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論文題目

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**The Emergence of Peer-to-peer
Accommodation in Bangkok and its Features
and Impact on the Housing Market**

〈英訳又は和訳〉

バンコクにおけるシェアリングエコノミー
プラットフォーム (P2P) に基づく民泊施設の
出現、その特質と住宅市場への影響

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The Emergence of Peer-to-Peer Accommodation in Bangkok and its Features and Impact on the Housing market

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Abstract

1. Background and rational

Peer-to-peer (P2P) accommodation sharing is a category under the ‘sharing economy’, which is the concept that individual shares tangible/intangible as well as durable/non-durable assets with another person on the digital platform that acted as a medium for the trade. The assets that often offer on the platform are underutilized so that owners earn extra income from the idle properties. Accommodation is one of the biggest assets that has been shared in the sharing economy, mostly for tourism purposes. P2P accommodation sharing is a short-term property rental of less than 30 days that property owners who owned underutilized properties can list their properties the sharing platform in exchange for extra income or cultural exchange. There are several platform under the concept of P2P accommodation sharing, hence, Airbnb is the largest platform that has the biggest number of listings which has been shared around the world, where Thailand ranked 16th in the top 30 countries with the most listings on the Airbnb platform in 2016 (Ke, 2017). In addition, I found that the total number of Airbnb listing in Bangkok grew from <7,000 to >38,000 in Bangkok in the 5-year period of 2015–2019 (Khotcharee & Fukushima, 2022).

Airbnb claimed that the platform helps boost local economies by offering economic gain for idle properties, as well as being advantageous to nearby local businesses for seasonal touristic towns (Jefferson-Jones, 2015; Moreno-Izquierdo et al., 2019). On the other hand, P2P accommodation sharing has been found to negatively impact the rental housing market by increasing rental prices and distorting the market. An increase in the number or density of Airbnb listings in cities served to remove units from the long-term rental market, resulting in a decreasing supply of rental housing (Horn & Merante, 2017; Grimmer, Vorobjovas-Pinta & Messay, 2019). Affordable housing was more affected than high-priced properties (Lee, 2016; Kim, Li & Srinivasan, 2019), and this at times resulted in gentrification (Wachsmuth & Weisler, 2018). The rental housing market in city centers or the area that attractive to tourists were more affected by P2P accommodation sharing (Yrigoy, 2017; Gurran & Phibbs, 2017; Garcia-Ayllon, 2018; Vinogradov et al., 2020; Koster et al., 2021) from the convenient transit service and the shorter proximity to the city center (Jiao & Bai, 2020).

Despite the widely debates on the impact of P2P accommodation, studies on the direct impact on rental housing market are not large enough to be able to explain the situation or applicable to another countries or urban cities that have totally different contexts (Franco & Santos, 2021). Most of researches conducted in the context of large cities in the USA (Barron et al., 2017, 2021; Horn & Merante, 2017; Bao & Shah, 2020) or European cities (Franco & Santos, 2019; Garcia-Lopez et al., 2020; Shabrina et al., 2022). However, housing and rental

housing context in Thailand are different from the international context and could not conclude that the impact and mechanism of the impact will be similar. To my knowledge, there is not yet the specific legal framework in Thailand that trying to lower the growth of P2P accommodation since it have been introduced to Thailand tourist accommodation market, and could affect housing market in Thailand. Only an effort by private agency, for example the condominium juristic person (CJP, management agency of the condominiums) that take care of the development can announce the local rules for residents in the condominiums, not allowing the residents for short-term rentals. In addition, the characteristic and management of property type, especially apartments and condominiums, in Thailand are quite unique compared to the global practice.

