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Settlement Preferences in Medan Johor Subdistrict Medan City, Indonesia

Emir Haris

Student, Magister of Architecture, University of Sumatera Utara, Indonesia

Dwira Nirfalini Aulia

Lecturer, Magister of Architecture, University of Sumatera Utara, Indonesia

Wahyu Utami

Lecturer, Magister of Architecture, University of Sumatera Utara, Indonesia

Abstracts :

Settlement preference is willingness to choose a dwelling place influenced by various factors. Security, accessibility, and social status become the consideration in choosing dwelling place. The number of private housing clusters in Medan Johor Sub district indicates high interest of the people in Medan in choosing to live in this area, compared with other places. The research is focused on settlement preference of the residents of private housing clusters. The research used descriptive quantitative method with chi square test. The objective of the research was to find out the correlation of social status of the residents of the private housing clusters in Medan Johor Sub district with facility and infrastructure in their area. The result showed that accessibility, facility, and environment were the factors which influenced the residents of the complex to live in Medan Johor Sub district, and there was the correlation of their economic level with their need for facility and infrastructure.

Keywords : Settlement preference, private housing cluster

1. Introduction

Settlement preferences are not only influenced by housing quality but also influenced by the housing environment and also the background of the settler themselves. Settlement preference involves the understanding towards the characteristics of the settler and their compatibility with their chosen environment. (Furlan & Faggion, 2016). Preferences also applied in choosing settlement location and can be defined as settlement preferences. Factors such as prestige, privacy and social status influenced the consideration in choosing settlement location (Kuswartojo, 2005).

Housing cluster consists of several components such as land availability, facilities availability such as main road, drainage etc. and several public and social facilities availability (Kuswartojo, 2005). Private housing cluster developers usually analyzed and conduct market survey beforehand. The main concern for developers is whether the people would be interested in buying a house in their private housing complex.

There is a sub district in Medan that has developed more private housing cluster in the last 20 years. The amount of private housing cluster in this sub district surpasses other sub district with similar condition which is located in the suburbs of Medan City. The sub district described is Medan Johor sub district. Settlement preferences of people in the city resulted in uncontrollable developments of suburbs area (Hudalah & Winarso, 2010). Housing developments are relevant towards the quality of city spaces and this relevance can be interpreted both positively and negatively by an individual, institution or by the housing market (Kriwo & Kaufman, 2004). As such, understanding the case that happened in the area of study is needed.

Medan Johor sub district has the most amounts of private housing clusters with a total of 92 clusters. This research is conducted to identify the reasons people chose this location to settle and additionally identify the factors affecting the settlement preferences of people in this location.

1.1. Problem Formulation

- What are the factors that influenced settlement preference for people living in private housing clusters in Medan Johor sub district that they inclined choose this location over another location?
- What is the relevance on social status of people living in public housing cluster and their facilities needs in Medan Johor sub district?

Research Purposes are: (1). To identify factors that influenced settlement preference for people living in private housing cluster in Medan Johor sub district and (2). To ascertain the relevance on social statuses of people living in private housing cluster in Medan Johor sub district and the facilities availability in their residential environment.

2. Literature Review

2.1. Settlement Preferences

Settlement means a place to settle or to live in while preference means likeliness of someone to choose something among other things which was influenced by several factors. From those meaning before, settlement preferences translate to likeliness of a settler to decide their place of living over other choices of place by considering several variables in order to reach those decision. (Sinulingga, 2005).

Humans will always consider factors such as state of environment, resources, life support availability, risk, and their ability to decide their settlement location (Rapoport, 2002). Eventually, humans will have impacted in creating a settlement and shaping living spaces in urban spaces. Humans always strive to reach their ideal life (Kuswartojo, 2005). Accessibilities such as transport convenience and proximity are the primary concern in choosing settlement location (Koestoer, 2001). Technological advances in transportation affect human mobility and allowed humans to live in suburban area (Yunus, 2000).

