RESIDENTIAL MOBILITY IN BANDUNG RAYA METROPOLITANT: A MICRO-LEVEL TEST OF THE TIEBOUT HYPOTHESIS

1. INTRODUCTION
This paper addresses the following objectives:

a) The application of Tiebout theory in the study of residential mobility;
b) To examine the current state of housing dissatisfaction in Bandung Raya Metropolitant;
c) To examine main reasons of residential mobility and their correlates to socio-economic factors;
d) To examine how potential residential movers search for an alternative dwelling in Bandung Raya Metropolitan;
e) How potential residential movers decide to select new dwelling unit.

The paper organise as follows:
Section two discusses the specific meaning of residential mobility.
Section three examines Tiebout hypotheses in the context of the theories of residential mobility.
Section four describes briefly the data used in the study.
Section five presents the results of the study.
Section six deals the discussions and conclusions of the study.

2. DEFINITION OF RESIDENTIAL MOBILITY
The term of “residential mobility” can be defined as “people changing their usual residential address within the same country,” (Jim Davison, n.d.) city or metropolitan areas, or what is so called “short distance move” (Nicolas Coulombel, 2010: 12). Thus this term is different from long distance residential mobility or what is commonly called migration which is linked to employment or job change. More clearly, Frank Dieleman (2001, p. 253) states as follows: “it is generally supposed that the residential location can be chosen without reference to the location of the job, at least if the commuting distance is not too large”. Thus “residential mobility” is closely related to housing consumption adjustment as the primary motive (Gobillon 2001), such as tenure, home size, and housing type, and all other housing attributes.
3. THEORIES OF RESIDENTIAL MOBILITY: SELECTED REVIEW OF THE LITERATURE

Theories of residential mobility fall into three stages of related decisions making. These include the decision to move or to stay, the decision to search alternative dwelling units, and the decision to choose location of the dwelling unit.

STAGES IN RESIDENTIAL DECISION MAKING PROCESS

1. Understanding The Decision to Move
The decision to move or to stay stem from two general strands of theoretical foundations. The first is theory of place utility as proposed by Wolpert (1965). This theory could be expanded into the theory of housing stress, environmental stress, or housing consumption disequilibrium. This environmental and/or housing stress is among the other triggered by household life cycle (demographic factors) and changes in socio-economic status of the households.

The other is the push-pull theories of migration (Lee, 1966). Based this theory Rossi states that “Reasons for moving are divided into those which pertain to the decision to move out of the former home - “pushes” - and those reasons pertaining to the choice among places to move to - “pulls”
Push factors may include an increase in externalities like pollution or crime, changes in housing affordability, dissatisfaction with the current dwelling or changes in household structure (as a result of a birth, death or divorce for example). Pull factors often include things like access to good quality public services (like accessibilities, schools and health care facilities), employment, leisure and recreational opportunities or the fulfilment of housing aspirations (Sanchez & Dawkins 2001). Once the initial decision to move house is made, it is followed by a series of interconnected decisions about tenure, house and neighbourhood type and location. For example, when people buy or rent a home they gain a whole package of goods: features of the house itself, accessibility to work and shopping, opportunities to expand informal employment opportunities, social networks and community characteristics, local services and amenities like schools and parks, neighbourhood layout and features of the natural environment. In addition, there are also a range of housing types, quality and status available to consumers.

2. Understanding ‘Housing Search’
A large number of housing search literature in western countries show that the search efforts consist of a large number of components, among the other include the goals of housing search, the information channels of housing search, and the costs and duration of housing search, the number of alternative dwelling units evaluated, and the decision to stop searching which may be defined the result of housing search. It is important to note that the result of housing search in BRM can be said as the collected decision since most potential movers were rarely use media the main sources of housing vacancies against by the words of mouth. Thus the information channels could have a large influence on potential movers’ decision to select the alternative and to avoid the additional costs and duration of housing search.

3. Understanding Location Choice
This section provides a critical reflection on two major economic theories of housing location choice discussed in the literature – the ‘utility maximisation’ and ‘Tiebout’ theories. Following this several factors known to influence housing location choices are discussed under separate subheadings.

3.1 Utility Maximisation

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1 It is important to note that there are some differences of the perceptions about the quality of local public services (goods) between developed and less developed countries. In Indonesia, for instance, the quality of local public services (goods) is viewed from perspectives to expand (informal) employment opportunities, not quality of school or health care services.
One influential theory of location choice is called the ‘utility maximisation theory’. This is an economic theory which suggests that people will seek to minimise commuting costs by selecting a housing location which provides greater accessibility to their workplace, alternatively they may accept increased commuting costs in exchange for less expensive housing further from employment (Alonso 1964). This theory is also sometimes called the transportation and land cost ‘trade-off’ as it proposes that households literally trade-off commuting and housing costs against each other (Hoang & Wakely 2000; Krizek 2003).

There are, of course, undoubtly that many critiques have been addressed to this rational choice theory be applied in developing countries like Indonesia.

### 3.2. Tiebout Hypothesis

In his famous article "A Pure Theory of Local Expenditures" (Tiebout 1956), which originally aims to provide a non-political solution to the issue of free-riding in public economics, Tiebout proposes another economic mechanism explaining the phenomenon of residential mobility, and which is closely related to income ans socio-economic sorting. As previously, the analysis places the focus on the equilibrium rather than on dynamics, and the model intends to show the role of the provision and financing of public services in residential choices.

