Residential Land Use Change and Territorial Conflict

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Abstract. This paper discusses the process of land use change and its consequential territorial conflict. Such change often occurs in residential areas with a high land value, adequate public facilities, an access to the city center, and the landowner’s desire to open a business of his own, as well as the leeway in regulations that allows for land use change. This research focuses on the social impacts of land use change such as comfort disturbances, territorial disturbances, and social disturbances. This research used observation and interview methods on a street in the Bintaro Jaya residential complex. We observed the residents’ behavior, activities, and circulation that occurred and after that, we conducted in-depth interviews with the residents to understand the perception on their territory and the developer. We found that there was a territorial clash between the residential and the commercial space such as parking area issues, visual and audio disturbances which had a negative impact on the residents. We concluded that the main road is not effective to be used for a residential space due to the potential to be developed into commercial space in the future.

Keywords: land use change; residential space; commercial space; territorial clash

1. Introduction

The rise of population in the capital city of Jakarta has an impact on the rise of the demand for residential areas. More developers are competing to provide and to build the best residential they can offer to the consumers. Residential areas built by big developers like Bintaro Jaya is one of the most wanted types of residential in capital cities like Jakarta because this type of residential area is usually organized because the developer has the control over the layout of the area and the access. They also provide a wide range of facilities and amenities for the residents to meet their daily needs. As a result, there is an increasing number of big residential area developments in order to meet the equally increased market demand.

There are some factors that influence the customer to purchase a house. Those factors are high investment value, security, identity, and privacy. This is a challenge for developers that they have to address if they wish to gain any customers. Big residential area development promises a residential environment that can provide comfort for its residents and the ability to fulfill their need for social and physical activities. Not only that, the developer usually has assigned a certain part of their residential area for a commercial block. Unfortunately, sometimes the commercial block provided by the developer is not enough due to the limited numbers of available land or the accessibility. Sometimes, the residents themselves have the desire to open a business in order to offer more choices for other
residents to meet their need or simply to have another mean of income. It drives the residents to change the land use of their home into a commercial area.

The scarcity of land triggers a competition to get the best valued land. It a hard thing to accomplish, thus resulting in the high value and price of the available land. It was also the trigger that spark the desire of the residents of Bintaro Utama 3 Street to change their houses into a place for business. At first, what seemed to be a small number of commercial buildings within the residential area started to grow over time until finally, the number of commercial buildings has exceeded the residential buildings. The phenomenon that occurred on Bintaro Utama 3 Street actually had disturbed the balance provided by the developers. It created a duality of land use which took place within the same area, namely the residential area and commercial area.

A good quality house is expected to be able to provide a comfortable place for its users in order to help them to meet their needs. According to Untermann and Small (1977, p.39)[1], there are some conditions that need to be met before a house can truly be categorized as a good quality house, namely territory, privacy, orientation, identity, and accessibility.

### 1.1. Commercial Area

A commercial area can be categorized based on the type of neighborhood where it’s located, such as neighborhood center, community center, and regional center. The trading location is important to be considered because a strategic location will attract more customer, which will raise the success rate of the business. If it was easy for both public and private transportation to access the area and for the supplier to deliver the goods, then more people will surely visit the area.

|                     | Neighborhood center | Community Center | Regional Center                                                       |
|---------------------|---------------------|------------------|----------------------------------------------------------------------|
| **Location**        | On the main road, within the neighborhood center. | On the bigger area, within the district area | Within in a center of a region and near transportation facility and community center |
| **Commodity**       | Vegetable, daily needs, small restaurant | Vegetable, daily needs, restaurant, commercial facilities | Vegetable, daily needs, bigger restaurant, bigger commercial facilities |
| **Size & capacity** | 30,000-50,000 sf 2500-40.000 people | 100,000-300,000 sf 40,000-150.000 people | 100,000-300,000 sf 40,000-150.000 people |

The commercial types mentioned above are the examples of an independent commercial area that has an area for its own. The area limits its functions strictly to trading activities so that they don’t have any other functions. It usually has specific objectives, specific types of commodity, and specific numbers of people they can contain.

