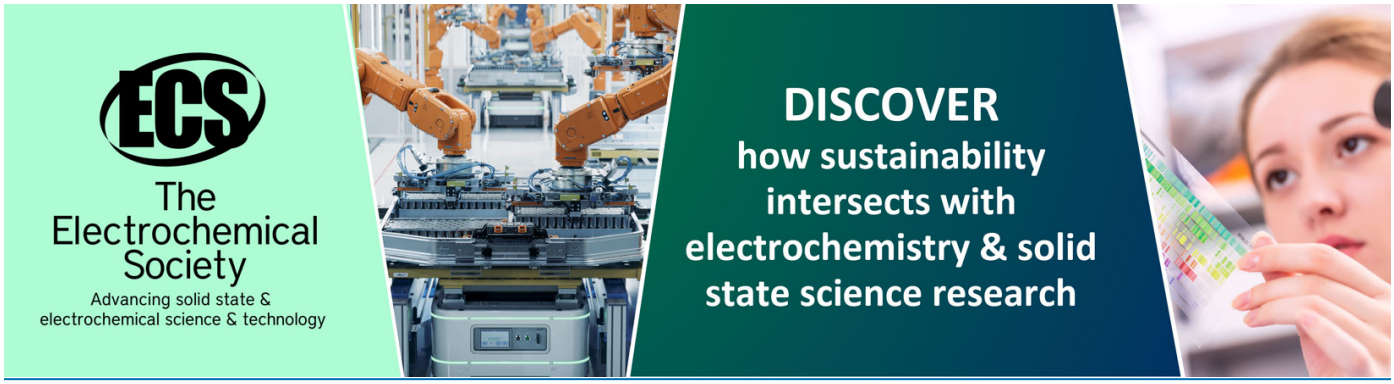
Lifestyle as an Influential Factor to Urban Mobility Transport: a Case Study of Semarang City, Indonesia



Lifestyle as an Influential Factor to Urban Mobility Transport: a Case Study of Semarang City, Indonesia

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Abstract. Most of urban spatial structures in developing countries apparently face a typical phenomenon, as well as in Indonesia. The development of the urban spatial structure has the effects, namely to create polycentric pattern (sprawl). Moreover, communication technology believes that the factors of distance and density are highly considered in the organization of the urban structure. In other words, a distance problem is overcome by communication technology, in terms of interaction among people; in running their activities, mobility or distance is not a problem at all. Urban structure as path which is dependent is unable to intervene for an optimum form of urban structure because of dynamic of development objectives. In facts, lifestyle of inhabitant particularly concerning residential and vehicle ownership influences the mobility transport on the tremendous changes in developing countries. On the contrary, this research points out that mobility transport contributes to transportation problems as it becomes increasingly inefficient. Therefore, a sporadic traffic jam and increasing carbon emission issues have risen on the urban phenomenon. It is important to investigate the lifestyle, in terms of residential choice and vehicle ownership to reshape the urban spatial structure. The research aims to draw the urban spatial growth which extends to the phenomenon process toward polycentric pattern and inefficient transport mobility patterns triggering transportation problems in the context of Indonesia. The results confirm that lifestyle regarding residential choices to suburban area and vehicle ownership preference are unable to create the efficient mobility transport, either by cost, density consequences or vehicle ownership as orientation. This research recommends the local authority from multi-disciplinary sector, in particular public policy making to issue permission for authority of land use; residential area and transport agencies for reconciliation with regard to life style aspects in urban spatial planning.

Keywords: Urban Mobility Transportation, Urban Lifestyle, Semarang City

1. Introduction

The rapid development of urban population forces the city expansion to move towards the suburbs. Such situation is what both developing and developed countries are currently facing. The development is due to the rising urbanization which leads to more demand for land in the periphery [1,2]. In developing countries like Indonesia, the expansion is unexpectedly sprawl which extends towards the outskirt. This condition is as the impact of continuous urbanization that is translated into increasing needs for land in the periphery. In addition to great expansion of the city, urban and rural integration also appears, while technology continues to evolve; then a shift in social structure is inevitable [3]. The high growth of metropolitan and megacity on every continent is considered the consequence of economic growth. The economic growth is unfortunately often responded with the

changing lifestyle, such as private ownership of residential and vehicle [4]. The indication can be seen from the high growthof population living in the suburbs, where the more than 5 km daily commuting from home to the work place does not become a constraint. Figure 1 presents the population density in the suburban area of Semarang.