In the original version of the model, the metropolitan area is divided into various jurisdictions offering different levels of public services at a variety of prices (tax rates). Individuals may settle in any community, with the additional assumptions of perfect mobility (i.e. no moving cost) and perfect information. The crux of the model is that individuals have heterogeneous tastes for public services. As a consequence, they look for communities that are in accordance with their tastes. Furthermore, the ability to pay for public services also varies across individuals as a result of income heterogeneity. The main finding of the model is that because residents can “vote with their feet”, jurisdictions and residents will determine an equilibrium provision of local public goods in accord with residents’ tastes, hence sorting population into optimum communities.

In direct line with the Tiebout hypothesis, the issue of local taxation is paramount in understanding household location choices, as suggest Nechyba and Walsh (2004). They argue that “homogeneous suburban communities allow high-income households to escape redistributive central city taxation while improving the quality of public goods” (Brueckner and Rosenthal 2006).

To conclude, let us note that the Tiebout model is most accurate in suburban areas with several independent communities. The cost of moving between communities tends to be lowest in these areas, and the set of possible choices is very diverse.
According to this theory the main factor influencing household location choice is quality and cost of municipal services (Friedman 1981; Reshovsky 1979). The central idea here is that housing consumers ‘vote with their feet’ by weighing up the value of local services against local taxes and then they make residential decisions that best reveal their preferences for those services (Friedman 1981; John, Dowding & Biggs 1995). Services thought to be evaluated by households when choosing a residential location include things like public libraries, health services, education, refuse collection and street cleaning, leisure services (including parks and sports facilities), social services and law enforcement (Dowding & John 2002).

This theory has been subject to many of the same criticisms as the trade-off model. Namely, that housing consumers have full mobility and full knowledge in their housing decisions (John, Dowding & Biggs 1995). For some this theory provides some explanation of the movement of more affluent households to suburban areas witnessed in US cities, often referred to as the “flight from blight” effect, where those who can afford it escape from the fiscal and social problems of the city (Bayoh, Irwin & Haab 2006; John, Dowding & Biggs 1995).

Of all public services there is ample evidence that perceptions of school quality wield the greatest influence over residential location decisions (Bayoh, Irwin & Haab 2006; Jae Hong Kim, Pagliara & Preston 2005; Morrow-Jones, Irwin & Roe 2004; Vogt & Marans 2004). As one would expect, the influence of this factor is particularly pronounced in households with children of school age (Tae-Kyung Kim, Horner & Marans 2005). However, Myers and Gearin (2001) argue that while school quality continues to be important in housing location choices its influence is declining as the proportion of households with children decreases.

A reading of the literature suggests that household location decisions are not only influenced by access to work and local services. A range of other factors come into play when households choose where to live. These are briefly discussed below.

3.3 Racial and Socioeconomic Factors

The type of people living in the community can play a key role in people’s housing choices. Many past studies in housing research have shown that social stratification and homogeneity is important to residential location choices (Sirgy, Grzeskowiak & Su 2005). South and Crowder (1997) find that “suburbanization is in part driven by a desire for segregation in which higher-class households will relocate to separate themselves from lower-class households” (South and Crowder in Bayoh, Irwin & Haab 2006, p. 102) and Lindstrom (1997) emphasizes the importance of shared values and ‘cultural worlds’ in housing location choices. Recent empirical work continues to point to the influence of these factors. Gou & Bhat (2006), for example, show that in the US “households tend to locate in an
area with a high proportion of other households with a similar household structure and household
size as their own” (Guo & Bhat 2006, p. 12). In addition, a number of studies have found that racial
and ethnic factors influence residential location such as that by Toussaint-Comeau and Rhine (2004)
who highlight the tendency for Hispanic immigrants in the US to locate themselves in ‘ethnic
enclaves’.

3.4 Housing Affordability
As most households make housing choices within budgetary constraints, housing cost is a significant
factor in household location choices. A major Australian study found housing affordability to be an
important determinant of household residential location which, combined with a desire to achieve
home ownership, is one of the reasons that households have moved to the urban fringe (Burgess &
Skeltys 1992). This is especially true for young first homebuyers. As mentioned previously, access to
work is one of the most prominent compromises reported by these households and the available
evidence suggests that, more often than not, these households increase their travel after they move
(Burgess & Skeltys 1992).

4. DATA
Two main sources of data will be used in this paper. Firstly, the Kor data of the 2014 Susenas. I
define here Bandung Raya Metropolitan to include regency of Bandung, Sumedang and Bandung
Barat, and the city of Bandung and Kota Cimahi. Table 1 shows the distribution of sample size by
districts of Bandung Raya Metropolitan (BRM). I found it the Susenas data conveniently show some
indications of the current state of housing dissatisfaction or housing stress in this metropolitan.
The second source is the 372 samples of household survey were conducted in 1996 in the Bandung
Raya, especially in sub-district of Antapani (as the residential location close to the central business
district or CBD) and sub-district of Rancaekek (as the suburban residential location. The residential
locations are divided into two categories of socio economic status, which called them as low and high
status residential areas. Based on the survey data, I could get not only some supports to the establish
theories/ hypotheses regarding residential mobility but also the differences of housing market
character between Indonesia and western countries (where the place of birth of theories of residential
mobility), including Australia.

5. RESULTS
1. The State of Housing Stress in BMR
The household module of National Socio-economic Survey in Indonesia has many advantages because the designed questionnaire is to provide the data yearly to evaluate all the indicators of Sustainable Development Goas (SDGs), including the state of housing conditions. In this paper, I simply use the size of floor area as the indicator of housing stress / satisfaction. It appears that this variable is highly correlated to the other housing characteristics such as main materials of roof, wall, and floor, condition of clean water, sanitation, etc. The size of floor area is divided into into four category as follows: Equal or less than 30 sq. Meter, 31 thru 50 sq. Meter, 51 thru 80 sq. Meter, and Greater than 80 sq Meter (see Table 2).

