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EVALUATION OF MIGRATION DECISION-SELECTIVITY FACTORS IN METROPOLITAN AREA: A CASE OF KLANG VALLEY REGION, MALAYSIA

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Abstract
Internal migration is one of the important spatial phenomena in urban areas that contributes to high level of urban growth and urbanisation. Accordingly, it leads to crucial effects on social, economic and physical developments in urban areas. Hence, understanding of spatial trends and distribution of migration in urban areas is crucial for the purpose of urban planning decision making. This paper focuses to identify and evaluate relative importance of migration decision-selectivity factors that affect the spatial distribution of migration in metropolitan area. The analysis is based on migration behavioural survey in the Klang Valley region, Malaysia. The results of analysis show that factors from spatial-economic aspect influence distribution of migration the most in the Klang Valley. The factor of the highest importance index is affordable housing areas, followed by new residential areas, the acceptable cost of living, nearness to place of work, and good physical and environmental features. Then, it is followed by spatial-social factors such as good social and community living. Finally, this paper concludes that the determinant migration decision-selectivity factors will help urban planners to understand spatial distribution of migration potential in urban areas in order to plan a proper development planning for the future.

Keywords: Importance index, Internal migration, Migration decision-selectivity, Migration behavioural survey, Spatial-economic, Physical-social

1.0 INTRODUCTION

Understanding of spatial trends and distribution of migration in urban areas is a crucial for the purpose of urban planning decision making (Rashid & Ghani 2011). This is because high volume of migration without an adequate planning and support tends to escalate crucial problems of urban such as squatter settlements, slum areas, traffic congestions, urban poor, urban sprawl, etc. Such problems occur in cities of developing countries which experience rapid urban growth as well as at intermediate levels of their demographic transition. Frey (1995), using the spatial distribution analysis of migration in metropolitan to look up the effect of immigration and internal migration in the different metropolitan types in US. Frey found that the both internal migration and immigration in the metropolitan contributed to the gap between the race-ethnicity and socio-economic status. The Klang Valley of Malaysia also experiences the same problems (Yaakup et al. 2000). The problems occurred partly as a result of difficulty to understand migration behaviours in urban areas (De Hass 2010; Rashid 2010; Bakewell 2008; Plane & Rogerson 1994).

This paper attempts to identify factors that affect the spatial distribution of migration in urban areas, and to evaluate its relative importance. This is in line with the 10th Malaysia plan on its 7th principle: concentrated growth and inclusive development. The 7th principle addresses the challenges of nearly 70 percent of Malaysia's population will live in the urban

area in 2020 with development plans focus on the making the urban place is liveable for its people (Malaysia 2010).

1.1 Migration Decision-Selectivity Factor

In general, migration behaviour is affected by two major factors: the "push" and "pull" factors. These two factors are interlinked in affecting migration behaviours. The basic principles of "push" and "pull" factors are recognised in Lee's model (1966). The Lee's model is built on Ravenstein's basic law of migration in 1885; 1889. In the model, Lee argues that migration decision-making process is affected by factors associated with origin and destination, and factors between them, namely, intervening obstacles and personal factors. A place of residence can be both origin and destination. Thus, an individual living there is constantly exposed to factors, some of which inhibit movement (pull factors) and others encourage it (push factors).

Later, Harris and Todaro (1970) extended the migration theory by Lee (1966), by adding up rural-urban labour movement dimension, known as "the two sector model" (De Haas 2010). The two sector model emphasises on the income disparities between the lagging and the leading areas, which finally contributed to the unemployment crisis in the urban area due to massive rural-urban migration (Harris & Todaro 1970). Not only the income disparities, but the migration determinants also is a result of individual and household decision which influenced by socioeconomic environment of local, national and international level (Massey 1990). However, the dynamic migration theories should integrate the causes and consequences of migration (De Haas 2010). Accordingly, De Haas (2010) has developed a new model of migration theory called transitional migration theory, indicated three main points in migration analysis which are (a) migration is a process which in an integral part of broader transformation process embodied in the term "development; but (b) also has its internal, self-sustaining and self-undermining dynamics; and (c) impacts on these broader transformation processes in its own right (De Haas 2010).