Bertaud [5] has pointed out that big cities in the world have far been shifting their pattern from the monocentric to the polycentric (many centres). Moreover, the polycentric cities have more efficient transportation than the monocentric because of denser population with more orderly and well managed infrastructure. Research by Hermawan [6] on Isoprice in densely populated residences in three different areas of study in Semarang city suggests that the densely populated outskirts show more efficient mobility if the public transport is designed to have a big capacity, but if they employ small-capacity public transport, the mobility in the area turns to be more inefficient.

Indonesia is a developing country where almost all the cities plan development towards the periphery, while traffic jam always appears on almost the entire road network up to the city centre. The transformation from the monocentric to the polycentric image can also be identified in several urban areas in Indonesia especially in the areas of study in Semarang city as described in Figure 1, showing the population density which shifts towards the suburbs.

The research findings of Ismiyati [4] explain that in terms of transportation mobility, 70% inhabitants of Semarang are likely to be consumerist and conduct long commuting from the suburb to the city centre to reach work place and school. This condition displays that despite the shifting pattern of the city from the monocentric to the polycentric, the mobility and transportation infrastructure is deemed inefficient, because the mobility of the inhabitans is done using private transports [7].The purpose of this study is to analyze and describe the spread patterns of residential density which moves towards the periphery, as well as analyzing and exploring how the lifestyle leads to the inefficiency in mobility and urban transport infrastructure.

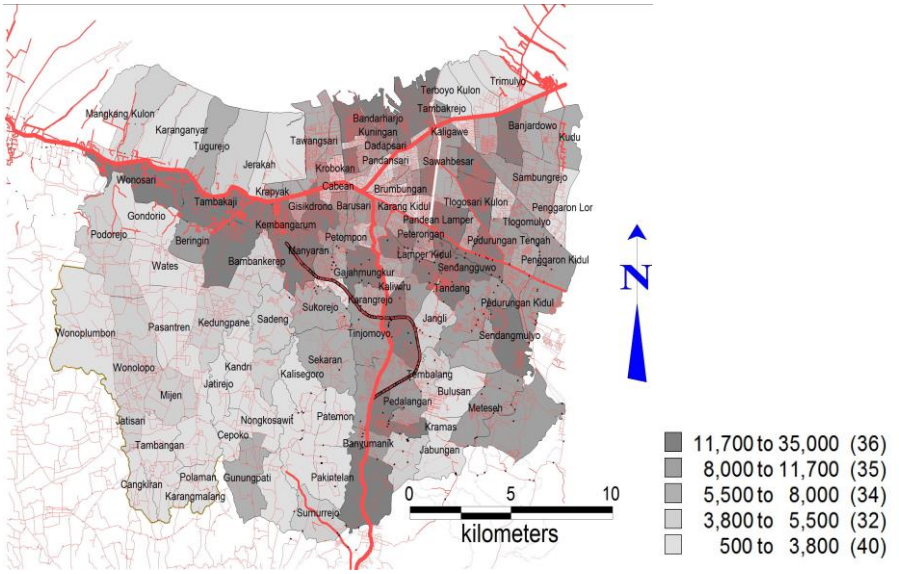
2. Research Methods

The research was undertaken using the quantitative method followed with field observation to obtain the data on land value on each subdistrict in Semarang City, the distance to the city center, as well as the spread of residential density. A qualitative method was also implemented through in-depth interviews to obtain information on the characteristics of the population in the suburbs. The purpose of combining these two methods is to explore the social phenomenon that is unable to explain solely through a quantitative method.