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal or less than 30 m2</td>
<td>1447</td>
<td>12,0</td>
</tr>
<tr>
<td>31 thru 50 m2</td>
<td>3406</td>
<td>28,1</td>
</tr>
<tr>
<td>51 thru 80 m2</td>
<td>3538</td>
<td>29,2</td>
</tr>
<tr>
<td>Greater than 80 m2</td>
<td>3717</td>
<td>30,7</td>
</tr>
<tr>
<td>Total</td>
<td>12108</td>
<td>100,0</td>
</tr>
</tbody>
</table>

b. The Measurement of Housing Stress/ Satisfaction.

Table 3 shows significantly that about 7 per cent of large family and 10 per cent of medium size family are suffering from housing stress due to very small floor size of their dwelling unit. But a quite big enough of the large family size is able to live better housing with floor size greater than 80 sq.meter. compared to only 31 percent of small family. Thus there is a positive relationship between family size and housing condition in urban areas of BRM.

<table>
<thead>
<tr>
<th></th>
<th>Less than 4 persons</th>
<th>4 thru 5 persons</th>
<th>6 persons and above</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal or less than 30 m2</td>
<td>16%</td>
<td>10%</td>
<td>7%</td>
<td>11%</td>
</tr>
<tr>
<td>31 thru 50 m2</td>
<td>26%</td>
<td>26%</td>
<td>23%</td>
<td>25%</td>
</tr>
<tr>
<td>51 thru 80 m2</td>
<td>28%</td>
<td>32%</td>
<td>28%</td>
<td>30%</td>
</tr>
<tr>
<td>Greater than 80 m2</td>
<td>31%</td>
<td>32%</td>
<td>42%</td>
<td>34%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>121,163(a)</td>
<td>6</td>
<td>.000</td>
</tr>
</tbody>
</table>

0 cells (.0%) have expected count less than 5. The minimum expected count is 177.06.

CORRELATES OF REASONS FOR MOVING

It has been generally argued that residential mobility is the outcome of stress between household and its environment. But before we discuss the nature of complaints with respect to the housing and its environment, it is necessary to distinguish voluntary and involuntary of residential movement (Clark and Onaka, 1983; Coupe and Morgan, 1981). The concept of ‘stress’ or ‘dissatisfaction’ is incapable to explain the case of involuntary or force residential movement, such as movement due to eviction (Clark and Onaka, 1983; Coupe and Morgan, 1981). One of the most striking reason for intra-urban residential mobility is the desire to occupy own house. The two other important determinants of intra-urban residential mobility include the desire to move away from parents’ house and the desire to be nearer to work place. From open-ended question, it can be seen that households involved in intra-urban residential mobility for miscellaneous reasons for moving. Three of the most important reasons includes the desire to stay in new environment, due to marriage, and opportunity to own house. However, it is important to note that not all the movement is intentional (voluntary). For example, twelve of the respondents said that they were moving due to eviction, and three said that they moved since the houses were provided by employers at location of the study.

One of the most important questions that should be examine to get better understanding about households’ reasons for moving within the metropolitan boundary is the way in which household characteristics discussed in the previous section affect households’ reasons for moving.

Table 4. Distribution of surveyed Household by Reasons For Moving

<table>
<thead>
<tr>
<th>Reasons for moving</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire to occupy own house</td>
<td>288</td>
<td>77.8</td>
</tr>
<tr>
<td>Desire move out from parents house</td>
<td>72</td>
<td>20.1</td>
</tr>
<tr>
<td>Desire to live nearer to workplace</td>
<td>60</td>
<td>16.2</td>
</tr>
<tr>
<td>Desire to stay at higher status neighbourhood</td>
<td>13</td>
<td>3.5</td>
</tr>
<tr>
<td>Desire to stay closer to social facilities</td>
<td>32</td>
<td>8.6</td>
</tr>
</tbody>
</table>
Correlates of Desire To be Owner-Occupancy

That about 77.8 per cent (288 cases) of the surveyed households mentioned that they were moving for the reason of the desire to be owner-occupancy. The dominance of owner-occupation in determining intra-urban residential mobility gives rise some questions. Who are these owner-occupiers? What are the major factors affecting households’ motivation to occupy owned-house?

The characteristics of owner-occupied households reflects the roles of accessibility to the home-ownership sector. I shall portray the profile of households those who were moving motivated by desire to be owner-occupied households from perspective of life-cycle changes and socio-economic analysis.

It is likely that most people desire to be home-owners. As the matter of the fact such a motivation declines with age of household head. This viewpoint is supported by the data presented in Table 4.5.2. It can be seen that there is a tendency that younger couples to have higher desire to be owner-occupancy than older couples. For example, 83.2 per cent of households with age of the heads under 30 years old were moving motivated by home-ownership aspiration compared with 65.8 per cent for the households with age of household head 50 years or more. This negative relationship reflects the importance of households’ purchasing power in home-ownership and opportunities to get housing loan. This means that households must accumulate their monthly income to increase their purchasing power since housing is an very expensive for household income. Differences in household monthly income as well as consumption behaviour result in differences in attaining owner-occupancy as shown in table below. It can be seen that the reason to be owner-occupancy for moving households at age of the household head 30 to 39 years do not differ markedly from those younger households. Lower household income and Lack housing opportunities may result in delaying owner-occupied dwelling. It is likely that a large number of households in BMR fall into this category as indicated by the fact that the a large share of households with age of household head 40 and over moved due to be owner-occupancy. It is however important to note that the above analysis is not necessarily intended to argue that there is a strong positive relationship between owner-occupancy aspiration and households’ monthly income. Instead, household (monthly) income affect residential mobility and motivation to be owner-occupancy through intervening variables, that is, stages in life cycle in the present analysis.
Distribution of households who moved motivated by owner-occupancy aspiration by age of household head (%)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Yes</th>
<th>No</th>
<th>Total (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30</td>
<td>83.2</td>
<td>16.8</td>
<td>100.0 (95)</td>
</tr>
<tr>
<td>30 - 39</td>
<td>82.0</td>
<td>18.0</td>
<td>100.0 (161)</td>
</tr>
<tr>
<td>40-49</td>
<td>70.3</td>
<td>29.7</td>
<td>100.0 (74)</td>
</tr>
<tr>
<td>50 or More</td>
<td>65.8</td>
<td>34.2</td>
<td>100.0 (38)</td>
</tr>
<tr>
<td>All groups</td>
<td>78.3</td>
<td>21.7</td>
<td>100.0 (368)</td>
</tr>
</tbody>
</table>