Human behaviour in choosing their settlement are also influenced by social levels such as; newcomer settler groups with low economic capabilities, short term settler groups with increased economic capabilities and groups of long term settler groups with high economic capabilities (Alvarado, Donath, & Bohme, 2009). Settlers with middle to high income backgrounds will tend to choose a location that is advantageous over other location such as better facilities etc. Settlers with middle to lower income backgrounds tend to choose a location without considering the advantages the location offered (Milstead, 2012). As a result, settlers will adapt their living preferences with their available options in order to choose their settlement environment (Usta, 2010).

The main influence from settlement environment towards settlers is environment choices. Settlers tend to choose certain settlement while reject other settlement. Choices, the ability to choose and the ability to modify the environment are influences that the environment has toward settlers. As such, settlers tend to choose situation and condition they valued as positive (Rapoport, 2002). There are three correlation concepts between humans and their environment. Those concepts are; environment determination, which states that the physical state of the environment determines human behaviour so that humans are required to have adaptability toward the environment; Possibilities, which states that the environment is affected by human will so that the behaviour generated can be varied; Probabilities, which states that the environment physical state has a chance to generate certain behaviour of human by choices however the choices made were neither good or bad (Usta, 2010).

In private housing cluster case, developers need to attract potential buyers. In order to attract buyers to a certain location, certain aspects in the environment such as vegetation, location, cluster characters, atmosphere, recreation facilities and settler's social status are used in advertisements and mass media. Mass media and advertisement can create different settlement preferences of the environment that potential buyer needs to consider (Usta 2010). Generally, people tend to value minor and constant elements more than major elements in a location. (Rapoport, 2002).

A study in settlement preference of people in Perumnas Helvetia cluster in Medan Helvetia sub district found that people tend to choose a location based on the environment condition and public transportation availability without considering the prestige, image and the suburban location (Hutapea, 2008). Additionally, Murwati (2009) found that there is a correlation between consumer characteristic and product attribute. Consumer characteristic dimensions are: age, education, job and income of the consumers. Product attribute dimensions are: price, design, facilities and location. This research was conducted in property industries. This research uses chi square as analysis tool.

A study to identify the influence of accessibilities, physical attributes, public facilities and property values towards settlement preferences in the area around Universitas Negeri Semarang were conducted partially and simultaneously. Analysis suggested that accessibilities, physical attributes, facilities and property value significantly influenced settlement preferences in the area (Khakim, 2009).

Research conducted in Manado City studied factors that home buyers considered in choosing settlement location. Each settler has their own preferences. This research prioritized organizing and ranking basic considerations and reasons the consumer has on determining settlement location. Eventually, the dominant factors that affected people in Manado City on determining settlement location emerged (Kalesaran & Waney, 2013).

Research in Manado City concluded that income is the important factor people in Manado City considered as settlement preferences. Middle to higher income population and private employees are more capable to choose settlement location in suburban area especially in Perumahan Griya Paniki Indah cluster, Mapanget sub district (Ani, Rondonuwu & Takumansari, 2014).

2.2. Hypothesis

After studying theories related to settlement preferences and constructing research framework, temporary conclusion or hypothesis toward problem formulation can be stated. Null hypotheses or H_0 need to be tested statistically while Alternate Hypotheses or H_a depends on the result of H_0 tests. Hypotheses of this research are:

- H_0 : Accessibilities, facilities and environment qualities are factors that influence private housing cluster settlers in Medan Johor sub district on choosing settlement location.
- H_a : Private housing cluster settlers in Medan Johor sub district have other consideration other than accessibilities, facilities and environment qualities on choosing settlement location.
- H_0 : Social statuses of respondent in private housing cluster correlates with respondent's facilities necessities.

- Ha: Social statuses of respondent in private housing cluster do not correlate with respondent's facilities necessities.

3. Research Methods

This research is a descriptive quantitative research. Quantitative method helps categorize, organize and process statistic data acquired from questionnaire. The goal of descriptive research is to create a systematical, factual and accurate description of studied phenomenon, regarding its fact, characteristics and relations (Nazir, 2011).