Studies related to P2P accommodation in Thailand have mainly focused on travelers' behavior and accommodation choices (Jongwattanamontree, 2015; Ratsamimala, 2016; Priporas, Stylos, Vedanthachari & Santiwatana, 2017), which is within the last group of worldwide academic achievement. Another focus that found related to P2P accommodation in Thailand is the study on the legal aspects of Airbnb that discuss whether Airbnb is legal in Thailand or not (Adunnirat, 2018; Pandey, 2019; Siripunyanont, 2020). Moreover, there is only real estate market research on the effect of P2P accommodation on the hotel business.

This study aims at clarifying the growth of P2P accommodation and its factors in Bangkok, physical characteristics of P2P accommodation, continuation pattern of P2P accommodation, conversion tendency of rental housing to P2P accommodation and its factors, and the impact of P2P accommodation on the rental housing market. Thus, this research will fulfill the gap and provide academic achievement of the clearer characteristics of P2P accommodation, its impact, and mechanism from the supply side (hosts point of view) on rental housing market in developing economic country in the South East Asia that tourism contributed to larger than 10% of the economy. This research will also clarify the impact by different property types and rent segments, as well as location in both macro and micro level of the city to be able to suggest a more suitable policy implication in Bangkok context.

2. Research objectives

There are five main research objectives in this study: (1) To examine the evolution of emerging of P2P accommodation, and clarify what are factors behind the rapid growth of P2P accommodation in Bangkok, Thailand. Then, analyze the quantitative presence of P2P accommodation to the household that rent the house to examine the impact of P2P accommodation on rental housing market in the whole Bangkok level. (2) To analyze continuation pattern of P2P accommodation by analyzing the property owner's decision-making on the active/inactive status of P2P accommodation, factors that influence the decision, and the relations between the influence factors. (3) To analyses conversion tendency and factors from rental housing to P2P accommodation by property type by location from the city center to inner suburbs, and by distance zones from the mass transit stations. (4) To identify the impact of P2P accommodation on rental housing by housing segments/income classification and locations from analyzing architectural features of the major property types, which segments covers properties in the rental housing market. (5) To lead policy implication for monitoring and regulating P2P accommodation in preventing housing market distortion by P2P accommodation in Bangkok.

Overall, this study aims at clarifying the emerging of P2P accommodation, characteristics and its impact on rental housing market to address how to monitor and prevent market distortion of housing market in Bangkok from P2P accommodation.

3. Analytical framework and major surveys

To achieve the research objectives, there are six analyses that conform with the research objectives:

For **objective 1**, three analyses were included to understand the emerging of P2P accommodation in Bangkok. *Analysis 1* is the analysis of emergence of P2P accommodation in Bangkok and its factors analyzed through the annual growth of the property from 2015 to 2019. This study used Airbnb as represents of P2P accommodation from the large market share (78.3%) of the P2P accommodation sharing platforms mainstreaming the use of entire residential units in Bangkok. This research used data from the AirDNA database, since Airbnb does not publish statistics on currently available listings on the platform. The analysis includes portraying the reality of the growth of Airbnb by the active status, what are the demand and supply side factors that triggered the growth of Airbnb in Bangkok rapidly, and what are economic factors that lead to the stableness of Airbnb listings on the platform.

Analysis 2 is analyze the presence of active Airbnb in the rental housing market. The scope of this analysis is all four main property types of Airbnb and examined the data in district level of Bangkok, as well as analyze the presence of active Airbnb of how it concentrate (high, medium, low-medium, low, and not-present) in Bangkok level and focused area level. This analysis clarify the characteristic of the risky area for rental housing that affected by Airbnb in Bangkok.

For the **objective 2**, *Analysis 3* is the analysis of decision-making on active-inactive status of Airbnb listings and the related factors that influence the decision-making outcome of property owners conducted in whole Bangkok level. First, I examined a continuation pattern of Airbnb to identify the precise active-inactive ratio of Airbnb in the whole Bangkok. After that I performed logistic regression analysis to identify the factors that impact the decision-making of hosts to remain their properties as active between 2018-2019 on the platform.