Source: Fieldwork.

The above analysis indicates that tenure change (that is the change toward owner-occupancy from other types of tenure) is likely the most straightforward explanation for residential mobility due to owner-occupancy aspiration. Table 4.5.3 presents distribution of households who moved for the reason of owner-occupancy by their previous tenure status. It can be seen that tenure change explains almost 90 per cent of the movers who said desire to be owner-occupancy as the main motivation for moving, and the rest households had actually occupied their own-house before moving. The later category of households accounts for 46 per cent of the previously owner-occupied dwellings. The former category consists of previously renter-occupied dwellings (48.6 per cent), stay with others (mostly parents or parent-inflow and to lesser extent uncles and brothers or sisters)(36.2 per cent), occupied official-houses (1.4 per cent), and occupied squatter-dwellings (1.4 per cent). As expected, most previous non owner-occupied households seem to have desire to occupy own house.

### 4.4.2. Correlates of Desire To Separate From Parents

In Indonesia, it is common for the young married couple to keep living together with their parents in the parent’s house, mostly parents of the husband, with exception in West Sumatra where the new couple usually stay with the parents of wife even for a long time. Some new couples stay with parents for a very long time some are in very short time depending various factors, such as household income, size of the family, housing density, financial support, etc. Some new couples will move out of parent’s house as soon as they can afford to buy own house or move to renter-occupancy if they cannot afford to buy a house. The shortest time of duration of stay with parents is one year or less, and in the present study 13.7 per cent of the surveyed households who stayed with parents fall into this category. Others keep staying with parents for a longer period of time because lack of
purchasing power or other reasons. The longest time of duration of stay with parent is 44 years, and there are five households stayed with parents for 40 years or more.

In general, duration of stay in the parents’ house varies widely because several factors. In the present study, the mean of duration of stay with parent is quite long, 15.1 years compared with 9.6 years the whole surveyed households. Table 4x shows the distribution of households by duration of stay with parents. It can be seen that 13.8 per cent of the households had stayed with parents for 30 years or more, and 28.8 per cent stayed with parents for less than 5 years.

The most of the households who stayed with parents in the previous residence works in the formal sector, and predominantly dominated by private sector employees (42.1 per cent) and state employees (38.6 per cent). About 50 per cent of the surveyed households stayed with parent in the previous residence. This is quite high if compared to private sector employees, namely 41.7 per cent.

Current tenure status of those households who said that their main motivation of moving is to separate from parents is predominantly owner-occupancy (87.3 per cent) which is even greater than owner-occupancy for the whole sample households. The other households are renter-occupancy. There are several possible explanation the dominant of owner-occupancy. The first is the availability of housing loan. Next, the availability of opportunities (due to housing supply) to have own house which has been waited. The third is related to psychological factors, i.e. dignity and self-esteem.

Concerning the occupation of household heads, households headed by white collar workers gives the largest portion of the desire to separate from parents as the reason for moving, that is about 59.3 per cent and households headed by blue collar workers bestows the smallest portion (17.8 per cent). However, households headed by blue collar workers are the most likely to say the desire to separate from parents as the main reason for moving, namely 31.7 per cent of the whole households headed by blue collar workers. While households headed by white collar workers are the least likely to mention the desire to separate from parents as the main reason for moving.

The age of the heads of those households moved due to the motivation to separate from parents is generally less than 50 years, and 50.7 per cent falls into 30-39 aged group, and 35.5 per cent less than 30 years old. The youngest group of household is the most likely moving for the reason of to leave out their parents (27.7 per cent). The least likely to have the above reason for moving is the oldest age group households (13.9 per cent). Thus, the number of households moved due to the desire separate from parents decline with increasing age of the household heads.

It is logical that the family size increases with increasing duration of marriage in which age of the household heads is treated as the proxy of this variable. Thus, small size family is the most
likely driven to move by the desire to separate from parents. Conversely, large size family is the least likely moving due to the desire to separate from parents. Majority of respondents which fall into this group is denote as small and medium size family.

4.4.3. Desire to Live Nearer to Work Location

Neoclassical location theory suggests that the main motivation of households to live nearer to work place is minimise transport costs of commuting to work. These transport costs usually trade off with housing costs. From perspective residential stress model, a long distance of travel to work results in residential stress or dissatisfaction. Moving residence nearer to owkr place is therefore aimed at alleviate this type dissatisfaction. It is found that only 16.2 per cent of the surveyed households said that they were moving due to desire to live nearer to work location and this is the third importance reason for moving after desire to be owner-occupancy and desire to move out of parents’ house.