In migration behavioural analysis, the two factors can be classified into two categories, that is, migration decision and destination choice. The migration decision is referred to push and constraint factors; meanwhile the destination choice is referred to pull or attractive factors. The factors of migration decision to move and destination choice have relatively the same importance in migration behavioural analysis. However, the different phenomena of migration to be measured or modelled affect the different factors that should be given more attention (Rashid 2010; Cushing & Poot 2004; Massey 1990).

A study of spatial distribution of migration in urban areas should give more attention to the factors of destination choice rather than migration decision. This is because a place of focused of potential migrants in urban areas influenced mainly by the pull factors which offered in destinations of migration. The pull factors can be affordable housing, good infrastructures, jobs and educational opportunities, etc. Nevertheless, the push factors in origin places still play a significant role to motivate people moving out from it especially for the purposes of getting better houses, job satisfaction, educational opportunities as well as to alleviate poverty. Thus, the two factors become a very important element in the migration behavioural analysis. They can be studied either separately (sequentially) or jointly (joint decision) (Cushing & Poot 2004).

This paper attempts to combine the two factors together in one terminology that is migration decision-selectivity factors. This approach can be as the joint decision approach. The migration decision-selectivity factors mainly are related to location attributes (or pulls factors) in destinations of migration. However, few researches have looked into such factors thoroughly such as Ahmad (1986), Peng (1992), Walmsley et al. (1998), Cushing and Poot (2004), and Rostam (2006). Ahmad (1986) has looked into the issues of income disparity between Klang Valley region with other lagging region which caused continuously in-flow migration activity to the Klang valley from the lagging region. Rostam (2006) outlined five determinants of migration to Klang Valley metropolitan periphery areas which are (a) over-crowded population in Klang Valley; (b) expensive housing price and rental; (c) government policy to reduce the high population concentration in the Klang valley area; (d) better provision of road networking that link the periphery area and Klang valley including the highways, commuters and light rapid transport services; and (e) high potential of labour force demand. In addition, Cushing and Poot (2004) argue the importance of spatial and systemic attributes in developing migration framework to capture the better understanding in migration research rather than study issues of space and migrants attributes separately. So, only a broad factor which is related to the locational attributes can be found in the related literatures. On the other hand, factors which are related to personal characteristics of migrants (i.e. age, education, race, ethnicity, family structure, employment status, and poverty status) can be found more in the literatures. The personal characteristics are always affected in migration decision to move, but only small influence on migration distribution or its selectivity.

On the basis of works on the migration theoretical models such as Ravenstein's model (1885; 1889), Harris and Todaro (1970) and Massey (1990) as discussed in (Neto & Mullet 1998), Alonso's model (1973, 1978) (Vries et al. 2000), and others related literature in this field such as in Ahmad (1986), Neto and Mullet (1998), Walmsley et al. (1998), Cushing and Poot (2004), and Rostam (2006), the migration decision-selectivity factors can be classified into two general categories: spatial-economic factors, and physical-social factors. They are summarised as follows:

1. spatial-economic factors – include wage differential, expected income, job opportunities, cost of migration, distance, possess properties, environment; and
2. spatial-social factors – include network (modern transportation systems, modern communication systems), relative of family, social supports, facilities, educational opportunities, and norms and values.

The outlined factors above are affected by physical, economic and social characteristics which occur in origins and destinations of migration. They change according to time, increase in living needs and geographical changes (i.e. from fulfilling a basic need such as to change jobs to getting satisfaction in life such as to possess own properties). Furthermore, Pretty et al. (2006) has specified the spatial social factors discussion on family relation and social support with the element of belonging, social support, sense of community, individual and community level, structural resources and subjective of quality of life.

In Malaysia, with reference to Ahmad (1986), Peng (1992), Chitose (2003), Rostam (2006), Jali (2009) and Rashid et al. (2012), in the 1980s, migration behaviours were mainly affected by economic factors such as job opportunities and also distance factor. In the 1990s, the factors changed where high volumes of migration were focussed in areas that offer improvement in modern economic opportunities, rapid physical development, and social

opportunities such as educational opportunities. In the 2000s, the factors changed again, where emerging significant volumes of migration, especially urban-to-urban are caused by migration for satisfaction in life. This includes properties and living in areas with high security, good physical planning and good social conditions. All these factors are assumed to be the most important factors that will affect spatial distribution of migration in urban areas for the next decades. Thus, these factors will be a basis for the analysis of migration decision-selectivity factors for the Klang Valley region.