Variables on environment condition and facilities condition were determined using questionnaire on settler opinion toward the condition of the environment, facilities and accessibilities distributed throughout housing cluster. Facilities in question for nearby respondents were: religion worship facilities, educational facilities, public open spaces, economic facilities and sport facilities. Accessibilities in question were: road quality, road width, number of roads and public transportation. Environment conditions in question were: air quality, vegetation, hygiene, sanitation and security.

Only samples that fulfilled the criteria were taken from total population of private housing cluster. Time span and total occupied house in housing cluster taken as samples were determined using post occupancy evaluation or POE.

Criteria of samples are: clusters that its quality can be valued by its own settlers namely cluster that has been inhabited in the last 10-20 years and 80% of the cluster has been occupied (Gou & Lau, 2010). Cluster has 50 housing units minimal. That number was determined with the assumption that each house has five family members. Therefore, each of 250 persons needed to, at the very least, have facilities service standard in accordance with Keputusan Menteri Permukiman dan Prasarana Wilayah No. 534/KPTS/M/2001. Samples that fulfilled the criteria mentioned are; Perumahan Citra Wisata, Taman Johor Indah Permai I dan II, Johor Katelia Indah, Villa Prima Indah, Graha Johor and Bukit Johor Mas.

Data collection conducted using proportionate stratified random sampling. Random samples were taken proportionally by dividing the population in sub groups. In this case, the population was divided into several private housing clusters and then samplings were conducted in each cluster. Sampling was conducted proportionally in clusters that fulfilled the criteria as samples. Proportion in this research was determined using total number of housing units in each cluster that meet the requirements as samples. Then, samplings were conducted randomly.

$$n = \frac{N \cdot p(1-p)}{(N-1) \cdot D + p(1-p)} \quad \text{dan} \quad D = \frac{B^2}{4}$$

Where:

N = total population

n = total samples

B = bound of error

p = generally obtained from previous study. If there were no studies previously, the value was assumed into 0.5 (Nazir, 2011).

Bound of error of this research was determined into 10% which means the accuracy of this research is expected to be 90% accurate. 10% bound of error were determined with the consideration of technical problems such as population number, population homogeneity in studied area and sampling precision. Total samples were 94.9412 units rounded up into 95 units to fulfill minimum sample requirements.

3.1. Analysis Methods

Data obtained was simplified by grouping similar data. Questionnaire data were grouped and ranked using Likert scale. Respondents answers were graded from very positive into very negative. Using Likert scale, primary data from questionnaire can determine respondents' value of their settlement as very good, good, average, bad or very bad. Data that passed coding phase were processed statistically using computer and SPSS 23 program. Validity and reliability test conducted using statistical test. This research used correlation validity method using Product Moment Pearson Correlation formula. Reliability test was conducted to determine the accuracy and reliability of measuring instrument. Reliability test conducted was Alpha Cronbach test

4. Research Area

4.1. Medan Johor Sub District

The area of study was Medan Johor sub district as shown in Figure 1.