Below I will discuss the characteristics of households which mentioned that they left previous residence for present residence is due to the desire to live nearer to the work location. Particularly, I will address to the two main questions as follows: What are demographic and socio-economic characteristics of households who involved in intra-urban residential mobility for the reason of the desire to live closer to the location of work? What are the main factors to affecting intra-urban residential mobility for the reason of the desire to live closer to work location?

The demographic characteristics will be discussed in terms of the age of household heads and family size. Table 4.1 shows that intra-urban residential mobility due to the desire of transport cost minimisation is mainly disproportionately concentrated on the youngest age group of household heads (less than 30 years of age), namely 20.0 per cent of households in this group of the age of household head compared wit 16.2 per cent the whole groups of age. The next concentration is on age group of 40-49 years, namely 18.7 per cent. For the older households, the location of work becomes less importance reason for moving. This is reasonable since the majority of people over 50 years old tend to be off the jobs. To sum up, there is a tendency of the younger households motivated to move closer to work place, but the relationship is not linear. This implies the roles of other factors affecting household’s decision to move their residences nearer to work place.

The age of household heads may have some relationship with size of the family. In the sense that family size may increase with the age of household head as a proxy of duration of the marriage. Table 4.5.7 indicates that motivation to live nearer to work place is disproportionately concentrated on the small family size. The work location becomes less importance for the larger size of the family.
Education is also supposed to affect household mobility decision due to the desire to live nearer to work location since education may relate not only to knowledge and information possessions but also to household income, type of occupation and the status of employment. Table 4.3 indicates that households whose who moved due to desire to live closer to work location are concentrated on the household headed by better educated persons who had completed diploma one or higher educational level. Conversely, the households headed by less educated persons appear to be less likely moved for the reason of desire to live closer to work location.

Based on the type of occupation, residential mobility due to the desire to live closer to work location is highly concentrated on households headed by administrative and managerial workers (30.0 percent), and then followed by blue collar workers (21.4 per cent) and professional and technical workers (18.7 per cent). Households headed by services workers are the less likely moving residence due to the desire to live closer to work location.

By the status of employment, in general households headed by formal sector workers are more likely to have intra-urban residential mobility due to transport cost minimisation motive than those household headed by informal sector workers. By disaggregation of employment status, intra-urban residential mobility due to the transport cost minimisation motive is disproportionately concentrated on the households which the heads employ as the public servants (PNS), namely 22.2 per cent of the whole PNS compared with 17.0 per cent for the whole employment status and 7.7 per cent for the households headed by informal sector workers.

With respect to household income, intra-urban residential mobility due to transport cost minimisation motive is highly concentrated on upper-middle income groups, that is households with monthly income between Rp 500,000 to Rp 699,000 (25.7 per cent) and between Rp 700,000 to Rp 899,000 (22.9 per cent). The lower income groups show smaller percentage of household moves due to the desire to minimise transport costs of commuting to work.

In regard to the status of previous tenure, the intra-urban residential mobility due to the desire to live nearer to work place is highly concentrated on the households that occupy official houses (41.7 per cent). Though it should be born in mind that the number of households falls into this category is very few (12 cases). None of the squatter-occupancy households moved due to the desire to live closer to work place. The mobility due to transport cost motive is slightly concentrated on the owner-occupancy households and renter-occupancy households, that is 18.8 per cent and 16.5 per cent respectively. Conversely, households that were previously stay with others are less likely moving for the desire to minimise transport costs of travel to work.

5.3 Goals of Housing Search
5.3.1 Location criteria for searching a new residence

When asked about the type of location preferred to move when they had decided to move and search an alternative dwelling unit, some respondents of the present study had stated different aspirations or needs regarding the location criterion of a dwelling unit that they wanted to search. For simplicity, the respondents’ aspiration regarding the criteria of location of a dwelling unit might be classified into the following categories: (a) near to central city, (b) easy access to public transport, (c) near to workplace, (d) edge city environment, (e) residential complex, (f) access to utilities and public facilities. Amongst these categories, the easy access to public transport appears to be the most important criteria of the expected location of an alternative residence. As shown in Table 5.xxx, about 21.3 per cent (78 cases) of the sample households favour access to public transport as the most criterion for an alternative location of a dwelling unit. The second next important criterion of the housing search goal is to search the residential location which lies on the near to the city centre (20.2%). Residential Complex and easy access to utilities and public facilities are the least important criteria of the location of a new dwelling unit for residential search, in which only 7.4 per cent of the respondents used these criteria respectively. Residential Complex or what is called “Complex Perumahan” may define as a new-built residential area or Kampong [frequently consists of several neighbourhoods or Rukun Tetengga (RTs) and Rukun Warga (RWs).

Several household factors affecting the differences of the aspirations concerning the expected location of a new residence include life cycle factors, social economic bonds, and background factors, housing (tenure) structures.

Household income is supposed to be one of the most influencing factors on location decision since location is the major determinant of the housing prices. The data presented in the Table 5.3.1 provides several interesting patterns the extend to which households at different level of income-group aspired different location criteria. Firstly, upper medium-income and high-income households seemed to be highly disproportionate concentration on the aspiration of housing location nearer to central city. It has been argued that housing costs increased with declining distance from central city. This implies that higher income households who have stronger purchasing power consider that access to central city is very important in their daily activities, such as access to major shopping centres, good quality of schools, workplace, etc. Therefore, it is rationale for them to trade off travel costs with housing costs. To maintain their satisfaction with housing and land space, the higher-income households (particularly high- and upper-medium-income households) are still able to compensate extra costs of housing. Conversely, the lower income households are less likely able to afford the extra costs without sacrificing housing and land space, unless they got some financial support.
Secondly, the low-income households appeared to be highly concentrated on the aspiration to live in dwelling unit located within a residential complex, regardless the location. Indeed, this aspiration declined with increasing income of the households. This implies that the consideration of housing location is less important for lower income-group than those higher income groups. For lower income group households, having access to the housing whatever the location and quality is meant a significant social mobility, especially for those first-time homebuyers.