2.0 MATERIALS AND METHODS

2.1 Case Study: The Klang Valley Region

Klang Valley region was established in 1973 as a result of recommendations from a regional planning study in the area (Shankland et al. 1973). This region has experienced a continuous rapid population growth for the past two decades which directly induced by the rapid in net-migration as well as rural-urban migration. Recently, it was leading as the fastest growing region in Malaysia, followed by the Iskandar Malaysia and Penang regions. The Klang Valley region consists of five areas: the Federal Territory of Kuala Lumpur (the FT Kuala Lumpur); Gombak; Petaling; Klang; and Hulu Langat which cover an area of approximately 2,832 square kilometres. It is located roughly at the central part of the West Coast of the Peninsular Malaysia (*Figure 1*).

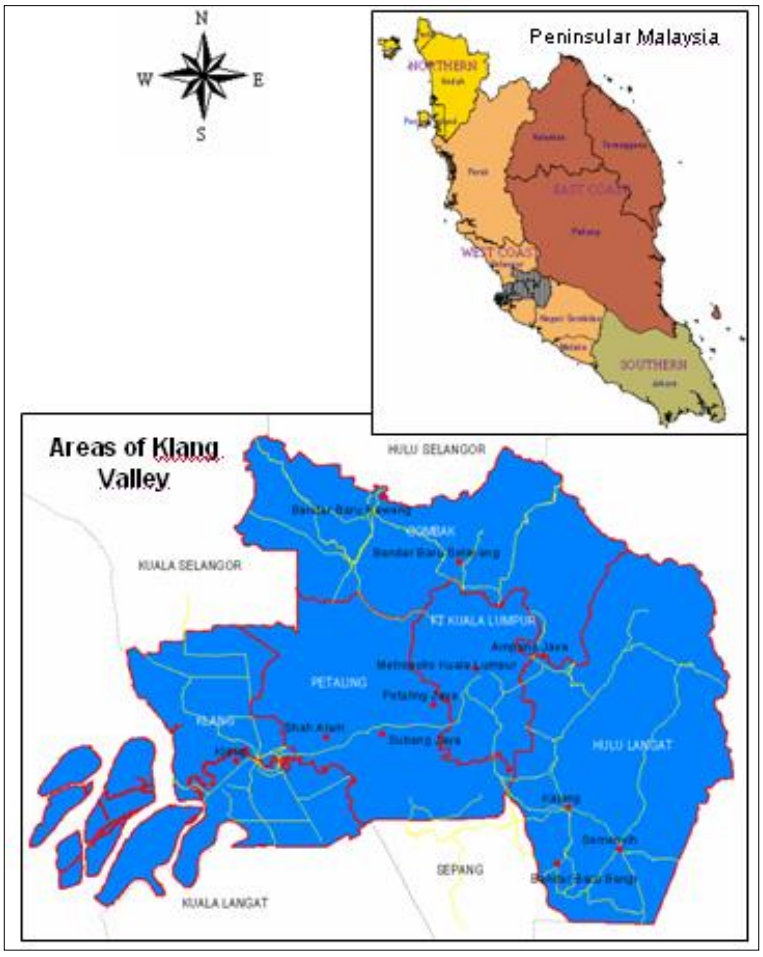

Figure 1. **The location map of the Klang Valley and its cities**

Figure 1 shows that the region is dominated by several major cities centres i.e. Metropolis Kuala Lumpur (the capital city of Malaysia), Petaling Jaya, Shah Alam, Subang Jaya, Klang and Ampang Jaya. It borders with Sepang and Kuala Langat districts which become new growth areas in Malaysia due to development of mega projects in Multimedia Super Corridor (MSC), KLIA, Putrajaya, and other townships. For the administrative matter, the Klang Valley was organised into eight Planning Local Authority (PLAs), that is, the Kajang Municipal Council (MPKj), the Ampang Jaya Municipal Council (MPAJ), the Selayang Municipal Council (MPS), the Shah Alam City (MBSA), the Petaling Jaya City (MBPJ), the Subang Jaya Municipal Council (MPSJ), and the Klang Municipal Council (MPK).

2.2 Sampling Method for Migration Behavioural Survey

In the survey, a migrant is defined as a person who is residing at a place other than where he/she was born or where he/she has changed as the place of residence across local authority areas for at least six months prior to the survey but within the Klang Valley region. The scope of migration is only focused within the Klang Valley region for evaluating the factors that affect the destination choice in the areas of the Klang Valley. In this definition, a commuting between home and workplace without changes in place of residence, and a change in place of residence without crossing the administrative boundary is not considered as migration.