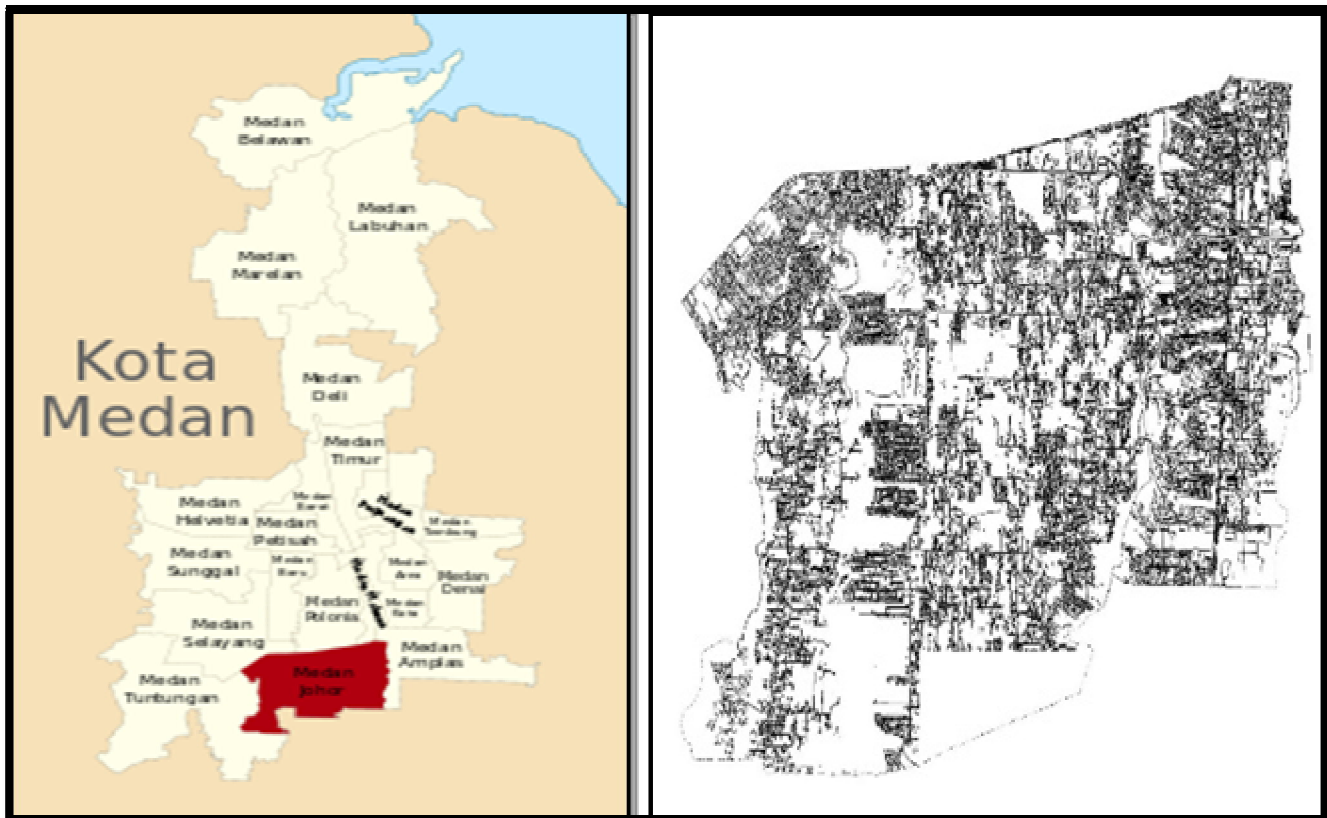


Figure 1.: Medan Johor Subdistrict

Housing clusters in Medan Johor sub district was spread throughout the sub district such as clusters located on main streets on Jl. Karya Jaya and Jl. Karya Wisata and clusters located on secondary roads. Private housing clusters can be found on different location in Medan Johor subdistrict. However, private housing clusters were seen concentrated on Jl. Karya Wisata, Jl Eka Warni, Jl Eka Rasmi, Jl Brigjen Katamso, dan Jl. Karya Kasih. The convergence of housing clusters resulted in higher mobility and higher activity of settlers in those clusters as shown in Figure 2.