Thirdly, the aspiration to live in the dwelling units with edge city environment also tends to increase with household-income and reach a peak at upper-middle-income households before it slightly declined at high-income households. The tendency of higher income-households to move outward has some theoretical supports such as invasion and succession hypothesis, sector theory, etc.

Other location criteria have obscure relationships with households’ income, or at least not as strong as the two above criteria. With respect to the aspiration of housing location with (easy) access to public transport tends to be dominated, it accounted for only 13.3 per cent to low income-households compared 25.2 per cent to middle income groups (Rps. 500,000 or more) and 22.1 per cent to higher income-households. Similarly, the aspiration to have new dwelling units with clean water supply is also predominantly higher-income groups, particularly middle-income and upper-middle-income households. The other example is that the aspiration to live nearer to workplace is dominated by three income-groups, in order as follows: i.e. middle income-households, high-income households, and low-income households.

6.3 REASONS FOR SELECTING CURRENT RESIDENCES/HOMES

Having examined who made the decision to select new dwelling units, this section is concerned with the reasons for choosing the new dwelling units. In this study, it is assumed that intra-urban residential mobility was undertaken under condition of single labour market area, which is defined as the geographical areas within feasible commuting range (Hoover, 1971:193). This study assumes that BMR has a single labour market, in which changing residential place is not necessarily joined by changing work-location. Based this assumption, H E.M. Hoover (1971) argued that the choice of residential location for an individual household is largely a matter of residential preference, and the choice of new residential location mainly depends on how much an individual household is willing to pay for the new dwelling unit. According to Hoover, how much people willing to pay for dwelling unit are determined by three major factors: access, measured primarily in terms of travel time, and quality of the site and neighbourhood. For the case of developing countries, based on the fieldwork in BMR in Indonesia, the present study, however, has identified more variety reasons for
choosing an alternative dwelling unit. Based on the responses of the respondents, these can be divided into two major groups, i.e. rationale choice (clearly defined preferences) and less or irrational choice (less clearly defined preferences). The clearly define preferences, as we shall discuss below, include: (a) price or rent of dwelling unit; (b) accessibility reasons, mainly access to public transport, central city, and access to workplace; (c) economic motive and business expansion; (d) the desire to live in the edge city environment or location; (e) the availability of adequate utilities and facilities; and socio-cultural attachment to the neighbourhood.

*Price or rent.* The price or rent of housing is expensive for many households, and therefore it will affect the decision making of households in choosing a new dwelling unit. The price and rent of housing depend on many factors, such as housing space, location, access to car transportation and public transport, the availability of utilities, electricity, telephone, quality of the construction, neighbourhood, etc.

This study found that housing cost emerges as an important determinant of choosing a new dwelling unit. About 22.3 per cent (83 cases) of the respondent reported that they picked the dwelling units due to their ability to pay and willing to pay. It was also stated they were willing to pay because the price or rent of the dwelling units was cheaper and can be afforded. This gives an indication the importance of both the availability of low cost housing and household purchasing power (income) as the reasons for selecting new dwelling units.

Looking at the distribution of respondents who favoured ‘price’ or ‘rent’ in selecting the dwelling units by the quality of neighbourhood, in central city residential location, there are more respondents both renters and owners to choose lower quality neighbourhood; conversely in the edge city residential areas more respondents were choosing better quality neighbourhood (see Table 6.3.2). This provides an indication of the higher housing price or rent in the central city residential location.

By levels of household income, the most interesting feature is that there are more middle and upper middle income groups who favoured price or rent as the reason for selecting dwelling unit compared to the lowest income group. Both renters and owners show similar pattern (see Table 6.3.2).

From the side of the employment status, the households headed by informal sector workers is more likely to consider housing price or rent in choosing a new dwelling unit than those households headed by formal sector workers. This pattern is similar for both tenure (as indicated by Table 6.3.2).
Table 6.3.2
Price or rent as the reason for selecting dwelling units by selected household characteristics

<table>
<thead>
<tr>
<th>Neighbourhood Status</th>
<th>Renter</th>
<th>Owner</th>
<th>Owner-Gift</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a. Central City</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Higher Status</td>
<td>15.7</td>
<td>14.7</td>
<td>100.0</td>
</tr>
<tr>
<td>- Lower Status</td>
<td>28.6</td>
<td>18.5</td>
<td>0</td>
</tr>
<tr>
<td><strong>b. Edge City</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Higher Status</td>
<td>60.0</td>
<td>21.4</td>
<td>0</td>
</tr>
<tr>
<td>- Middle Status</td>
<td>15.4</td>
<td>31.5</td>
<td>100.0</td>
</tr>
<tr>
<td>- Lower Status</td>
<td>8.3</td>
<td>32.7</td>
<td>0</td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Low</td>
<td>12.5</td>
<td>21.5</td>
<td>50.0</td>
</tr>
<tr>
<td>- Medium</td>
<td>31.3</td>
<td>25.5</td>
<td>0</td>
</tr>
<tr>
<td>- Upper Medium</td>
<td>20.0</td>
<td>25.6</td>
<td>0</td>
</tr>
<tr>
<td>- High</td>
<td>16.7</td>
<td>11.8</td>
<td>50.0</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>11</td>
<td>70</td>
<td>2</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Formal</td>
<td>22.0</td>
<td>23.5</td>
<td>100.0</td>
</tr>
<tr>
<td>- Informal</td>
<td>25.0</td>
<td>25.9</td>
<td>100.0</td>
</tr>
<tr>
<td>- Pensioner</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>- Others</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Accessibility. In addition to housing price, other important determinant of the choice of residential location is access preference (Hoover, 1971). According to the theory of location, accessibility is measured in terms of money and time costs of travelling to central city, work location, and other urban amenities. Access to central city is certainly important for most urban/metropolitan households for its multiple functions. Firstly, the central city offers the greatest and wide ranging opportunities of employment. The most important to note is that the high paying jobs, such as formal employment and white-collar occupations are mainly located in the central city. As the result, the demand for outputs produced by informal sector employment is also the greatest in the central city. The second function of central city is its tole as the centre of commercial activities. In the sense that it is the main location of agents, brokers wide-ranging supermarkets and department stores, banks and financial institutions, etc. Thirdly, the role of central city as the centre of public facilities, such as
hospital, schools specialist doctors, lawyers, consultants, etc. Lastly, its role as the centre of recreation activities.