3. Results and Analysis

3.1. Population Distribution Patterns of Semarang City

The result of the analysis implies that the population distribution moves to the city periphery as seen in Figure 1, as well as on the analysis of the relationship between density and the distance to the center as described in Figure 2. The urban development tends to show the establishment of many centres in the suburbs that lead to the polycentric pattern. The development of the polycentric cities in Indonesia occurs as the impact of less integration and coordination between spatial policy and the urban transport policy. Meanwhile, the polycentric pattern or sprawl tends to become less beneficial for advancement strategies in public transport due to the irregular population mobility from the origin to the destination that will also lead to irregular settlement pattern. Hence, the cost for development on transport infrastructure is more expensive compared to those in monocentric cities. Monocentric cities are believed to enjoy more benefits because this monocentric pattern provides better access yet cheap for accommodating mobility to work. These facts indicate inefficient control systems for urban development in Indonesia, as the transportation problems are hitting some urban areas in the country.



Source: Hermawan, 2011

Figure 1. Population Density Distribution in Suburban of Semarang

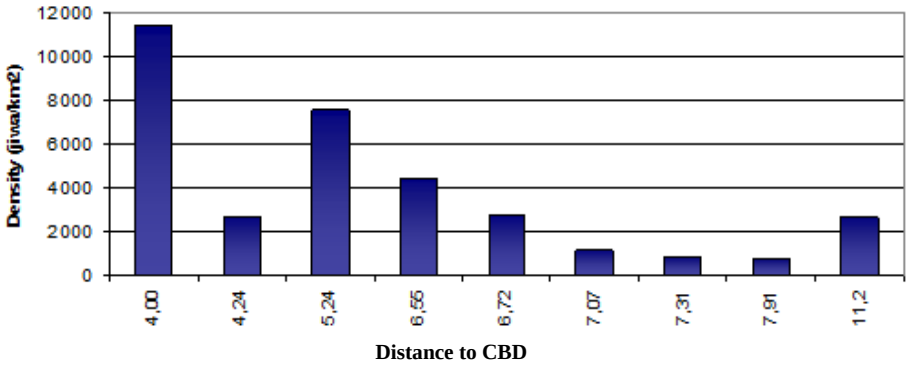


Figure 2. Population Density in the Suburban of Semarang City and the Distance to CBD

According to Bertaud [5] in his analysis on metropolitan cities in several developing countries, these cities are now experiencing changes in patterns from the monocentric to the polycentric. His analysis also tells that the transportation infrastructure in polycentric cities is more efficient because of higher population density underserved. Research by Hermawan [6] on Isoprice for suburbs with greater volume of population density, the public transport services are more efficient if having large capacity, while in the current situation, most suburbs are still served by small capacity public transport. Figure 3 shows the results of in-depth interviews in several subdistricts in the periphery and presents the potential population density and use of private and public transport mode. The figure also depicts that the population distribution in the outskirts of Semarang City and mobility patterns of the inhabitants using private cars are 50% > on average.

3.2. Analysis of the Accessibility, Land Value and the Distance to CBD

The influence of accessibility to population distribution pattern and land value is shown in Figure 3 and Figure 4. These figures explain that variation in land value is as the impact of different level of accessibility and the activity of transportation system that is stated with the intensity of land use (IGL), in addition to other factors.

Differences on topography in the existing suburbs also impact to the varying land prices, thus varying land prices can be found in some locations despite the same distance from the city square (Simpang Lima Semarang). The distribution of land value in Figure 4 indicates population distribution is concentrated on the suburban areas. This is not because of sheer distance considerations and cheaper land value as what is described by Alonso in his theory. Yet, it is the difference in land slope and social shifts from the technological advancement that influences the land value.

The theory by Alonso [8,9] about land lease and transport costs explains that a place far from the center will have lower land value but higher and more expensive transportation costs. However, in Semarang, the reality shows the contrary, since regardless the far distance to the city centre (10 km to 30 km), a residential area built near public transportation and superb settlements would be valued higher and the cost of transportation would be cheaper as it is more flexible compared to using public transport services.