For the **objective 3**, *analysis 4* analyzed conversion tendency of Airbnb and its factor in inner Bangkok. First step of this analysis analyzed the competition between rental housing and Airbnb in the socioeconomic and management factors in the property owners' point of view using ROI as indicator for expected profit. Next step, I developed Airbnb-to-rental housing ratio (A-R ratio) to examine the competition and conversion tendency of rental housing to Airbnb. The ratio calculated by distributing the volume of rental housing market against the volume of Airbnb properties in the same area. The competition were analyzed by property types (apartments and condominiums), and two level of locations (city center to inner suburbs, and distance zones from the nearest mass transit stations).

In the **objective 4**, there are two analyses to achieve the objective. First, *analysis 5* identify architectural features of Airbnb, focusing on apartments and condominiums as they are the most popular property types of Airbnb in Bangkok. This analysis developed criteria to examine physical characteristics of apartments and condominiums, in inner Bangkok. The indicator classify both properties to seven rent grades (low to luxury quality) based on Thailand's National Housing Authority's income classification, affordable rent standards (30%

of household income), and four architectural features of properties. Four main architectural features are (1) building structure and exterior, (2) dwelling unit size and room compositions, (3) dwelling unit facilities and amenities, and (4) common facilities.

Second, *analysis 6* analyze the impact of P2P accommodation on rental housing market segments by analyzed influential area and primary segments of Airbnb that affect the rental housing conversion in inner Bangkok. This analysis conducted in detailed area of inner Bangkok and focused on apartments and condominiums by rents and area segments based on the architectural examination. Influential area will suggest which segmentations of Airbnb has higher tendency to affect the same segments on rental housing market.

Lastly, for the **objective 5**, I suggest the policy implication by integrating all the analyses based on the impact of Airbnb on rental housing market segments.

4. Emergence of P2P accommodation sharing and its impact in Bangkok

The rapid growth of Airbnb

A total number of Airbnb had growth from 6,574 listings in 2015 to 38,249 listings in 2019. Among 38,249 listings, there are a combination of entire (63.6%) and non-entire home (36.4%) listing types. This study focused on entire home only because the whole unit is prevented from circulating in the rental housing market and will affect the rental housing supply. Before the Covid-19 pandemic, supplies of entire home P2P accommodation had growth rate over 100% from 2015 to 2016 (from 3,704 to 7,744 listings) and then the growth rate slowdown. In 2018 there are 18,795 listings and then grew to 24,326 listings in 2019. The trend appears to be moving from a period of rapid growth to a mature state of growth.

The factors from demand side is the growth of tourism in Thailand that has seen remarkable growth in tourism, especially of international tourists from China, ASEAN and Europe, such that 17% of GDP came from tourism. In 2015, 29.9 million tourists visited Thailand, and that number rose to 39.9 million in 2019, for an average growth of 7.5% year-on-year. This increasing demand for tourist accommodation influenced the growth of supply in the sector as well. For supply side, there are two perspectives that explained the rapid growth of Airbnb: (1) real estate development along the mass transit lines, and (2) loose legal framework on short-term rentals. Condominiums is the dominant property types in the newly launched real-estate market and the development size usually large at over 500 units. Property owners whom invested in condominiums are either use for profit seeking from rental housing or P2P accommodation, creating supply surge of Airbnb listings. For legal framework reasons, Thailand does not have strong prohibitions regarding the operation of P2P accommodations, even as there are laws and regulations related to hotels and housing. Some law provide exemption aims to promote local and cultural tourism in Thailand and created an opportunity for homeowners who wanted to utilize their property as a P2P accommodation without violating the law.

Reality in emerging P2P accommodation listings in Bangkok

The analysis revealed that the growth of Airbnb in Bangkok includes a large number of inactive listings. In 2019, there are 11,294 listings (46.4%) that do not have any reservations within the observation year, where 13,032 listings (53.6%) are active. The inactive rate of these Airbnb listings increased sharply from 27.3% in 2015 and grew to 46.4% in 2019. While the growth of active listings show a drop from active rate of 72.7% in 2015 to 53.6% in 2019.