Considering the potential numbers of incoming visitors to the commercial area, it would impact the quality of life within the residential area whether good or bad. The impacts are related to economic, environmental and social aspects (permendagri no. 4/1996 on land use change).

The first impact that was related to economics is the rise of new job opportunities. This would benefit some parties since it could reduce the number of unemployment in the surrounding area. More taxes could be imposed by the developers and local government on the business activities that could raise the value of the area.

The second impact was on the environment and it can be seen on how the presence of a commercial area within a residential area would destroy the spatial structure of the neighborhood. The space
become irregular, more cluttered, and looked like a slum. It also caused sound and air pollution. The street was more crowded especially near the commercial spots.

The third impact was on the social aspect. The territorial conflict between the commercial and residential area created disturbances such as visual and audio disturbances and privacy issue that would end up decreasing the habitable level in the residential area. A housing planned by the developer should be able to control the layout and function of the building in order to prevent land use change like this.

1.2. Territorial Conflict
Territorial conflict is a boundary clash between two lands with recognized ownership. Usually, the boundary of each land is determined by the land certificate, but sometimes it is not enough to convince the other residents’ that the area truly belongs to someone. They usually recognize the land ownership based on what they could perceive. In this case, the boundary is determined by non-physical aspects such as emotion, smell, and hearing. The examples for this perceived territory boundary are front garden, terrace, or even the neighborhood itself. On the smaller scale, it appears as physical boundary between rooms inside a home like walls or fences [1].

Territorial boundaries based on perception are important because the conflict usually occurs in a public space that can be accessed by everyone such as the front area of the house. For example, due to the perceived territorial boundaries shared by every residents, the entire street Bintaro Utama 3 belongs to them due to its proximity to their homes. If an unknown person enters the area or violated it, it would affect the comfort of the residents. Therefore, it can be said that a residential area is more than just a building but also includes the surrounding area of the house.

Territories can be divided into several groups. Altman (1980) divided it based on the degree of privacy, relationships, and reach, namely (1) primary territory, (2) secondary territory, (3) and public territory. Primary territories are very private places, people who are allowed to enter are the closest people that have a special permits from the owner. The second is secondary territory whose territorial control is less powerful because it must be shared with other people in the area. The third is public territory that includes open spaces for the public that is open to all people to enter.

The example of territorial change is when the primary territory of the house becomes a secondary territory because the owner allows other people or guests to enter. In a larger scale like a residential area, it can be categorized as a secondary territory because the area is shared by fellow residents who know each other, but it can turn into public territory when the access is open to the public. With the addition of the visitors of commercial buildings that come to visit, the residential area becomes a public territory.

1.3. Linear Residential Pattern
Linear residential pattern is formed without any form of grouping that enables the public main road to cross it. Untermann & Small (1977)[1] argued that the main road is suitable for industrial, commercial, or shopping development because of the high number of vehicles that use the road, causing it to be busy and crowded. This active mobilization can trigger the change in land use.
Linear pattern comes from an arrangement of shapes along a line that repeats each other. Linear patterns have a collector's path as the main road and local road to reach each house. The degree of privacy in linear residential pattern is shown in the figure below.

![Figure 2. Degree of Privacy in Linear Pattern](Source: personal documentation.)

The a straight line represents the linear form of the residence. The diagram shows that the circle as a privacy bubble and a line as a disturbance. More interference lowers the intensity or degree of privacy in a house which is depicted by the thickness of the formed lines.

The linear pattern forms 4 types of territories, namely (1) houses as primary territories, (2) front yard as secondary territories that acts as a semi-private area, (3) pedestrian path as a semi-public area, and (4) the main road as a public area. The privacy of the houses located in this kind of location usually suffers from a low comfort value due to the proximity of the entrance door to the local road.