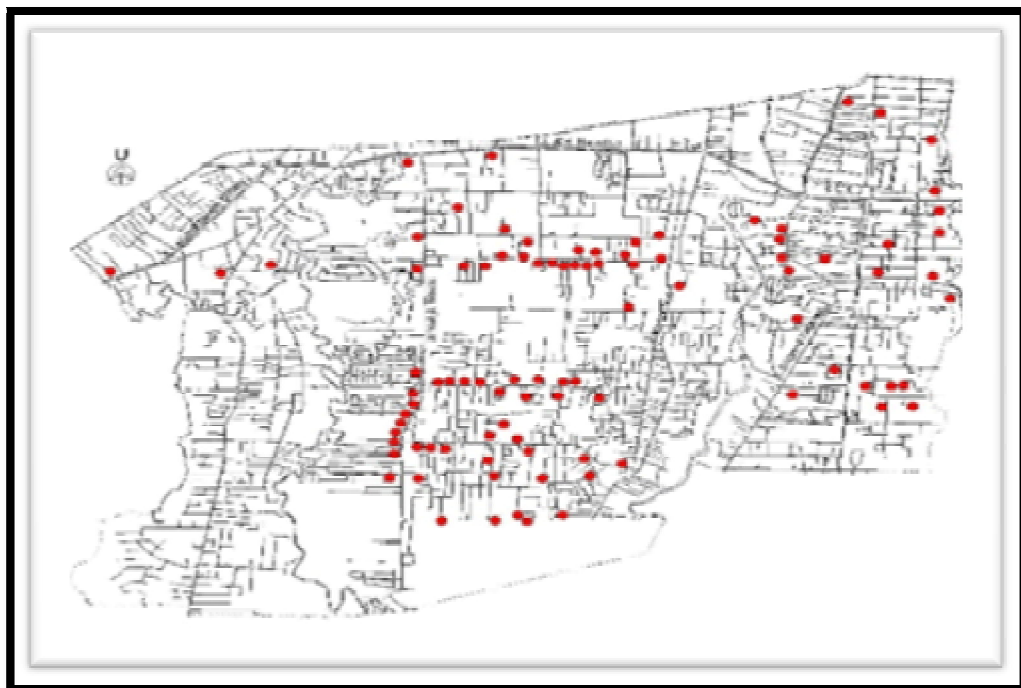


Figure 2: Private Housing Clusters in Medan Johor Subdistrict

Private housing clusters used as samples needs to meet these required criteria: completed development in the last 10-20 years, 80% occupied and minimum 50 housing units total.

5. Results and Discussion

5.1. Settlement Preference of Respondents in Medan Johor Sub district

Human's level of need toward a home can be categorized into: Survival needs, this basic necessity needs to be fulfilled first; Safety and security needs, in this level home is perceived as self-safety necessity and owning rights; Affiliation needs, home is perceived as an acknowledgement from certain groups; Esteem needs, this level of needs correlate with psychological aspects (Gou & Lau, 2010). Humans need different environment choice. Some people will be much comfortable with local and intensive environment, while others prefer wider environment. Some people will prefer homogenous environment while others prefer heterogenous environment. These preferences resulted in different satisfaction from home ownership and home location. (Rapoport, 2002).

To test the first Null Hypothesis H_0 on accessibilities, facilities and environment qualities, as factors influencing private housing settlers in Medan Johor sub district on choosing settlement location, Frequency test was conducted on respondents' answer in area of study. In preferences case, respondents in area of study suggest that number and availability of facilities and environment condition are influential in deciding settlement location in Medan Johor subdistrict. Some respondents decided to live in Medan Johor sub district based on environment factors, other respondents decided based on accessibilities factors while others decided on other factors. The summaries can be seen in Table 1.

No	Preferences	Frequency
1	Accessibilities	21
2	Facilities	33
3	Price	6
4	Securities	5
5	Environment	22
6	Prestige	1
7	Community	2
8	Privacy	5

Table 1: Medan Johor Sub District Respondents' Preferences

Based on data from questionnaire distributed to respondents in area of study, the first Null Hypothesis which states that Accessibilities, facilities and environment qualities are factors that influence private housing cluster settlers in Medan Johor sub district on choosing settlement location is valid and acceptable. Based on the frequency of the answer from 95 respondents, 33 of them suggested that facilities are factors in choosing settlement location. Other factors such as environment were suggested by 22 respondents while accessibilities were suggested by 21 respondents. On choosing settlement location, humans have different reaction on different culture as they fulfill their functions and needs (Furlan & Faggion, 2016). Settlement needs, including additional facility needs, becomes a factor that respondents considered because settlement preferences mean the likeliness of a settler to choose a settlement location over another location based on factors and variable that settlers considered (Sinulingga, 2005).

5.2. Accessibilities

Accessibilities become a factor because of ring road around the area of study. Ring road is considered beneficial for respondents because it helps them mobilize into other areas using personal vehicles. Accessibilities are one of the factors in choosing settlement location. Accessibilities factors considered are transportation convenience and proximity (Koestoer, 2001).