**Access to central city preference**

Overall, about 25.3 per cent of the respondents (94 households) have made their choice on residential location based on the consideration of access preferences. Access is here divided into three categories, namely nearer access to central city, nearer access to workplace, and access to public facilities and utilities. Among these, nearly half of the respondents (49 households) made their choice of residential location due to easy access to central city. Most of these households are homeowners. Easy access to central city does not necessarily mean that the households have to choose residential location near to the central city. For instance, about one-third (or 15 intra-urban migrant households) of those favoured access to central city in fact took edge city residential location. The easy access to central city is maintained by the availability of railway transportation. However, the edge city residents still face several problems to get access to central city, i.e. they must spend additional costs of transportation from home to railway station at origin and from railway station at destination to the target places. The intra-urban migrant households had certainly known about this before deciding to select edge city location. But since the housing price is of course much cheaper with increasing distance from central city and this is the main reason for selecting edge city residential location. Since the urban housing markets in BMR is characterised by excess demand the intended migrants usually didn’t want to loose the opportunity to be homeowners.

In terms of the neighbourhood status, those households who favoured access to central city in making decision to select the location of new dwelling unit show an unequal distribution between the two study locations. In the central city, two-third of respondents moved to higher status neighbourhood, that is 20 households at the higher status compared to 11 households at the lower status neighbourhood. In the edge city location, the distribution of households is almost equal among the neighbourhood status, that is 5, 6, and 7 households at the high, medium and lowers status neighbourhoods respectively.

The differences in the patterns and trends of the distribution of those households favoured access to central city among the residential locations and the status of neighbourhoods are determined by socio-economic as well as demographic background of the households. The first factor is household income. The distribution of households who favoured central city preferences is
predominantly middle-income group (about 48 %), and then followed by high-income group (27 %) and low-income group 25 %). Controlling for current residential location, as expected, the high income households is the most likely to select residential location in the central city than any other groups of household. This is proved by the fact that of the 14 cases of high income households who favoured access to central city preference, only one who chosen to live in the edge city location. Similarly, There is a tendency of middle income households to choose central city location. For example, of 23 cases of the middle income households who favoured the access to central city preference, 14 or (61 %) picked up central city residential location. Conversely, a majority (two-third) of low income households those who favoured the access to central city preference in reality tend to choose edge city residential location. To sum up, not all households who favoured the access to central city preference appeared to be less likely deciding to picked up central city residential location due to the expensive price of housing.

With respect to neighbourhood status, 12 out of 13 household in central city in fact have chosen high status neighbourhood, and one in Edge City has chosen middle status neighbourhood. Meanwhile, middle income households in central city appeared to be indifference with respect to neighbourhood status, in the sense that they equally distributed between low-status and high-status neighbourhoods. In the Edge City, they tended to choose higher status neighbourhood; they orderly distributed 2, 3 and 4 for low, middle and high status of neighbourhood respectively. Finally, the low-income households are the most likely pooled in the low-status neighbourhood. But some exception is however found that, one out of 4 cases of low income households in fact has chosen to live in high status neighbourhood in the central city. Similar phenomenon is also found in the Edge City, they unevenly distributed by neighbourhood status, one in the high status and 2 in the middle status neighbourhood.

The second factor which may also affect residential location decision in relation to the access to central city preference is employment status of the household heads. However, it is important to note that the majority of households those who favoured the access to central city preference appeared to be headed by formal sector workers, namely 40 out of 49 cases. The rest of households include 6 cases with heads worked in the informal sector, 2 pensioners, one student.
Occupation of the household head is the third factor is supposed to have some influence on the choice of residential location. The occupation of the heads of households those who favoured the access to central city preference is predominantly white collar job (33 cases). Then in orderly followed by 8, 5 and 3 for sale and service, blue collar, and other respectively.

Educational level of the household head may also affect the location decision. In general, the access to central city preference is mainly characterised by better educated people, that is 26 completed college or university degree, 13 completed senior high school, and only 9 completed junior high school or lower.

**Tenure status**

Household preferences on residential location may also affected by tenure status, specifically renting or owning; while in other types of tenure status, households may not have a choice. Owner-occupancy households are more likely preferred to live nearer to the city centre than renter-occupancy households. With respect to rented-occupancy, the chief motivation of households to rent a house is only for consumption purpose and for temporary occupation. This implies that no future return or financial benefit is expected from spending money for renting a house when the household will have leaving the house. Since all the benefits of renting have been consumed while they still occupied the rented house. Therefore, the residential location decision is made in relation to the benefits which can be attained during the occupation of the rented house. In other words, the residential location decision of the renter-occupancy households is emphasised on the short-term benefits of consumption.