2. Method
The impact caused by residential land use change into commercial in the residential area was assessed using a descriptive exploratory approach. The use of this method was done through observation of the actual object with the aims to reveal an in-depth study about the causes and problems that affect the occurrence of something. This study used a deeper explorative descriptive method to satisfy our curiosity about land use change. After that, the data was analyzed using qualitative method based on the data obtained through observation and interview about user experience and history. The aim of the interview was to make an in-depth explanation of the object.

There were two stages to determine the location of the observations. First, we had to determine the type of residential area that was suitable to observe the changes in land use from time to time. We limited the location to a residential area that had the duality of land use for a commercial and residential purpose that create a territorial conflict that had direct effect on the residents. Second, we looked for the characteristics of the area that had the potential as a place to develop commercial areas in the residential area. It must have strategic land values, busy, and were located on the main road.

In the end, we chose Bintaro Jaya sector 3 residence that had potential since it was strategically located on a busy and active main road called Bintaro Utama 3 Street. Bintaro Utama 3 Street suffered from a lot of land use change, but it still had some residential spaces that stayed true to its root. After that, we found more in-depth factors that caused land use change. One of the causes turned out to be
the proximity to the center of the commercial area. The commercial area triggered the land use change on the nearest road. Therefore we limited my observation to only half of the street, which only included houses from RT XI.

Analysis was used to identify land use change and its impacts on territory. The intended results in the analysis were:

- Changes in Building Functions within the observation area
  We looked for the number of houses along the observation path and years of land use change. The result of data processing were processed photos; photo sequences taken along the path of the observation path.

- Territorial impacts of land use change
  The aim of data processing was to find the conflict between residential and commercial territories through mapping the parking density points. With that, it would reveal which areas that had territorial conflict.

- Behavioral aspects and activities of commercial visitors and residents.
  Data was taken through an observation without being noticed by the respondents. I followed the behavior of respondents who are in the observation area by looking at the movements of visitors when they entered. I observed where they parked their cars and where they headed to.

3. Result

Bintaro Jaya was developed since 1979 by PT Jaya Real Property Tbk. In 1979, PT Jaya Real Property Tbk was a developer who introduced the concept of city park. Twenty years later the concept changed to "The Professional's City" because the target buyer segment changed to Jakarta's intellectuals and professionals. As residential housing development, Bintaro Jaya provides adequate facilities and continues to expand the development of the residential area by increasing the number of residential units equipped with facilities and commercial areas.

For the case study sample, we chose only three sectors starting from one Rukun Tetangga or RT (neighborhood) on the main road of Sector 3 called Bintaro Utama 3 Street. The observed area was RT XI which was divided into east side and west side. This section of the road was chosen because it had a considerable number of land use changes compared to other regions. It was due to its proximity to the existing commercial area.
This road was also the access for residents in Sector Three to Sector Seven to commute on daily basis, thus rendering it important for the residents of Bintaro Jaya. This road was divided into two lines; one led to Sector Two and the other side led to Sector Four. The main road was separated by a 60 cm wide road divider and had a 1.2 meter wide pedestrian path on each side. In the commercial buildings, pedestrian paths were put on the same level as the road and didn’t have a guardrail because it also served as the parking lot for commercial area. Road density piles up at the end of the road that met the intersections to Sector Four.

This road was a boulevard because there were buildings on both sides of the road that had the same design and had far enough building lane [1]. This type of road triggered the commercial potential in the Bintaro Utama 3 Street.

Many original facades of the building had changed due to land use change by the original occupants to entrepreneurs who bought or rented buildings on Bintaro Utama 3 Street. They renovated the facade of the building to fit the function of the business building.

Figure 3. Bintaro Utama 3 Street
(Source: PT Jaya Property data with authors’ processing)
Figure 4. Commercial Building Change in AP Block and AM Block
3.1. House as Residential and Commercial Area
The buildings, located on Bintaro Utama 3 Street, consisted of houses that function as a residential space and also functions as a commercial space. Out of the total of 36 houses, there were 13 residential houses, 22 commercial functioning house, and 3 empty lots. 61% of the total house had changed its function to commercial (based on survey results). Several types of commercial buildings in the form of houses that function as commercial services (shops) and houses that function commercial services as well as residential (shop houses).

