villages. Based on the information it can be imagined that traders brought merchandises to move to the surrounding villages to trade. The paths that traders used are land routes and river routes [22].

3.4. Spatial Order of the Ancient Javanese Market System

In his explanation of the types of primitive economic systems, Jacob and Stern [23] mentioned that simple exchanges began to exist in the advanced food gathering economies. At that time, the public began to recognize surplus, so that its excess production was channeled in exchange, either by barter, the agreed exchange (gold / silver), or exchanged as inter-community gifts. The objects that were exchanged as gifts are usually objects that symbolize the wealth of society. While the objects that were traded are two kinds. First are items that met the primary needs such as clothing and shelving, and second is secondary goods that have social meanings and functions, made by artisan communities such as ornaments, weapons, beautiful clothes, silk umbrellas.

The need for the distribution of products in the emergence of the market as a place to exchange the results of production and thus became an indicator of economic progress of the community. The market also served as a political meaning to the ruler, which was the indication of the welfare of the people and guaranteed security to transact. The Old Javanese market had various roles, and could be seen as a complex system. The system in question was an interrelated organization forming a complex system unity [24].
The Old Javanese Market System was not only a system of exchange of goods and services between communities that had specific products, but also as a form of social norms that were institutionalized in cultural institutions [25]. This was evident from integrating the application of the concept of *mancapat* and *mancalima* with the concept of *pancawara* in the spatial order of villages and the rotation of market operations in five villages. Each village had a market, and was annulled every day. On the day *Kliwon*, the market was held in the center village, on the day of *Legi* or *Manis*, the market was held in the eastern village, on the day *Pahing* the market was held in the southern village, on the day *Pon*, market was held in the western village, and on the day *Wage*, market was held in the northern village [19]. Among the five markets, the *Kliwon* market was considered a center, and of course, it had greater economic vitality than other villages.

![Spatial Order of Old Villages Market in Malang (left) and Temanggung (middle); Market Rotation Model (right)](image)

Ethnoarchaeology research results in Malang Regency and Temanggung also found that in general, a village market day revolves in one rotation or *sepasar* [25]. For example, in Kabupaten Temanggung, the market in Tepusen village (which is considered to be the central market) recognizes *Kliwon*’s day as market day; The village of Kaloran, located in the east of Desa Tepusen, recognizes *Legi* day as market day; The village of Kandangan located west of Desa Tepusen recognizes *Pon* day as market day; Tegowanuh village located in the southern village of Tepusen recognizes *Pahing* as market day; But there was no market that really lies to the north of Tepusen Village, but there is Tlogopucang Village which is located in the northeast which recognizes *Wage* day as market day. Thus, one village market can enter the rotational unit of economic vitality. Similarly, the market in Malang Regency, generally open every day to keep the market day twice in the market, for example Turen market recognizes *Kliwon* as market day. The other three markets, namely Talangsuko market located north of Turen, Talok Market in the east, and Sedayu Market located in the south are simple markets.

4. Discussion
The application of the concept of "*panasta village or mancapat*" and the concept of "*pancawara or sepasaran*" created an integrated spatial suckler villages on Java landscape and composed the economic vitality throughout the region. The integration of these two applied concepts are in line with the backdrop of social and cultural conditions of unilateral character from ancient Javanese history with a strong collective attachment to the values of the Hindu religion and philosophy *Vastusashtra*. Yunus [26] saw this as an ideal model for the survival of living environment where it should also be a place for working, opportunities, circulation, housing, recreation, and other living facilities.

Market rotation preceded by the "*Pon*" held at the central market or "*watek*" markets, continued by the "*Umanis / Legi*" market to the east, the "*Pahing*" in the south market, the "*Pon*" in the west market west, and the rotation ends on "*Wage*" day in the northern market. Continuous cycles of every "target"
or every five days, allow for equality of territory or village. Each village has a chance to gain easy access to fulfill their daily needs and market their products directly in the market, and every village has a chance to be vital. With this market rotation pattern, it can alleviate the vitality dichotomy between the mother village and other surrounding villages. Each has the same opportunity to become a rotating central-place.

Those can be a benchmark for classical location theories that tend to see one location as a central location for the surrounding areas. Some theories and concepts were, among others, formulated by Von Thunen who envisioned the achievement of minimal economic costs through the creation of a growth center in one city with the concentrated supply of agricultural areas of the city concentrated around him, Christaller, with the Central Place Theory, formulated the hexagonal form as a concept illustration Hierarchy of space based on the hierarchy of economic service level. Friedmann with his core-periphery theory which explained the existence of a central region with some peripheral regions. The application of the eurocentric theories in regional development, especially in developing countries, has implications for the Desakota phenomenon. The city as a central-place became a location that syphon resources from the periphery, giving stress to the environment and societal rural communities. Orientation of economic vitality to the city always places the surrounding area under the hierarchy of the city economy.