The respondents of this survey consist of migrants who have moved within the Klang Valley region in different period of time. They occupy the dwellings where the interviews were conducted. Questions were directed to the heads of the household. But, when the head of the household was unavailable at the time of interview, the housewife was interviewed instead. This way is accepted in migration studies (DeJong & Fawcett 1981). Besides that, the households refer to both family and non-family households and the head of the non-family household refers to the member of the household being interviewed.

The samples of the survey were selected based on the multi-stage cluster sampling. Then, the acquiring of household samples within the sampling frames was based on the systematic sampling technique. See Rashid and Ghani (2008) for further information on the application of systematic sampling in migration behavioural survey. For the purpose, five stages of cluster (sampling frames) were developed for selecting the sampling units (households). The five stages of sampling frames are:

a) list of districts or areas of Klang Valley;
b) list of areas of planning local authority;
c) list of community/ towns growth centre;
d) list of residential areas/ sections; and
e) list of household units.

2.3 The Related Question Developed

One related question has been developed to evaluate relative importance of factors that affect people to migrate within the areas of the Klang Valley. The design question is shown below:

What are the main factors that influenced you to change your last previous place of residence and living in this place of residence? (Please choose at the most appropriate answers and ranked them)

- ☐☐ Job transfer/ promotion
- ☐☐ Suitable/ acceptable cost of living
- ☐☐ Nearness to work place
- ☐☐ Nearness to shopping centre
- ☐☐ No congestions
- ☐☐ Good accessibility
- ☐☐ Good physical and environmental features (i.e. good public amenities, no disaster risks, safety area)
- ☐☐ Good housing planning-suitable population density
- ☐☐ Outwards city centre (CBD)
- ☐☐ Nearness to public transport facilities (i.e. LRT stations, bus stations)
- ☐☐ New residential area
- ☐☐ Affordable housing price/ to rent
- ☐☐ Nearness to educational facilities (for children)
- ☐☐ Good social and community living (i.e. low crimes, social problems)
- ☐☐ Socio-cultural and demographic factors (i.e. relatives, friends, marriage, political)
- ☐☐ Other, please specify: _____

Sixteen options of answers are provided for this question. For the question above, respondents were asked to give two answers: (a) select more appropriate factors, and (b) rank the selected factors by their priority in ascending order (i.e. 1,2,…,n). A complete set of answers for the two questions includes two kinds of answers which are the chosen most influential factors (can be one or more) and arrangement of factors in order of priority.

2.4 Method of Evaluation

Based on the scores that are given to each factor, calculation of 'importance index' can be derived. The importance index is one of the major indicators (techniques) in technology foresight of survey in Japan, Germany, Korea, China and other countries (Cheng 2002). This is used to assess or evaluate the relative importance among the items that have been concerned. For instance, Cheng (2002) uses the importance index for ranking the 100 top research topics in various fields.

In relevant literature, there are many developed formula for calculating importance index such as in, Kadir et al. (2005), Johnson and LeBreton (2004), Cheng (2002), and Lim and Alum (1995). For this evaluation, the importance index is derived for each factor by using a formula which is based on Lim and Alum (1995). Many researchers have applied the formula in their research projects in particular in project management fields such as Alinaitwe et al. (2007) and Kadir et al. (2005).

The formula of the 'importance index' that has been suggested in Lim and Alum (1995) can be written as follow:

$$\text{Importance index} = \frac{5n_1 + 4n_2 + 3n_3 + 2n_4 + 1n_5}{8(n_1 + n_2 + n_3 + n_4 + n_5)} \quad (1)$$

where,
n_1 = number of respondents who answered 'very often'
n_2 = number of respondents who answered 'often'
n_3 = number of respondents who answered 'sometimes'
n_4 = number of respondents who answered 'rarely'

n_5 = number of respondents who answered 'never'

By adopting the Formula (1) by Lim and Alum (1995), the importance index for this analysis is calculated by using the Formula (2). For this purpose, values of scores are ranked either 'very important', 'important', 'moderate', 'less important' or 'never'. The arrangement is done according to compatibility of the number of *n*. The number of *n* is referred to the number of chosen answers (factors) which has been provided in the questionnaire.