As of the end of 2019, before the Covid-19 pandemic, Airbnb in Bangkok was considered to be approaching saturation.

The accumulation of inactive listings is largely due to the fact that registered Airbnb hosts entered the market without fully understanding it and the effort necessary to attract guests. These hosts failed to achieve the expected occupancy rate (OR) and revenue, but did not cancel their registrations immediately as there is no annual registration fee for maintaining listings on the platform. In 2019, the average OR of active listings was 45.9%. The statistic shows that only 26.2% of listings had an OR of more than 50%, while 65.1% had an OR of less than 20%.

Geographical characteristics of Airbnb and economic factor

The profitability of Airbnb depends on location. In the Inner Bangkok, where tourist accommodation demand is high, the average OR is relatively high at 48.4%, while the average OR in the Inner Suburbs and outer area are 37.1% and 15.7% respectively. The revenue of active apartments in the Inner Bangkok significantly exceeded that of rental housing. This is a part of the reasons why apartments are the most common property type for Airbnb. In Inner Bangkok, condominiums, detached houses, and townhouses can also compete with rental housing to some extent, and this is why 82.4% of active listings are concentrated in this area. Another property types

Presence of P2P accommodation in the households that rent the house

I examined the impact of P2P accommodation in the whole Bangkok level (50 districts) using the presence of Airbnb as an indicator. The presence of P2P accommodation in the rental households gave an image of how large is number of Airbnb against the number of households that need a rental housing to live in Bangkok. The analysis concluded that location is an important factor affecting the impact of P2P accommodation on rental housing market; high impact is concentrated in the inner Bangkok and its adjacent area only. There are four level of presence of Airbnb: high (>5%), medium (>2.5%–5%), lower-medium (>1%–2.5%), and low (>0%–1%). Airbnb's presence in the whole Bangkok in 2019 was only at 1.1%, indicating a lower medium presence. When considering by location, Inner Bangkok has low-medium presence at 2.3%, Inner Suburbs and Outer Bangkok has low presence of 0.4% and 0.1%, which made it clear that impact of P2P accommodation sharing on rental housing market is much higher in the Inner Bangkok than the rest of the area.

A high presence districts exclusively located in the Inner Bangkok (3 districts, 6%), medium presence can also be found only in the Inner Bangkok (4 districts, 8%). Low-medium presence districts usually an adjacent to medium or high presence, in the Inner and Inner Suburb Bangkok (14.0%). Low presence are the majority in inner suburb and outer Bangkok, whereas Inner Bangkok also have prominent numbers of the low presence, thus the low presence districts made the majority (64.0%) of the whole Bangkok. Nonetheless, there are four districts in outer Bangkok that do not have Airbnb in the districts, so-called the 'non-presence' group, accounted to 8% of the Whole Bangkok.

Nonetheless, my research found that the intensity of the impact of P2P accommodation on the rental housing in Bangkok depends on the districts characteristics and locations. Two districts (Watthana, 7.5% and Khlong Toei, 7.2%) that have high Airbnb's presence located in the tourism-concentrated districts that has the characteristics of an international community area. I have therefore undertaken a more detailed and comprehensive analysis of the impact of Airbnb on the rental housing market in the two inner-city districts as shows in section 8.

5. Airbnb hosts' decision-making on active/inactive status of the listings

Since this research found that only 53.6% (13,032 listings) of listings are active, this section clarify the continuous patterns of Airbnb listings as well as the decision-making of hosts to remain properties active on P2P accommodation platform to be able to evaluate the intensity of the impact on rental housing more precisely. Continuation patterns provides attentive numbers of listings that maybe prevented from circulating in the rental housing market.