![Central Place Model](image1)

![Mancapat-Mancalima Model](image2)

- Goods and resources are attracted to one node (city), which holds vital role for regional economy;
- Current trend in Asia city center continues to grow greater while the others nodes left behind or even shrinking.

- Goods and resources are attracted to all nodes, turn by turn, following daily rotation in a week;
- All nodes in the region have equal chance to become vital, at least once in a week;

**Figure 3.** Comparison the Central Place Model and Mancapat-Mancalima Model

Critical reviews of these theories mainly concern the relevance of their application in Indonesian territory to the diversity of geographic and social conditions of society. Simplification is related to geographical issues, distance, and human behavior. Thus, the failure of the theory's application in regional development practice can be identified by the problem of spatial inequality and dependence. This situation is, of course, contrary to the traditional Javanese concept application that seeks to harmonize and balance life.

The market rotation system based on the concept of "market" not only creates the balance and dynamics of space, but furthermore, it triggers the socio-cultural dynamics of society in every village. The rotation of trading activity according to market day, encourages the movement of traders from one village to another. Therefore, in social schemes, the community groups of economic actors are intertwined not only internally but also externally with market mechanisms outside the village. Traders from a village will meet traders from different villages. In addition, this encounter also occurs between the merchant and certain commodity producers and buyers from different villages. The routine of the encounter not only creates, but also strengthens the social ties between regions. In a cultural scheme, the same external fabric allows for the exchange of information, ideas, ideas and cultures. The market no longer means economic, but social and cultural.
In the context of the present, in the midst of rapid economic activity, the existence of economic space or traditional markets can survive because it is closely related to the social fabric in it. The loss of existence of one of them will affect other existence. The "go-to" rotation that is applied in the tradition of the economic system of ancient Javanese society, enables the sustainability of market, village, and socio-cultural community existence. In this case, the market is not merely present in the economic life of society, but it exists to maintain its existence at that time and develop in the future. The distribution pattern of bounded reciprocal commodities described by meetings between traders / producers from different villages in the border region to conduct transactions and down-the-line trade patterns, where hopefully in the future it will lead to new small markets. Through this way, buy-sell transactions usually occurred at crossroads or in open ground. The meeting triggered by the need for commodity exchange among traders created wider economic activity, i.e. between traders and the people living around the transit area.

5. Conclusion
In Ancient Javanese civilizations, religious-spiritual beliefs proved not merely as a manifest in ceremonial worship activities. From the textual study, it can be learned that the beliefs become the basis of attitude in every fabric of Javanese human life. Concept of "mancapat-mancalima" and the concept of classification of time "pancawarna and kesasaran" is a proof of the role of cosmological beliefs embraced by ancient Mataram people in the arrangement of space and livelihood activities. Meanwhile, the concept of traditional Java market rotation showed that the condition that space, time, human, and activity cannot be separated. These four aspects cannot be understood as single entities, but must be understood as a coherent and holistic entities.

Market rotation system is one of the component in the ancient Mataram market economy system in addition to production, distribution, transportation, and transactions. In spatial context, this rotation system established inter and intra-territorial networks, especially villages involving community interconnection. In a socio-cultural context, the system proved capable of creating a wider rural community knit. Knitted social community stems from the entanglement of economic activity actors internally and externally beyond the administrative boundary of the area, grown extensively to form the fabric of society producers, traders, consumers, authorities, and ordinary people.

Five patterns of commodity distribution in traditional Javanese market based on the "target" cycle enable the expansion and the strengthening of social fabric, as well as the survival and development of market existence itself. This is possible because through the system, there are guaranteed availability of traded commodities, the fabric of economic actors, social fabric with the wider public. In addition, transactions that occurred due to the movement of traders from one village to another, resulted the embryo formation of new markets that can be found until today. The market is no longer just a meaningful economic space, but further, the market can be a social and cultural space, i.e. a space that is enabled by economic activity. Therefore, the disappearance of one of these values will threaten the existence of not only the market as an economic space, but also a village. The concept of "sepasaran" that manifests itself in a rotational system market, is the spirit of vitality generating a fair and sustainable space at the time of the ancient Java spatial order.

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