PLANNING MALAYSIA

Journal of the Malaysian Institute of Planners

Editorial & Business Correspondence
PLANNING MALAYSIA
Journal of the Malaysian Institute of Planners
B-01-02, Jalan SS7/13B, Aman Seri, Kelana Jaya
47301, Petaling Jaya, Selangor Darul Ehsan, MALAYSIA
Tel: +603 78770637 Fax: +603 78779636 Email: mip@mip.org.my
www.planningmalaysia.org

This journal is a refereed journal.
All articles were reviewed by two or three unanimous referees identified by the Institute (MIP).

Published By
Malaysian Institute of Planners

ISSN Number
1675-6215
e-ISSN
0128-0945

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"Whoever travels in search of knowledge is on Jihād until he returns"

(Transmitted by Tirmidhi & Darimi)

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MESSAGE FROM THE PRESIDENT

Dear all,

I am pleased to present to you this Planning Malaysia Journal Volume 15 Issue 3 for your reading pleasure. Since our migration to online version of the Journal, we have successfully elevated the Journal to higher level. The Journal readership has increased, reaching wider and international audience. The Journal is also gaining recognition from local and foreign scholars. Article submissions have increased three-fold and this year alone we are publishing 5 issues of the Journal, which is unprecedented. This issue also reflects the wider acceptance of the Journal. It includes articles not only from local scholars, but also from foreign scholars. We hoped that the inclusion of articles from foreign scholars would benefits local readers with knowledge of cases and experiences related to urban planning from other countries as well.

I would like to thank the Journal Editorial Board and Secretariat for their untiring efforts in the publication of the Journal and also in successfully uplifting the Journal to higher level.

Thank you.

TPr. Hj Ihsan Zainal Mokhtar
PRESIDENT
(2017-2019)

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Journal of the Malaysian Institute of Planners
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THE INTERPLAY OF SPATIAL POLICY, TRAVEL BEHAVIOUR AND AIR QUALITY IN ISKANDAR MALAYSIA

Ariva Sugandi Permana[1], Ahmad Nazri Muhamad Ludin[2], & M. Rafee Majid[3]

[1,2,3]*Department of Urban and Regional Planning, Faculty of Built Environment*
UNIVERSITI TEKNOLOGI MALAYSIA

Abstract
Iskandar Malaysia has been emerging as a centre of economic growth in the southern corridor of Malaysia. While the present spatial policy has emboldened the growth centre that inspires the urban development in the region to flourish, the spatial development has brought a substantial environmental consequence to urban areas. With the support of travel behaviour of the citizens as a catalyst, the interplay between spatial policy and urban air quality in the region becomes a major concern. This study began by undertaking spatial policy analysis at local and federal levels. Then, an origin-destination study was carried out to assess the travel behaviour of citizens and the concentricity or poly-centricity of the region as an eventual reflection of spatial policy. Based on the information on travel behaviour and number of vehicles in Iskandar Malaysia, the vehicle-kilometre travelled (VKT) was estimated as well as the carbon emission from the transport sector. An ethnographic survey was also conducted to understand the non-motorized travel behaviour of the citizens i.e. willingness to walk. This survey was to crosscheck and confirm the willingness to walk of the citizens resulting from questionnaire survey. Results of the study reveal that the spatial policies of Iskandar Malaysia along with the travel behaviour of the citizens have strongly shaped the present spatial structure of Iskandar Malaysia region, and ultimately lead to ever increasing air pollution in the region.

Keyword: Spatial policy, spatial structure, travel behaviour, growth centre, transport energy, air quality.

Date Received: 23rd July 2017
Date of Acceptance: 2nd October 2017

[1] Senior Lecturer at Universiti Teknologi Malaysia, Email: ariva@utm.my

INTRODUCTION

Spatial policy may be influenced by various determinants, for example, political agenda (Chen et al., 2015), economic motive (Chen et al., 2005), social, and financial and business power (Mirabaud & Deberre, 2006). The power of developing, implementing and enforcing spatial policy is mostly in government's hands through their legislative and executive powers. In a city, the authority of implementing and enforcing power on spatial policy is commonly in the hand of the mayor. By the presence of spatial policy powers at the city authority with various driving forces and motives, the spatial policy is therefore reflected in the existing land use and urban form. This study recognized that the existing urban form and the performance of its elements are the ultimate reflections of the city stakeholders. Accommodating the various aspirations of every single city stakeholders is impossible to be reflected in the city. However, there is a common interest of all city stakeholders towards liveable and sustainable cities. City policy will be reflected in the performance of city itself (City of Westminster, 2016).