The sample of this part covers listings operated between 2018 to 2019 by using 2018 as a base year. The observation found that 27.1% of hosts decided to remain active on P2P accommodation platform, and 21.6% became inactive. The patterns that the listings became inactive can classified into two groups: transitional status and non-transitional status. The transitional listings are the one that become active again, and they are accounted for 3.4% among inactive listings. Combining the two groups made 30.5% of listings. Thus, those active listings and the transitional listings are a group affecting rental housing market certainly. While the non-transitional are listings that owners kept their listings as inactive on the platform and will eventually quit the platform after 2-5 years.

The most important factor that affected the decision of hosts to remain listings as active is OR. If OR is higher than 30%–39%, active rate of Airbnb listings increased to 70%, indicating that hosts are more likely to stay active. In addition, hosts have to put more efforts on maintaining attractiveness of the listings to maintain the certain level of OR.

To conclude this section, the growth of a considerably large number of P2P accommodation in Bangkok came from a composition of various listing types. However, listings that clearly affecting the rental housing market in 2019 are the 'entire' Airbnb accounted to 63.6% of total listings. Within the entire home, 53.6% of them are 'active' listings that affect the rental housing market of the 38,249 total Airbnb listings, 13,032 or 34.1% are considered substantially converted from rental housing to P2P accommodation, and the combine number of inactive-transitional listings equal 13,414 listings or 35.1% of the total. In the analysis that follows, the impact of P2P accommodation on the rental housing market were analyzed for entire-active listings, assuming that inactive-transitional listings are very few and neglectable.

6. Physical characteristics of P2P accommodation in Bangkok

Two level of physical characteristics of P2P accommodation in Bangkok will be presented in this part: whole Bangkok and focused study area, which are two districts that has the highest presences of P2P accommodation that mentioned earlier.

Geographical distribution and property types of Airbnb in the whole Bangkok

Looking at the number of the active Airbnb listings, they show a clear tendency to concentrate in districts located in the Inner Bangkok known for their tourist destinations, along with the Chao Phraya River, business centers, commercial areas, and inner city community areas which are adjacent to the CBD with good mass transit accessibility and are characterized by a mix of residential and commercial/business land uses.

I grouped property types of Airbnb into five major types based on the physical characteristics and ownership of the property. The five property types are apartments, condominiums, detached house, townhouse, and others. Apartments are individual rental

units in buildings that owned by a single owner. Condominiums are units owns by individual located in the building built by developers selling to multiple owners, whom can choose to rent out or staying in the properties on their decision. Among active-entire listings, apartments had the largest proportion by 53.6% (6,865 listings), followed by condominiums at 35.5% (4,547 listings), detached houses at 6.8% (877 listings), and townhouses at 4.1% (519 listings). Others properties accounted for 1.7% (224 listings), but included hostels, hotels, and non-residential buildings, which are not the subject of this study. So, the rental housing properties that may has higher impact from P2P accommodation are apartments and condominiums from the large numbers of listings that circulate in the market, especially in Inner Bangkok (82.4% of total Bangkok).

Architectural features of major P2P accommodation types by segments

Based on the analysis of the whole Bangkok, this part of the study focused on apartments and condominiums in the Inner Bangkok as they are the majority of P2P accommodation in the whole Bangkok.

First, architectural features and quality of properties were examined and classified into segments based on the income classification of the National Housing Authority (NHA) and rents affordability of each income bracket. The rent segments were also classified by property types (apartments and condominiums). The rent segments are ranging from low to high income housing segments, representing by grades C- to A+. The architectural characteristics of Airbnb apartments and condominiums differ in terms of overall quality and variety. The apartments have a wider quality range, as there are low-quality (C), moderate-quality (C+, B), high-quality (B+, A), and luxury-quality (A+) apartments. The Airbnb condominiums have better features and higher quality even within the same rent grades as the apartments, starting from moderate quality, high quality and, and luxury quality.

The grades of the apartments and condominiums depend on the quality and design of the building, the size and amenities of the units, and the quality of common facilities. The building quality and design are influenced by the age of the building. Newer buildings tends to have better common facilities and design from a rapid modernization and improved standard of living in the past few decades. The larger scale of development project gave advantage for developers to control the financial resources by increased the number of units and invest in common facilities to attract residents. Thus, it benefits home owners whom also invest in Airbnb because high quality common facility attract guests.