The building in the observation area started from the AP block which was at the west side Bintaro Utama 3 Street with a total of 17 buildings and 2 empty lots. The total buildings that still retained their original facade were 10 buildings with a total of 5 dwellings and 5 business buildings. Across AP block was AM block that consisted of 18 buildings and 1 empty lot. In block AM, 9 buildings still retained their original facades with a total of 5 dwellings and 4 business buildings. Land use change appeared in the forms of laundry, restaurants, schools, pharmacies, property services. The number of residences 18, but only 13 houses were occupied while 5 houses were uninhabited. There were 6 inhabited houses in AM block with which also functioned as a house and business place while there were 7 houses from AP block with doubles functions as a place of business where the business owner also occupied houses.

Sector three was built and began to be occupied in 1990. At that time, all building units were functioned as dwellings. But over time, building functions at several locations have begun to change.

![Figure 5. Land Use Transformation](Source: authors' documentation)

Changes in land use emerged in 1995 when one of the unit owners at the east of the road opened a pharmacy business at his house. It became one of the triggers that drove the other owners to change their private houses into a business place. There was actually an announcement billboard that banned the owner to open a business at their house, but because of the negligence of the local government, this area had escaped the law. Since the establishment of a business place as a pharmacy, other houses followed suit. At first, the business owners lived at the house. But along the way, the owners sold their houses to any interested parties since they had good investment value for a business. Around 1998-2000, 5 commercial buildings started to appear. From 2005 to 2010, the land use shifted to be commercial oriented and they had dominated the street compared to the original residential function.

3.2. Territory in Linear Residential Pattern
Territorial in a residential was determined in the pattern of housing area. Bintaro Utama 3 Street had a linear residential pattern, so the houses were passed by a busy road.
The picture showed the linear residential pattern. The observed area wasn’t grouped and the arrangement of houses was lined up along the public main (represented by the black line) with the main road as one of the elements in the pathway. Meanwhile, the surrounding area was in the form of clusters that had grouping areas with one entrance controlled by security guards while the other gate was permanently closed. Judging from its linear pattern, the territory formed in this scenario was house as primary personal territory.

One residential unit was classified as the primary territory. It was private because this place was owned by someone who had legitimate ownership over the land. If there were other people who wish to enter this territory, they must acquire the permission from the owner. Then the pedestrian path and the front area of the house was classified as the secondary territory because they were still related to the house and the owner still perceived the area as theirs. Then the main road was a public territory because this road included open spaces for the public that could be accessed by everyone.
Based on the survey result, the residents perceived the entire area of Bintaro Utama 3 Street their territory as until it met the main intersection, which was represented by the dashed line in figure 9 as a territorial boundary. According to residents, the whole area was theirs because it was one of the factors that built comfort. The houses coexisted with their environment to create a safe, comfortable, and clean environment.

4. Discussion
Residential areas that are equipped with adequate facilities and easy accessibility drives its development to be faster than others. The proximity to the city center and easy transportation finally make urban people use residential spaces for other function [2].

4.1. Factors of Land Use Change
Based on the results of interviews, the factors that caused land use change in the area of Bintaro Utama 3 Street were (1) the characteristics of land values, (2) land accessibility, (3) personal characteristics of landowners, and (4) the ineffective use of regulations that apply in the region.

The characteristics of land values were related to its strategic location and its proximity to other facilities. Looking at the scope of regional area, Bintaro Utama 3 Street was a part of Bintaro Jaya residential area. It was located between the commercial areas. The commercial area close to this road had a high land value and productivity. Therefore, the closer the land to the commercial, the greater potential it had to become a commercial space.

Accessibility was another key factor to trigger land use change. Bintaro Utama 3 Streed had good accessibility for transportation. It was very important for buyers or consumers who wished to visit a commercial business. With a good accessibility, entrepreneurs would be interested to build a commercial place in this location because it would attract buyers or visitors. Good accessibility could be determined by the public transportation access and easily accessible route.