Spatial policy of a city, as reflected in urban land use, brings different impacts in the downstream process, for example, on transport and environment (Permana et al., 2015a). Many studies have been done on land use and transport articulations as well as energy and transport interplays. As a result, land use, transport, energy and environment nexus has been well articulated for quite a while, for example by Permana et al. (2015a), Brandi, Nigro and Petrelli (2015),Wang, Monzon and Ciommo (2014), Koomen and van Beurden (2011), Hickman and Banister (2007), Cervero (1996), Banister and Liechfield (1995), and Newman and Kenworthy (1989). Within this nexus, the energy and environment relationship study has also been adequately carried out, as exhibited by Permana et al. (2015b), Proost and van Dender (2012), Permana et al. (2008), Warren and Enoch (2006), Steemers (2003), Keuken (2002), Ahearn (1997), Anderson et al. (1996), Breheny (1995), Owens (1992) and many others. In contrast, only few studies on the linear nexus of land use, transport, energy use and environment have been undertaken. This nexus exhibits linearity among elements, and therefore, is a multi-disciplinary research arena due to their interconnectivity. This nexus emerges a potential climate change co-benefits if the elements are properly synergized (Figure 1).

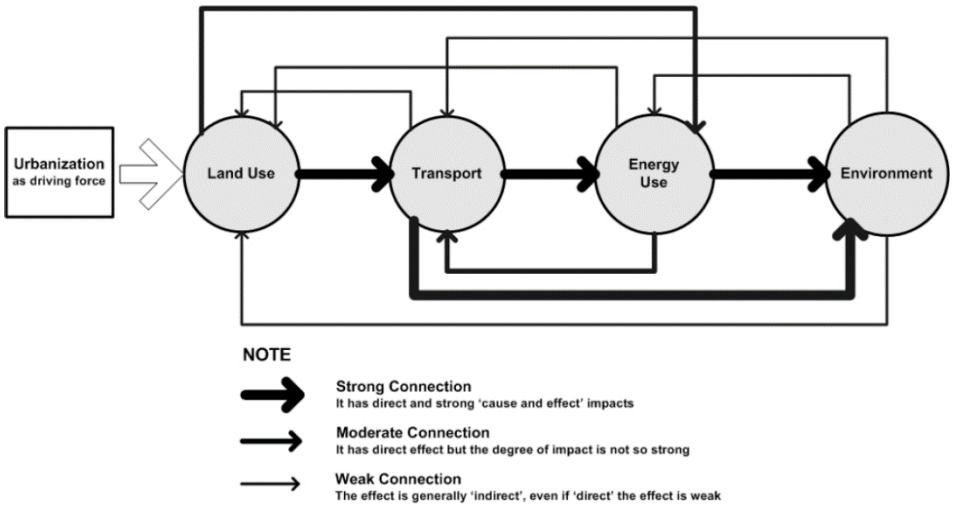

Figure 1 Land Use, Transportation and Environment Nexus

RESEARCH BACKGROUND

Iskandar Malaysia was established in accordance with the establishment of Iskandar Regional Development Authority (IRDA) by Act 664. The purpose of IRDA, as reflected by the Act 664, is to provide the proper direction, policies and strategies in relation with the development within Iskandar Region; and to provide the coordinating platform among government agencies to promote trade, investment and development within the Iskandar Region (Iskandar Regional Development Authority Act 664, 2007). As a prominent southern economic corridor of Malaysia, Iskandar Malaysia is located in the State of Johor and plays a significant role in promoting the development in the region, which was formerly known as Iskandar Development Region and South Johor Economic Region. Iskandar Malaysia region covers several areas, which are *Bandaraya Johor Bahru*, *Bandar Johor Bahru Tengah*, *Bandar Pasir Gudang*, *Bandar Kulai* and *Daerah Pontian*. The special region of Iskandar Malaysia is being managed by Iskandar Regional Development Authority.

The fast urban development in Iskandar Malaysia, which has been largely fuelled by the Malaysia National Physical Plan, has made the Iskandar Malaysia region an interesting research arena particularly with respect to urban planning and development, and other associated fields. Five flagship zones have been set in Iskandar Malaysia (IRDA, 2016). The zones have different emphasis but synergistically work towards the accomplishment of Iskandar Malaysia's vision as a strong and sustainable metropolis of international standing.

METHODOLOGY

The study was conducted in Iskandar Malaysia by undertaking (1) household-based questionnaire survey to understand citizen's travel behaviour, their transport energy consumptions, 'stated willingness to walk' of the respondents and other relevant attributes (2) origin-destination survey to understand the poly-centricity of the study area (3) analysis on vehicle-kilometre travelled (VKT) in the study area (4) estimation of carbon emission in Iskandar Malaysia based on VKT (5) ethnographic survey to understand the 'revealed willingness to walk' and to crosscheck with the 'stated willingness to walk' of the citizens of Iskandar Malaysia.