Architectural features of Airbnb apartments

Low quality apartments are not very attractive to tourists from the limited dwelling units facilities and common facilities. The sizes of the units are small, mostly <20 m², and are no larger than 40 m² and the studio type is common. So, owners used low-price strategy to attract guests. In moderate quality and above, units are more renovated and offer better interior styles, common facilities are complete with garden, parking, swimming pool, and fitness center. Units of moderate quality are studio has larger room size of 21–30 m², or one-bedroom of 41–50 m². For high quality, the room type are mostly studio of 21–30 m², but the room are more furnished. Many of the luxury apartments are serviced apartments that have been converted to Airbnb. The quality of the building, units, and common facilities are equivalent to those of moderate-grades condominiums. This serviced apartment type has a much higher price than the lower grades, but tourists are willing to pay due to the higher quality of hospitality provided. The most common unit size of A+ is >60 m².

Architectural features of Airbnb condominiums

Condominiums were originally built for sale, thus, the quality of the building and dwelling units are usually higher than apartments. The majority of Airbnb condominiums are new (less than 10 years old), so the common facilities are complete. The unit sizes of moderate quality (C+ and B) are 21–30 m² or 31–40 m², and the housing is mostly one-bedroom. Most of moderate quality condominiums have a shared living and sleeping area, but some have separate rooms by walls. For high quality, the building is also new and the development size is slightly larger of 300–500 units per project. Common facilities are complete with a lift, lobby, security system, large and well-maintained garden, gym, swimming pool, parking, and shuttle service. The majority of them are one-bedroom type with the unit sizes vary from 20 to 50 m², with 30–40 m² being the most common. Luxury condominiums accounted for approx. 20% in the study area. Building age is similar to another quality range but the exterior and common facilities are outstanding. Lobby is larger with more decorative, fitness center equipped with wider range weights and tools with boxing ring. Swimming pool located on high floor with city views and Airbnb owners are often mentioned in the property's description. Luxury condominiums characterized more by the size and composition of the units that more than 80% of the condominiums are larger than 40 m², which is much larger than the sizes of the high quality condominiums.

7. Conversion tendency to P2P accommodation in Inner Bangkok and its factors

Analyses from this part onwards examined the influence of P2P accommodation on rental housing in the focused study area by distance from the city center towards inner suburb. The focused study area is LICCA in the Inner Bangkok, where the reference point (kilometer zero) of the city center in this study is Asoke intersection, as it is the interchange between BTS sky train and MRT subway. Thus, the sub-areas has different characteristics ranging from the city center, adjacent to the city-center, transitional, and inner suburb, as the distance move far away from the city center. In addition, only major property types of apartments and condominiums were analyzed. I used A-R ratio as an indicator of the conversion tendency, and used return on investment (ROI) analysis to explain factors behind the conversion tendency. A-R ratio is the ratio of volume of P2P accommodation against the volume of rental housing that circulate in the market. There are five levels of the ratio: extremely high ($A-R \text{ Ratio} \geq 5$), very high ($3 \leq A-R \text{ Ratio} < 5$), high ($2 \leq A-R \text{ Ratio} < 3$), slightly high ($1 \leq A-R \text{ Ratio} < 2$), and low is ratio less than 1.