Public transportation has been well valued. Pedicabs were scattered throughout sub districts. Recently, online ride sharing application has been utilized by people in the subdistrict. Technological advances in transportation affected humans to settle further into suburban area because it affected their ability to mobilize (Yunus, 2000). City transportation only passes through Jl. A.H Nasution and Jl. Karya Jaya frequently but with minimal route choices. Traffic condition was considered severe. Traffic jams everyday mostly on Jl. Karya Jaya, Jl. Karya Wisata, and Jl. A.H Nasution. Traffic jams mostly occurred in the morning, afternoon and weekends. Traffic jams were slightly reduced during long holidays. Respondents suggested that traffic jams are increased because of increasing personal vehicle and less traffic orders. The summaries can be seen in Table 2.

No	Accessibilities	Mean
1	Road quality	2.52
2	Road total	3.45
3	Road width	2.19
4	Public transportation	3.13

Table 2: Respondents Valuation on Accessibilities

Proximity to location of work becomes a factor in considering settlement location. This group of respondents chose to live in Medan Johor sub district because their place of work is also located in the same subdistrict. Offices clusters can be found in the area of study. Offices clusters included are government offices and business centres.

5.3. Facilities

Facilities that were considered well in the area of study are religio-worship facilities, educational facilities and economical facilities. Religion worship facilities was considered well because it was spread evenly in the subdistrict, easily accessed and considered hygienic. Educational facilities such as preschool, elementary school and middle school were considered well equipped however high school and higher education facilities were considered inadequate. Housing cluster settlers mostly enrolls in Al-Azhar school located on Jl. Pintu Air IV. Local graveyards in the area were considered overcrowded. Facilities were valued better or worse because respondents based their answer their ideal values (Kuswartojo, 2005).

Economic facilities were considered well. Traditional markets, supermarkets, minimarkets and wholesalers can be found and easily accessed. Economic facilities become a factor for respondents because humans generally consider the availability of life support materials (Furlan & Faggion, 2016).

Sport facilities were generally considered well however mostly commercialized and less people were routinely utilized its function. The analysis is listed in Table 3.

No	Facilities	Mean
1	Religion	4.06
2	Education	3.78
3	Graveyard	3.38
4	Economic	4.31
5	Leisure	3.01
6	Green Open Space	3.22
7	Sport	3.18

Table 3: Respondents Valuation on Facilities

5.4. Environment

The decision in choosing a location was often influenced by green open space, topography, views and the combination of environment characters and human social relations related with social level and status (Furlan & Faggion, 2016). As consumers, people tend to choose situation and condition they valued positively for them.

Air quality in the area of study was considered cool and clean. Vegetation condition was considered well with green open spaces and trees planted on the side of the several roads giving greener image for the area. Generally, people valued minor and constant elements more than major elements such as public green space. The air was considered polluted on few roads such as in Jl. AH Nasution and Jl. Karya Jaya in which large trucks often passed by.

Environment hygiene inside private housing clusters was considered clean however many areas outside of the clusters that is considered unhygienic. Security inside housing cluster was considered safe with the presence of security forces, however outside of the cluster was considered less safe. Home as living space must be able to provide sense of security to do activities, to safekeep valuables and guarantee personal rights (Budihardjo, 2009). Some respondents valued that Medan Johor Sub district was quiet and peaceful. Some roads and areas inside the clusters were still waterlogged in case of rains. The analysis is listed in Table 4.

No	Environment	Mean
1	Air	3.23
2	Vegetation	3.21
3	Hygiene	3.03
4	Sanitation	2.58
5	Security	3.11

Table 4: Respondents Valuation on Environments

Respondents valued the air quality and vegetation well because of adequate trees planted on the side of primary and secondary roads in addition with the availability of open spaces such as Taman Cadika dan Danau Citra Wisata inside the area of study. Both aspects of the environment created cooler and greener image of Medan Johor sub district which was highly valued by respondents.