$$\text{Importance index (a)} = \frac{16n_1 + 15n_2 + 14n_3 + 13n_4 + 12n_5 + 11n_6 + ... + 1n_{16}}{16(n_1 + n_2 + n_3 + n_4 + n_5 + n_6 + ... + n_{16})} \quad (2)$$

where,
n_1 = number of respondents who answered 'very important'
n_2 = number of respondents who answered 'important'
$n_{3,\ 4,\ \text{and}\ 5}$ = number of respondents who answered 'moderate'
$n_{6,\ 7,\ \text{and}\ 8}$ = number of respondents who answered 'less important'
$n_{9\ \text{to}\ 16}$ = number of respondents who answered 'never'

Note that, the way of administering the questionnaire for this study is quite a different by comparing to Lim and Alum (1995). The difference is on the way of respondents ranked their chosen answers. As mentioned above, in this study, respondents were asked to rank the selected factors by their priority in ascending order, whereas in Lim and Alum (1995), the respondents were asked to rank their answers in terms of 'very often', 'often', 'sometimes', 'rarely' or 'never'. Thus, in order to adopt the Formula (1), the values of scores have been ranked into the five importance levels which are similar to the formula. In this case, a factor which has the highest score is assigned as 'very important', followed by the factor which has the second highest score is assigned as 'important'. The factors which have the third highest and below are assigned into three importance levels: 'moderate', 'less important', or 'never'. The little adjustment is done, however, without compromising on the quality of the data analysed.

3.0 RESULTS AND DISCUSSIONS

3.1 Demographic Background

About 178 respondents were involved in the survey. 58.8% of the respondents are the head of the household. Another 31.6% and 9.6% are housewives and non-family households respectively. The respondents come from three Planning Local Authorities (PLAs) areas, namely Shah Alam City Council (MBSA), Subang Jaya Municipal Council (MPSJ) and Kajang Municipal Council (MPKj).

In the survey, it is found that the majority of respondents (74.2%) come from outside of the Klang Valley. Migrants who come from outside of the Klang Valley can be classified into two categories which are those from other states of Malaysia and those from Selangor but they are from outside areas of the Klang Valley. The states which contribute a lot of migrants to the Klang Valley are Perak, Johor, Kelantan, Melaka, Terengganu and Pahang. Meanwhile, other districts of Selangor which contribute migrations to the Klang Valley include Kuala Selangor and Sabak Bernam.

3.2 Relative Importance of Migration Decision-Selectivity Factors

Based on the Formula (2), the results of the calculation of the importance index for the factors that affect the spatial distribution of migration in the Klang Valley are shown in table 1.

Table 1 Relative importance of factors that affect distribution of migration in the Klang Valley