A convenient random sample survey was undertaken. The number of sample in each area was taken as close as the proportion of population size, strength of influence and size of the area. The strength of influence of an area of Iskandar Malaysia was very subjective and thus needed an academic judgement, which was based on the information received by the researchers. An ethnographic survey was also done where the researchers candidly observed the walking behaviour of the randomly selected respondents. This was to crosscheck and confirm the willingness to walk of the citizens, and this will be discussed further in the subsequent sections.

RESULTS AND DISCUSSIONS

The Spatial Structure in Iskandar Malaysia: The Concentricity that matters

The micro spatial structure of Iskandar Malaysia is reflected in the development of neighbourhoods *(Tamans)*. As required by law, the elements of a *Taman* in Iskandar Malaysia commonly consist of mix-development of residential and commercial premises. Industrial areas are separated from this mix-development *Taman* by a distinguished *Taman Perindustrian* (Industrial Park). The idea of mix-development of residential and commercial area within a *Taman* was to accomplish the 'within walking distance' concept. It is thus expected to minimize the needs for motorized travel, and subsequently reduce the transport energy consumption and improve urban air quality. This study shows that most citizens of Iskandar Malaysia, or *Johoreans*, are willing to walk (WTW) for social purpose for only 252 meters (stated WTW). Ethnographic research in some neighbourhoods in Johor Bahru reveals a very surprising fact that three different races in Malaysia exhibit different walking habits as shown in the Table 1.

Table 1 Walking Distance of Malaysian Race in the Study Area (Revealed WTW)

No	Three Primary Races of Malaysian	Number of Sample	Average Distance of Walk for different social purposes (Meter)			Probability of WTW for walking distance of >250 m (%)
			Shopping Purposes	Religious Purposes	Social Visit	
1	Malay	32	45	155	60	6.0
2	Chinese	25	78	ND*	75	18.0
3	Indian	23	56	70	55	13.0

**NOTE: The Chinese race can do their religious practices in their own premises. Thus distance may be zero*

Although the above information may not statistically represent the entire Malaysians - because to acquire the truly statistically representative data may require 3 years of ethnographic research - but the ethnographic survey shows that generally Malays have the lowest probability of willingness to walk for general purpose with the distance of more than 250 meters. Surprisingly, Malays have the longest walking distance for religious purpose e.g. praying in the *masjid* in comparison to the other two races. The fundamental reason of this fact is due to the strong belief of Muslim Malay on the reward of every single foot-step of him to pray in the *masjid*. In the meantime, Chinese has no preference on the religious duty since most of them can do their religious practices in their own houses, and thus, the distance may be zero.

By the above facts, the present neighbourhood design in Malaysia, by adopting mixed development concept, may not be able to encourage most Malaysian to travel with non-motorized mode of transportation. Thus, the concept of 'within walking distance' of mixed development may not accomplish its mission to minimize transport energy consumption and improve urban air quality. Still, to some extent, energy consumption reduction exists. The present horizontal mixed development seems failed to minimize energy consumption for transport purpose by the above reasons. The paradigm shift of mixed development is therefore necessary towards (1) vertical high-density (HD) mixed development and/or (2) horizontal mixed development with equidistance for shopping and primary education. This concept has been successfully implemented in, for instance, Singapore and Bangkok with full support from the public transportation system.