The personal characteristics of landowners can be linked to their income. From the survey, around 61% of landowners sold their houses because they knew how high the value of their lot. On the other hand, 30% of landowners decided to only rent their residential lot to business owners (out of a total of 61% of commercial buildings that change). They said it was more profitable rather than selling their lot to the entrepreneurs because every year, the value of land in this area increased.

The other reason why the landowners sold their homes was because they didn’t feel comfortable any longer due to the many privacy disturbances in their daily lives. Residents who stayed there for
more than 10 years were only 7 households out of a total of 36 residential units. Others were not interested in living in this area for a long time and were more interested in selling or renting them out. The last factor was the ineffective regulations implement by the government. Even though there had been an announcement posted on one side of the road that says that "residential areas on Bintaro Utama 3 Street are not permitted for business premises", commercial area kept emerging.

4.2. Territorial Conflicts
Land use change that occurred was one of the causes of territorial conflict. Bintaro Utama 3 area was meant for residential area but it was changed into a commercial. It had negative impacts that disrupt the lives of citizens that were caused by the commercial area along this road. Commercial buildings invaded the residents’ territory. The territorial conflict was blatantly seen on Bintaro Utama 3 Street such as (1) parking lots, (2) visual and audio disturbances, and (3) security breach which affected the primary and secondary territorial boundaries of each occupant.

![Figure 9. Territorial Spatial Conflict](Source: authors’ documentation)
The most apparent territorial conflict was the density points in several business places. From the observation, we found a very high density of parking lots near restaurants and property services because these two types of businesses intersected with the residents’ secondary territory. Whereas for other types of businesses such as salons, shops, pharmacies, and laundry, they didn’t interfere with the residents’ secondary territory but merely touched the tertiary territory based on the lower density of parking lots.

Visual disruption according to the informant, Mr. Wowor, was at the time of the boundaries of the area which he admitted his ownership was disturbed by the presence of commercial buildings. Disturbances regarding visual disturbances made the area along the RT XI Jl.

Bintaro Utama 3 which he admitted was the boundary of his ownership area, became tangent to the existence of commercial buildings. He felt disturbed when the building function changes more and more. He said that the area looked more like a slum because irresponsible business places often piled up their goods in front of the store. This, according to him, was damaging to the beauty of the environment which should be neatly messed up and look shabby. He was not very fond of changing the function of the building along the residential road, because in addition to damaging the aesthetics, the residential area here reduced comfort and occupancy.

Audio disturbances also often emerged from commercial buildings. According to the results of the audio disturbance survey, there was a lot of noises coming from the activities inside commercial buildings such as musical accompaniment. When the volume was high, the resident right next to the commercial building felt disturbed because they could be heard from their house. The most frequent noise came from vehicles that used the road.

The security breach happened in the area. One of the residents told us that he had lost his car to robbers. Residential that was close to the main road had a higher risk of crime especially if it didn’t have any security guard. Unfortunately, the security measure at Bintaro Utama 3 Street was weak. And now, with the higher number of strangers who came to their area to visit the commercial buildings around their house, the risk of crime increased even greater.

5. Conclusion
Residential land use change to become commercial space in Bintaro Utama 3 Street resulted in the friction between two building functions that usually occurred in the public space like the main road. Since territorial boundaries could be based on personal perception, the residents of Bintaro Utama 3 Street assumed that the entire area of the street belonged to them because they thought the street was important to increase their quality of life and comfort. The appearance of the commercial building in the area of Bintaro Utama 3 Street disturbed the level of comfort and the condition of the environment around the housing area because there were parking lots, visual and audio disturbance, and security breach. The decreased in quality of live drove some homeowners to sell their houses because they no longer felt comfortable anymore.

From this study, we concluded that if the residential area is located on the main road where the collector's road has a strategic location, high land value, and easy access, then there would be a great chance that it would be developed into commercial space. Therefore, the residential location on Bintaro Utama 3 Street was ineffective.

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