5.5. Correlation on Social Status and Facilities

Respondents in area of study are mostly middle-income population with average spending of Rp. 2,000,000 to Rp. 5,000,000 monthly

To test the second Null Hypothesis H_0 which states that social statuses of respondent in private housing cluster correlates with respondent's facilities necessities, crosstab was conducted. After cross tabbing, data was analyzed using

chi square method. Crosstab was applied by comparing respondents' economic level variable with their valuation accessibilities, facilities and environment condition in area of study. Chi square test produced several variables that correlated with respondents' economic level that answered the questionnaire in area of study. Chi square analysis result indicated the relation on economic level with open spaces, vegetation and hygiene.

Economic level influenced response valuation on open spaces. Respondents with low economic level complained on poorly maintained open spaces while respondents with high economic level were grateful with the availability of open spaces in their clusters. Chi square test on spending and open spaces suggested correlation between both variables.

Respondents with higher economic level were more forward thinking with the need of open spaces. This group of respondent highly valued open spaces availability located near their house because it has additional functionality such as reducing the possibility of floods by absorbing excess water and improving the quality of air and environment in the area of study. Lower economic level respondents' complaints on open spaces were mainly on the physical condition of open spaces such as hygiene lighting which they valued inadequate.

Air quality in Medan Johor sub district was valued differently by different respondents. Respondents with lower economic level valued the air quality in Medan Johor sub district better than other sub districts. They believed that open spaces and vegetation condition in their location is good enough in contributing into increasing air quality in their location. Respondents with higher economic level valued the air quality in Medan Johor sub district less than other respondents' group because of large trucks traffic in main roads such as Jl. Karya Jaya dan Jl. A.H Nasution. They believed that large vehicles contributed into decreasing the air quality in their location. This group of respondents wanted less traffic of large vehicle in their location similar to downtown area. Chi square test suggested the correlation on respondents' economic level and air quality.

Respondents with different economic level valued the hygiene of their location differently as well. The higher the economic level of respondents, the more they complained on the low hygiene quality of their location especially outside of their clusters where they live. Respondents with different economic level have different standards on hygiene. Chi square test suggested correlation on economic level and environment's hygiene. Social backgrounds were influential because a settlement indicates the value of the community inside. (Usta 2010). The decision on settlement location of respondents is related with their social status, prestige and social homogeneity in their location (Alvarado, Donath, & Bohme, 2009).

6. Conclusion

The first Null Hypothesis which states that accessibilities, facilities and environment qualities are factors that influence private housing cluster settlers in Medan Johor sub district on choosing settlement location is valid and acceptable. Accessibilities, facilities and environment qualities were proofed to be factors influencing settlers of private housing complex to decide settlement location in Medan Johor sub district.

Based on analysis conducted, factors that shape settlement preferences in area of study were: (1) Facilities: Economic Facilities, Religion Facilities, Education Facilities and Open Space. (2). Environment Condition: Air quality and Vegetation (3). Accessibilities: Ringroad and Work location. Based on data from chi square analysis result, the second null hypothesis which states that social statuses of respondent in private housing cluster correlates with respondent's facilities necessities is valid. There is correlation in the area of study between respondents' economic level and their facilities necessities such as open spaces, air quality and hygiene. This correlation occurred mainly because people with high economic level tend to choose location which has advantages over other location. Middle economic level people in area of study also consider facilities' advantages as well. Environment condition becomes the base of consideration of some respondents because the higher the respondents' social status, the higher their needs for better environment quality especially in aspects such as air quality, vegetation and hygiene.

Further research is needed to study settlement preferences using variables other than respondents' economic levels and their valuation on facilities. The advantages that Medan Johor sub district has on the respondents' perspective of their facilities availability and environment qualities can be considered by related official agencies. These advantages can become references for other area in Medan City so that each area has their own attractiveness. People's characteristics, needs, trends and preference can be used as reference by private developers to develop housing clusters that meets the demands of the consumers. Housing area can also be spread into other area in Medan city as opposed to being concentrated in certain areas. Other suburban area can also develop and increase its land values which had happened in Medan Johor sub district.

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