Conversely, the motivation of any household to be owner-occupancy in particular or to buy a house in general is not for the purpose of consumption per se but also for investment and for speculation. The benefits of owner-occupancy from buying a house vary. These benefits can be divided into three major categories: (i) tenure security or long-terms consumption, (ii) capital gains, and (iii) social status and dignity. Tenure security is the most obvious benefit of owner-occupancy when we compare to that of renter. Renter-occupancy usually has feeling insecure because the landlord may increase the rent or the contract is not renewable. The capital gain of owner-occupant households is resulted from increasing market price of housing. Even though the households in fact never sell their house, they still get benefits from increasing market value of their housing units. Capital gains of investment in housing are significantly related to the location of the dwelling units.
Most owner-occupant households believe that market value of housing increases faster with decreasing distance from city centre. In addition, owner-occupant households can also get benefits by modifying and rent to part of the house. Housing rent is of course related to the location, and in general the rent increases with decreasing distance from city centre. The social benefits of owner-occupancy originate from the function of housing the symbol social status and the symbol of achievement. The function of housing as the symbol of social status and achievement does not relate not only to the quality and size of the housing unit but most importantly to the location of the housing.

The decision to choose a particular location of dwelling unit also varies by previous tenure status. Previous tenure status can used as a measured of one’s housing experience. The data on Bandung Residential Mobility Survey identify five categories of previously tenure status of the sampled households: owner-occupancy, renter-occupancy, Staywith parents, and official house occupancy, and squatter-occupancy.

About 25.8 per cent of previously owner-occupant households made the decision to select residential location based accessibility reasons. Easy access to central city is the most predominant reason for selecting current location of the dwelling unit.

Previously rented-occupant households are the most likely making decision on residential location based on the reason of access preference, that is 26.3 per cent or about 45 cases. Also, easy access to central city is the major determinant of the residential location choice, and the next important determinant is nearer access to workplace, namely about 24.8 per cent or cases.

For households who previously Staywith others, access preference also play an important determinant of residential location decision, that is about 24.8 per cent or 29 cases. The main reason for access preference is easy access to central city, which accounted for 16 cases (13.7%). But there is also a significant number of households who previously Staywith others that made a choice of residential location based on the reason of nearer to workplace, namely 10 cases (8.3 %).

Two households who previously occupied official houses, and preferred new residential location for the reason of easy access to city centre and nearer to workplace. Moreover, one of
previously squatter-occupant household picked up residential location for the reason of easy access to city centre.

**Household life cycle**

Most scholars would agree that household life cycle is an important determinant of residential mobility. This is because of changes in the family life-cycle such size, of the family, family composition along with increasing age of the household heads result in changes in housing needs as well as housing attributes. As in the previous chapters, two measures of household life cycle are used here including family size and age of the household head.

Based on size of the family, small size households appeared to be the most likely selecting the location of new dwelling units for the reason of ‘access preference’, then followed by medium size and large size households. This indicates an inverse relationship between family size and access preference in choosing the location of a new residence. The percentage of households those who favoured ‘access preference’ in choosing residential location is as follows: 30.7 per cent, 24.7 per cent, and 21.3 per cent for small, medium and large size family respectively. But this is still too general to make further interpretation about the extent to which family size can affect the choice of residential location.

With regard to the types of access preferences, it seems that access to city centre is the most favourite for all groups of households. The most striking is the large size households, in which three-fourth of households those who made the residential selection based access preference in fact favoured access to the city centre preference, and the other one-fourth of the households equally divided into those who made the residential selection based on the reason of access to workplace and access to public facilities and utilities, i.e. two cases respectively.

Similarly, the small size households also have tendency to favoured the access to city centre preference’, namely 51.5 per cent, but a significant number of them have chosen residential location for the reason of access to workplace, namely 37.1 per cent; and the other 11.4 per cent favoured access to public facilities and utilities.

The higher percentage of medium size households has also made the choice based on the reason of access to central city, i.e. 42.2 per cent. And more significant number of medium size
households have made the choice based on the reason of near to workplace (38.1 per cent) and access to public facilities and utilities.

The other household life-cycle factor that is supposed to determine the location decision is age of the household age. The survey of the present study reveals that there is a tendency of younger households to made residential location decision based on consideration of access preferences than those of older households. The highest percentage of households who made decision on residential location is those in the age group of less 30 years of age (33.3 per cent), and those households with age of the heads in the group of 50 years or more appeared to have the lowest percentage in making decision based on “access preference” (15.8 per cent). One of the rationale explanations for this is that younger households have greater needs of commuting to city centre, to work, and public facilities than older households. Pensioners, for example, have the least needs of commuting to work.

In terms of the type of access preferences, like family size indicator, all age groups of households would agree that access to central city is the most important determinant of residential location decision, thought this varies by the age of household heads. For the younger households, access to central city preference is the most important determinant of the residential location decision and then followed by access to workplace.

Near to work place

Commuting to work is one of the most important aspects of household’s daily activities. Commuting to work emerges as a result of separation between home and workplace that are common which tempts to increase with economic development. In small town and cities, commuting to work is not a pressuring issue for urban planners and managers. Conversely, in large city, such as BMR, commuting to work incurs substantial money, time and psychological costs due to increasing distance between home and workplace, congestion and traffic jam.

CONCLUSIONS

Overall conclusion is that this study tend to support new classical location theory that people change residence to minimize transport cost by selecting good accessibility location or closer to workplace. People move the residence to suburb not only to get cheaper house but also to expand informal employment opportunities. People also tend to move similar socio-economic status, to expand social capital due to living close to friends and relatives and ethnicity background. Thus study confirms Tiebout hypothesis regarding fiscal decentralization and socio-economic sorting.
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