(1) Overall conversion tendency

Overall, the A-R ratio of apartment is slightly high at 1.90 compared to condominiums that has a low A-R ratio at 0.36, suggesting that apartments got higher conversion tendency to P2P accommodation than condominiums. Return on investment analysis shows that Airbnb apartments earned higher ROI. The average ROI for rental apartments is 14.2%, while that of Airbnb is 20.5%, representing 1.4 times the profitability of rental apartments. In contrast, for condominiums, the average ROI for rental homes and Airbnb is competing by 13.6% and 12.5%, respectively. Hence, this difference in profitability is what makes apartments more likely to convert to Airbnb than condominiums. Another factor is management capability of property owners. Apartment owners (in Thailand context) is a business entity that owned the entire apartments building for rent, while condominium owners are individual private owners. So, the management of apartments gave advantage to owner for ease of convert to Airbnb. Another disadvantage points of condominiums are local rules. In many cases, local rules in

condominiums prohibit conversion to Airbnb. In Thailand, condominiums are operated by the Juristic Person (CJP), and they have power to amend certain rules with agreement by its committee and those rules cannot contradict the Thai law. The CJP of many of condominiums in inner Bangkok forbid the co-tenants from placing their properties as P2P accommodation.

Because the supply of Airbnb condominiums is not small (approx. 2,000 listings in two districts in inner Bangkok), so considering the conversion tendency from rental condominiums to Airbnb should be considered along with apartments even though the A-R ratio is low (less than 1) compared to apartments.

(2) Conversion tendency by locations

The conversion tendency from rental housing to Airbnb is higher in the city center and surroundings than the area towards inner suburbs. The city center is rich with activities such as sight-seeing, entertaining, and shopping. For both apartments and condominiums, the A-R ratio is highest in the city center and the ratio gradually decreases as one moves toward the suburbs, associating with the gradual decrease of ROI of Airbnb. For apartments, the A-R ratio is high (2.93) in the city center and then declined to 2.10, 1.78, and reached 1.23 in the inner suburbs. ROI of Airbnb apartments are higher than rentals in all area and found high price elasticity of Airbnb in the city center and surrounding area. For condominiums, the A-R ratio in the city center is relatively low at 0.62, and then constantly declined to 0.38, 0.30, and 0.24 towards inner suburb area, whereas rental condominiums has higher ROI compared to Airbnb in the city center, while both of them are in a close competition in the further area.

When examined the competition of Airbnb and rental housing by the distance zones from the nearest stations, there is no uniform relationship between proximity to mass transit stations and conversion to Airbnb. The hypothesis of this analysis based on the fact that tourists prefer to stay closer to the mass transit stations due to their time constraints and the unfamiliarity of the land/area. Thus, distance zones closer to the station may have higher conversion tendency (higher A-R ratio) than the distance beyond 750 meters radius from the stations. However, this research found that the distance from mass transit stations do not necessarily make a clear distinction between rental housing and Airbnb locations because of diverse and unique conditions of each sub-areas such as local land use, traffic conditions, road networks, as well as the volume of the rental housing and Airbnb properties.

8. Intensity of the impact of P2P accommodation on the rental housing market by rent segments

The purpose of this part is to determine which income bracket within the rental housing market segments are more affected by the P2P accommodation. The segments (from C- to A+) classified as presented in the previous section of architectural features of P2P accommodation. In this part, A-R ratio were examined to assess the intensity of the impact on rental housing market segments.

(1) Impact on rent segments by rental properties in all area

The Airbnb coverage on rental housing by market segments in overall study area shows that 38.9% of Airbnb apartments heavily concentrated in A+ (high income housing) and 43.1% of them evenly covered the rental apartments in B to A (lower-middle to lower-high income housing, 12.6%-16.6%), making A-R ratio of apartments in A+ is high at 2.95. Meanwhile, the A-R ratio of grades B to A are higher than A+ from 3.36-4.51, indicating very high impact of P2P accommodation on lower-middle to lower-high income housing. This is

because the volume of rental apartments in B to A segments are much lower than Airbnb, where the A+ has quite a large number of rental units. For condominiums, 89.7% of Airbnb covered rentals from B to A+ indicating that there is no segregation between Airbnb and rental housing from the middle to high income housing because of a high rental housing supply. Thus, A-R ratios are low in most of segments, except for B that has A-R ratio at 1.24, indicating slightly high impact on the lower-middle income housing.