Migration decision-selectivity factors	Scores given by levels of importance									No answer	Importance Index	Ranking
	Very important	Important	Moderate			Less important			Never			
	16	15	14	13	12	11	10	9	8-1			
Affordable housing unit	49 (27.5%)	21 (11.8%)	4 (2.2%)	2 (1.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	102 (57.3 %)	0.971	1
New residential areas	36 (20.2%)	16 (9.0%)	6 (3.4%)	6 (3.4%)	3 (1.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	111 (62.4 %)	0.946	2
The suitable/ acceptable cost of living	8 (4.5%)	8 (4.5%)	0 (0%)	0 (0%)	1 (0.6%)	1 (0.6%)	0 (0%)	0 (0%)	0 (0%)	160 (89.9 %)	0.941	3
Nearness to place of work	20 (11.2%)	22 (12.4%)	9 (5.1%)	6 (3.4%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	121 (68.0 %)	0.936	4
Good physical and environmental features	19 (10.7%)	8 (4.5%)	12 (3.3%)	1 (0.6%)	3 (1.7%)	0 (0%)	1 (0.6%)	0 (0%)	0 (0%)	134 (75.3 %)	0.925	5
Good social and community living	12 (6.7%)	30 (16.9%)	17 (9.6%)	2 (1.1%)	4 (2.2%)	0 (0%)	1 (0.6%)	1 (0.6 %)	0 (0%)	111 (62.4 %)	0.908	6
Good housing planning and suitable population density	5 (2.8%)	11 (6.2%)	10 (5.6%)	5 (2.8%)	3 (1.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	144 (80.9 %)	0.893	7
Job transfer/ promotion	4 (2.2%)	13 (7.3%)	14 (7.9%)	8 (4.5%)	0 (0%)	2 (1.1%)	0 (0%)	0 (0%)	0 (0%)	137 (77.0 %)	0.886	8
Nearness to educational facilities (for children)	4 (2.2%)	4 (2.2%)	6 (3.4%)	1 (0.6%)	4 (2.2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	159 (89.3 %)	0.885	9
No congestion	0 (0%)	7 (3.9%)	3 (1.7%)	0 (0%)	3 (1.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	165 (92.7 %)	0.880	10
Socio-cultural and demographic factors	14 (7.9%)	7 (3.9%)	5 (2.8%)	10 (5.6%)	2 (1.1%)	6 (3.4%)	0 (0%)	0 (0%)	0 (0%)	134 (75.3 %)	0.879	11
Good accessibility	4 (2.1%)	6 (3.2%)	11 (5.9%)	3.7 (2.5%)	1 (0.6%)	0 (0%)	3 (1.6%)	0 (0%)	0 (0%)	155 (82.9 %)	0.861	12
Others	1 (0.6%)	1 (0.6%)	1 (0.6%)	2 (1.1%)	2 (1.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	171 (96.1 %)	0.848	13
Nearness to shopping centres	1 (0.6%)	2 (1.1%)	2 (1.1%)	0 (0%)	2 (1.1%)	2 (1.1%)	0 (0%)	1 (0.6 %)	0 (0%)	168 (94.4 %)	0.806	14
Outwards city centres	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (1.1%)	0 (%0)	0 (0%)	0 (0%)	0 (0%)	176 (98.9 %)	0.750	15
Nearness to public transport facilities	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (1.1%)	0 (%0)	0 (0%)	0 (0%)	0 (0%)	176 (98.9 %)	0.750	16

Table 1 shows that factors from spatial-economic aspect influence distribution of migration the most in the Klang Valley. The factor of the highest importance index is affordable housing areas (importance index: 0.971). It is followed by new residential areas (importance index: 0.946), the acceptable cost of living (important index: 0.941), nearness to place of work (importance index: 0.936), and good physical and environmental features

(importance index: 0.925). Then, it is followed by spatial-social factors such as good social and community living (importance index: 0.908). The importance index for the other migration decision-selectivity factors can be referred to Table 1.

These findings explain that the migration decision-selectivity in the Klang Valley is influenced a lot by the desire for satisfaction in life such as owning affordable homes in new, comfortable and safe surroundings and also homes that are not too distant from place of work. Rostam (2006) discovers quite nearly similar factors. This situation happens because the majority of the respondents who migrate come from a group of people who have families and a stable economy. Migration is also done without change of the workplace because many respondents choose a housing area that is near place of work. So, distance factor specifically from home to place of work is still significant to be considered though there are researchers who deny the importance of the distance factor such as Rostam (2006).

4.0 CONCLUSIONS

This paper has described the kind of factors that affect spatial distribution of migration potential in urban areas which is called as the migration decision-selectivity. The factor is a combination from the migration decision and destination choice. At present, few researches have looked into such factor thoroughly. Besides that, this paper has examined the migration decision-selectivity factors for the Klang Valley, Malaysia. The results of analysis of the relative importance show that the migration decision-selectivity factors in the Klang Valley mainly come from the spatial-economic aspects. The factor of the highest importance index is affordable housing areas, followed by new residential areas, the acceptable cost of living, nearness to place of work, and good physical and environmental features. The factor of the spatial-social aspect also influenced the migration decision-selectivity such as good social and community living. Overall, the factors in the seventh ranking (see Table 1) are: (a) affordable housing areas; (b) new residential areas; (c) areas with the suitable or acceptable cost of living; (d) areas which are near to place of work (i.e. near commercial and industrial areas); (e) areas with good physical and environmental features; (f) areas with good social and community living; and (g) areas with appropriate (adequate) planning (i.e. good housing areas, density). With reference to these factors, they have shown that the scenario of migration decision-selectivity specifically in the metropolitan area in Malaysia has shifted into a new dimension of migration intention which is to gain a satisfaction in life. Subsequently, these factors would help urban planners to understand spatial distribution of migration potential in urban areas in order to plan a proper development planning for the future. Later then, they should be considered in the development of a migration model for spatial migration modelling in urban areas.

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