The characters of transportation system in kampung kota

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Abstract. Transportation system is an effort in integrating the network of human and product movement from source to desired destination. The movements are conducted in every part of the world in macro scale (intercontinental) and micro scale (neighbourhood). Kampung Kota (Urban village) is an organic residential settlement at the urban area which still having Indonesia lifestyle uniqueness. Each kampung kota has built unique transportation system related to their kampung accessibility conditions. This qualitative study is using analytic descriptive to explain the facts about the transportation system in kampung Pendrikan Kidul, Semarang with spatial, kampung and transportation theory approach. This study found that micro transportation system in Indonesia’s kampung kota has set unique types and developed through eras.

1. Introduction

Transportation revolution is happening in Indonesia. The transportation modal, route, fee, calling type, regulation, and competitions has brought Indonesia transportation into later stages. Furthermore, the facts of technology carry various activity of human and goods with timeless and borderless conditions. Rationalism and market mechanism played the key role on the transportation existence [1, 2]. The transformation of modal, line network, and market demands is inevitable. Some adaptations were needed to survive on this industry [3].

Deeper analysis also shown billing rates, the size of order, commodity, regularity of circulating, waiting order dock (pangkalan), historical tradition, reliability, flexibility, and safety, availability of information systems have become the factor in determining the character of transportation system [4]. That characters were not only determined on macro scale transportation (such: intercity, across island, and even broader continents movement) but also on micro scale transportation of neighborhood size. Small size transportation of becak, ojek sepeda, ojek pengkolan in Indonesia are examples of neighborhood scale modal. Those modals also related to the low-cost transportation history in Indonesia, before their independence era [5, 6]. The transportations, as mentioned before, are parts of the historical tradition of Indonesia in neighborhood. The uniqueness of Indonesia urban “Kampung Kota” transportation system which couldn’t be found in other countries will be described and explained in this manuscript as the main research purpose. Later on, the Indonesia Kampung Kota organic system of transportation also being narrated briefly to predict the future challenges of this unique transportation system.
Descriptive analytic was being operated in this qualitative study as basic method in discussing the findings. The findings were the characteristic of present system and the future challenge to the Kampung Kota transportation system.

2. Methods
The study of literatures and regulations were performed to arrange basic knowledge of this research. Site observation were functioned to describe the existing and collect data of the transportation systems. Descriptive analyses were operated to all study fields, especially for the explaining of the transportation system. The future challenges were obtained by historical prediction in transportation era [7].

The research operations were performed in linier pattern as illustrated on Figure 1. The basic theory of kampung kota and the transportation system were derived from several literatures of urban design and empirical transportation research in Indonesia.

![Figure 1. The research operation diagram.](image)

3. Discussion
Kampung kota is an organic developed urban area in the city without any pattern of infrastructure and economic. Process of urbanization also play role in the making of kampung kota as part of city. One of the main uniqueness of kampung kota in Indonesia is they make their own system. Related to the organic settlement of Kampung Kota, the transportation of man and product was also made by undesigned process [8]. There were dynamic, distributed, automatic, door to door type of transportation services [9]. All of the services have made a spatial configuration in the kampung kota itself.

Pendrikan Kidul is one of the kampung kota in Semarang city, Indonesia. It lays in the central part of Semarang, but the highway locked settlement is still growing in organic pattern. The street as the transportation line can be considered as old form of street, that can be define as street with transformation through the years and many regulations on it [10].

The Pendrikan Kidul is having basic modal of transportation of becak and bicycle ojek at the first time until now. Both of them are effective only for inside kampung movements. That conditions were caused by the speed of becak and bicycle ojek that below 20km/h but it suited the street width of Pendrikan Kidul [11,12]. In several occasions, the inside kampung movement might be moved to broader area but not far enough from the kampung boundaries. Therefore, come up the out from kampung transportation system, such as: minibus (Daihatsu), small bus, and bus (BRT). The slice of inside kampung and out from kampung transportation system area is detected by the existence of intermodal shelter that located in the border of the Kampung Pendrikan Kidul (see Figure 2). The location of the intermodal shelters is near to each modal, e.g.: becak and bus shelters, ojek and Daihatsu shelter. These conditions were made by the chance of picking passenger up immediately, right after the passenger arrived from the previous transportation vehicles.
Figure 2. The main spatial configuration of transportation knots.

From the previous conditions, we found there are two type of trip in kampung kota. The one modal and exchange modal are existing in Pendrikan Kidul and usually have knot of transportation between them. Both of trip are emerged and grown by the proximity of the journey and the inside-outside kampung area [12].

In the present time, there are transformation of all mentioned transportation vehicles. The becak become becak-motor type and bicycle become motorcycle ojek then transformed into ojek online. Those transformation need plan and regulation of operation area, capacity, number of vehicles, connection socialization and off course employment recruitment [13,14].

Without plan and regulation, the conflict will occur. Starting for the operation area and number of vehicles, the intermodal exchange area is the potential space of conflict (see Figure 3). The number of becak that waiting (mangkal) in the interchange shelter might fill all the space of shelter. So, the space that originally made for the interchange become one modal shelter only.

Figure 3. Interchange shelter of Daihatsu and becak.

In the other case, the ojek numbers near the bus shelter also brought the same problem and more conflict as the permanent building of bus shelter couldn’t be moved as the Daihatsu shelters (see Figure 4). Those spatial conflict of permanent spot and number of vehicles also may bring further problem, such the over capacity of the modal (becak and ojek), employment of the modals, and socialization of connections. The connection between the modals also made the street become more crowded and not suitable for walker/pedestrian to use in proper way [15,16].
The history of kampung transportation system is a long story to be told. However, the transformation of the modal (becak and bicycle ojek) and the intermodal shelter are still bringing the same pattern of transportations. As we seen in Figure 2, The knots were made before the BRT Transmarang and other bus existed. That conditions shown that the knot pattern of intermodal shelter is still the same before the independence until presents, even though the conditions of temporal and permanent were changed. The permanent condition of the shelter also didn’t bring wider nor smaller area and didn’t bring a new area of the knots.

The bicycle ojek and becak also changed into online ojek with better information system. But their behavior in waiting for order is still the same (see Figure 5). They still wait the order in the intermodal area [16]. The strategic location of shelter and the connection between the line of transportation system in the kampung couldn’t be regulated and forced. They naturally grown and found their space in the kampung kota through years and decades.

**Figure 4.** Interchange shelter of Bus and ojek.

**Figure 5.** The present spatial configuration of transportation knots.

### 4. Conclusion
The research shown that the pattern of transportation system in Kampung Kota was related to the proximity of the movements. From the proximity, there inside kampung and out from kampung
movement with their specific modals. In between the modals of inside and out, they created spaces that driven by the demand of interchange shelter/place. In historical review of the transportation, we found that there is still same pattern in the system, even though many transformations were happened in the transportation appearances. The last conclusion is the space that created by the system of transportation also still the same in location and size.

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