(2) Impact on rent segments of rental apartments

An extremely high impact of Airbnb appeared in B to A in the city center (A-R ratio 6.20–10.33), where there is a certain amount of Airbnb demand from tourists. This indicates that the lower-middle to high income apartments in the city center are highly impacted by the P2P accommodation. Low-income apartments (C and C+) in good location in the city center still has some demand because location compensates for the lower quality of the property (slightly high A-R ratio at 1.49–1.61). Where a high impact (A-R ratio at 2.35–2.67) found in the middle to high-income apartments in transitional area. This transitional area is a tourist bubble that extended from the urban center, where in the area situated some tourist activities and facilities.

(3) Impact on rent segments of rental condominiums

For condominiums, an overall analysis shows low impact (A-R ratio <1), indicating no separation between P2P accommodation and rental housing market because Airbnb covers almost all segments of rental condominiums. However, when consider by locations it found an extremely high impact on rental housing market in C+ and B in the city center (A-R ratio 5.75–9.88) and C+ in the transitional area (A-R ratio 8.78) due to the small supply of active Airbnb listings. The ratio indicates that upper-low and lower-middle income housing in the city center and transitional area are highly impacted by P2P accommodation. In the middle to high income (B+ to A+) in the city center, lower-middle income (B) in the transitional area, and middle income (B and B+) in the inner suburbs have A-R ratio ranging from 0.5–0.8, showing slightly high impact from P2P accommodation because there are a certain demand from tourist because of the property's quality and location benefit.

9. Policy implication

The Bangkok Metropolitan Administration (BMA) should develop a set of comprehensive and time-series housing statistics to measure the impact of P2P accommodation on the rental housing market, particularly on rents. Due to a lack of the relevant statistical data, this study has indirectly shed light on the impact of Airbnb on the rental housing market using indicators such as Airbnb's presence against the number of rental housing households and the A-R ratio. If this statistical data analysis reveals that P2P accommodation is hampering the supply of affordable rental housing, then the introduction of regulatory measures should be considered, as follows:

National government should define P2P accommodation and made it recognize by Thai laws as well as address the night cap allowing short-term rentals. Since the share of households that rent the house in Bangkok is quite large around 35.5%, government should consider a more strict housing policy to prevent the situation where a large portion of rental housing would transform to P2P accommodation from potentially higher profit.

In addition, the regulation should focus in the districts that has high presence of P2P accommodation in the Inner Bangkok. This area has the highest intensity of the impact from P2P accommodation from high demand for both tourism and residential housing demand.

Since the Bangkok Metropolitan Authority (BMA) is responsible in making and amending Land Use Planning of Bangkok, the Zoning Ordinance for P2P accommodation should address in the Inner Bangkok by suggesting the proportion of rental units in the apartment buildings that allow for P2P accommodation to prevent property owners to transform the entire building into P2P accommodation.

From a housing policy perspective, it is important how to ensure affordable housing opportunities for low-to-medium-income people. Low-income and medium-low income housing is not targeted for Airbnb due to the quality of the properties, and there is thus little need to address this policy issue. Many of the high-income apartments converted to Airbnb are serviced apartments, which have little relationship to the housing issue of the general population of Bangkok. There is a sufficient supply of rental housing for high-income condominiums, and the impact of Airbnb is relatively small. The attention of policy-makers should therefore focus on the segments of upper-low to middle income housing in Bangkok's city center and transitional areas from its high impact from P2P accommodation.

In particular, in lower-middle-income housing, the impact of Airbnb is increasing even in the inner suburb (not only the city center and transitional area) for both apartments and condominiums. In these segments of the housing market, continuous monitoring should be conducted to determine whether the supply of affordable rental housing is sufficient and whether it is leading to rent increases and other adverse outcomes; consideration should be given to strengthening the related regulations as necessary.

Keywords: P2P Accommodation, impact on rental housing market, Airbnb, apartments, condominiums