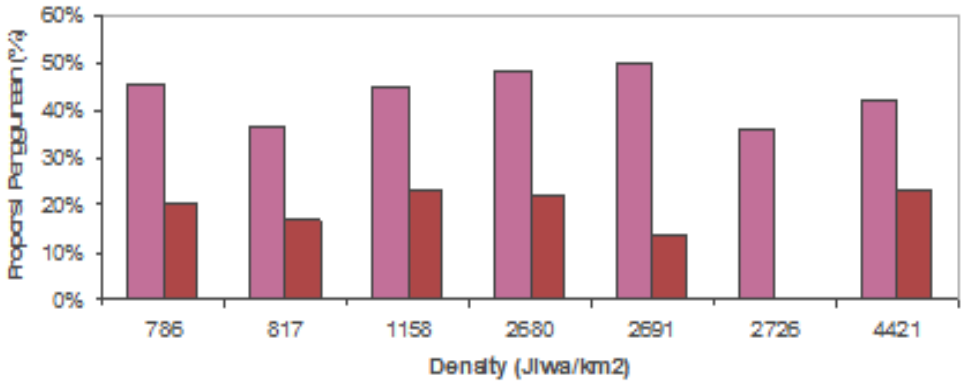
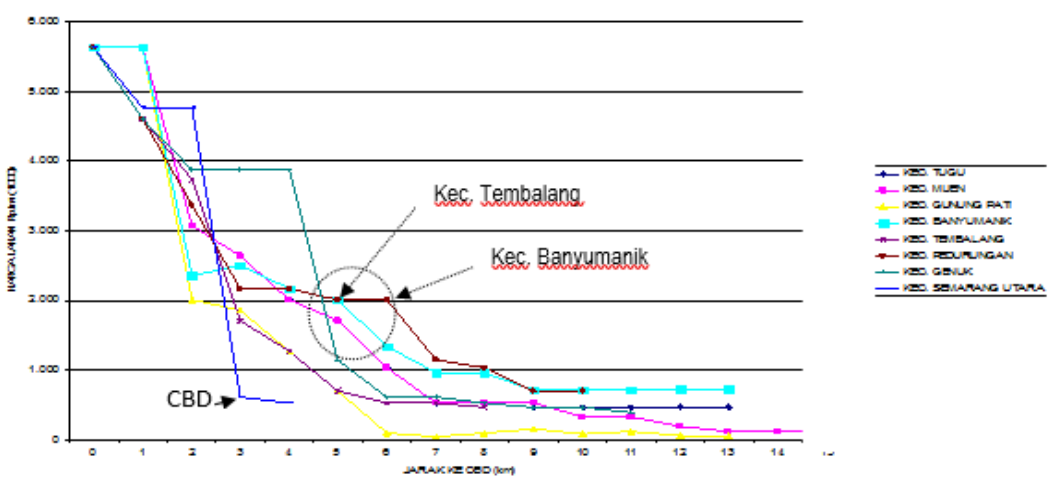


Figure 3. Population Density of Semarang Vs Potential of Transportation Mode Ownership



Source: Ismiyati, 2014

Figure 4. Land Value of Each Subdistrict in Semarang City and the Distance to CBD

3.3. The Influence of Lifestyle to Changes in Mobility

The explanation above shows that mobility influences lifestyle as the impact of advancement in information technology. The results of the study found social development towards new life style

which affects transport mobility. In this case, Indonesian community is having social awareness that creates a lifestyle and eventually triggers to the rise of transportation issues.

4. Conclusions and Suggestions

4.1. Conclusions

The differences in topography and access cause different city development plans as in Semarang City. Suburban areas connected with the highway such as Tembalang and Banyumanik are reported to show the highest density. The difference in the land value in the Semarang periphery is influenced by the ease of access and environmental factors, as depicted in the data that land value in the suburban areas of Semarang namely Tembalang and Banyumanik is the highest, though the areas are considered highland.

The influence of lifestyle is seen from the high land value at Banyumanik and Tembalang subdistricts and with the number of residentials exceeding the standard density. On the other hand, in terms of mobility, more than 50% population took more than 5 km journey using their private cars. Mobility is influenced by lifestyle, thus making the polycentric cities less efficient. In fact, such situation is happening in most developing countries including Indonesia.

4.2. Suggestions

The cities in the developing countries, such as cities for students that are undergoing expansive development are expected to conduct behavior study prior to addressing the needs of urban transport because each city possesses different characters and accomodates different population.

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