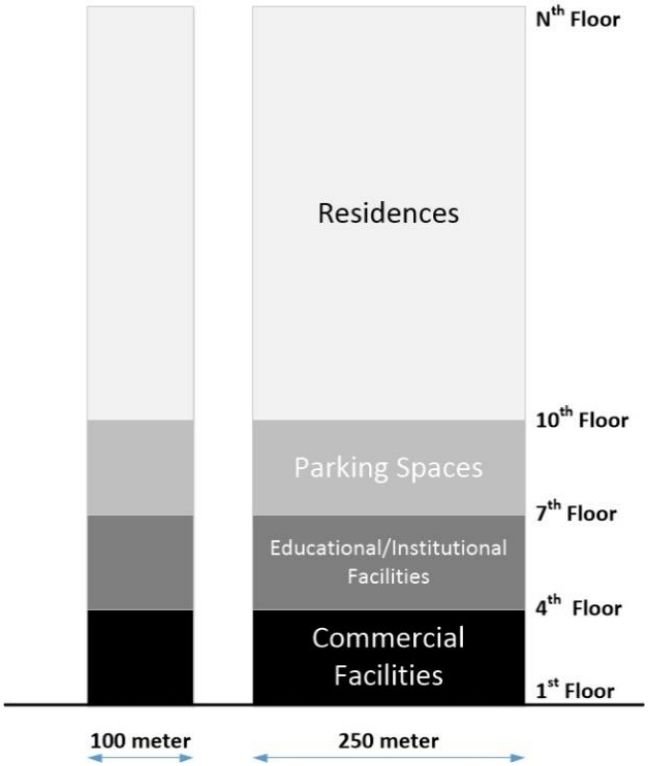

Figure 2 Vertical HD Mixed Development Concept

Vertical high-density mixed development means the development of residential, commercial and educational facilities are within the same premise but different strata, such as a superblock multi-storey condominium or apartment where the first three floors are intended for commercial facilities, the fourth to sixth floors are for educational and institutional facilities, the seventh to tenth floors are for parking, and the remaining eleventh floor and above are for residential premises. The basic concept of vertical high density mixed development is shown in Figure 2. The prominent appearance of the vertical high density mixed development in Bangkok, for example, reflects only single purpose apartment or condominium i.e. residential purpose with complimentary utilities and amenities. The same approach is also adopted in Iskandar Malaysia region, particularly in Johor Bahru, except few examples such as KSL Resort and Water Front Danga Bay and Skudai Parade, although these examples reflect only the mixture of residential and commercial purposes with complementary utilities and amenities such as parking lots. In this condition, present mixed development approach in urban development to accomplish 'within walking distance' concept prevails.

Another approach is by adopting horizontal mixed development. This concept means that the development of residential, commercial and educational areas follow a radial zoning pattern with equidistance feature where primary educational area is in the core of the area. The circumferential zone next to the core is commercial area, and then in the outside part of the zone is residential area. The maximum radius of the zone is 250 meters, or the distance of the centre point to the centre of gravity of the residential areas is 250 meters. This is considering the willingness to walk of the citizens. Otherwise the concept of 'within walking distance' will again fail. The basic concept of horizontal mixed development is shown in Figure 3.

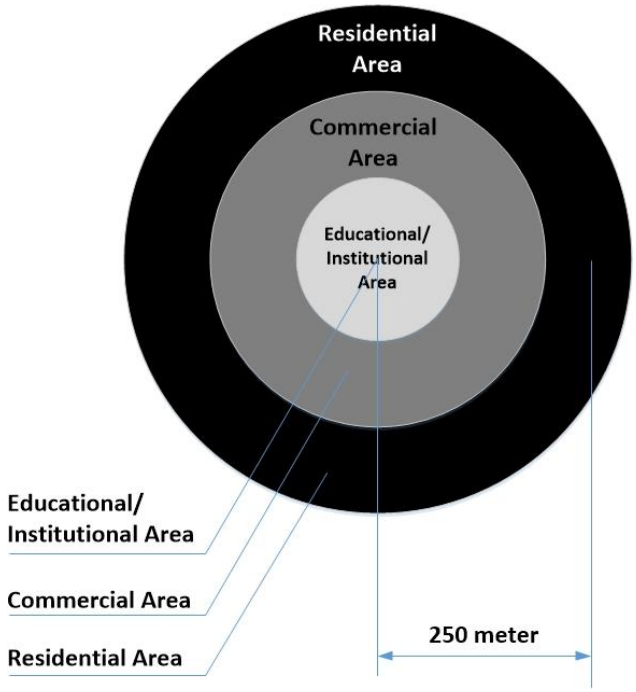

Figure 3 Horizontal Mixed Development with Equidistance Feature

Even though at micro-level, which is basically shaped by present mixed development, the development in Iskandar Malaysia does not reflect the fundamental reduction on motorized travel demand. However, at the macro-level, the spatial structure of Iskandar Malaysia reflects a polycentric quality. The polycentric quality would be able to reduce the distance of motorized travel demand and traffic congestion.

The urban features towards low carbon emission which should be available in Iskandar Malaysia are (1) 'within walking distance', (2) the willingness of Citizens to walk for shorter distance travel, and (3) the absence of

micro element of urban design of pedestrian friendly environment. The quality of 'within walking distance' has actually been implemented to some extent in Iskandar Malaysia through mixed development, although some improvement to suit the travel behaviour of the citizens may be necessary. On the other hand, the travel mode of citizens in Iskandar Malaysia is predominantly motorized travel, even for short distance, due to easy and affordable private car ownership. These facts are seemingly leading to the ever-strengthening interplay between land use, transport and air quality in Iskandar Malaysia.

The Interplays of the Nexus' Elements

The linear interplay of land use (as reflected by urban structure), transportation, and environment (as exhibited by air quality) shows very strong association in Iskandar Malaysia. Figure 4 shows that the VKT is steadily increasing over the years, and shows predominant feature of private cars in aggregated VKT. The private car ownership in Iskandar Malaysia was 0.40 car/person and private vehicle ownership (cars and motorcycles) was 0.90 vehicle/person in 2014, and these figures may increase tremendously every year.

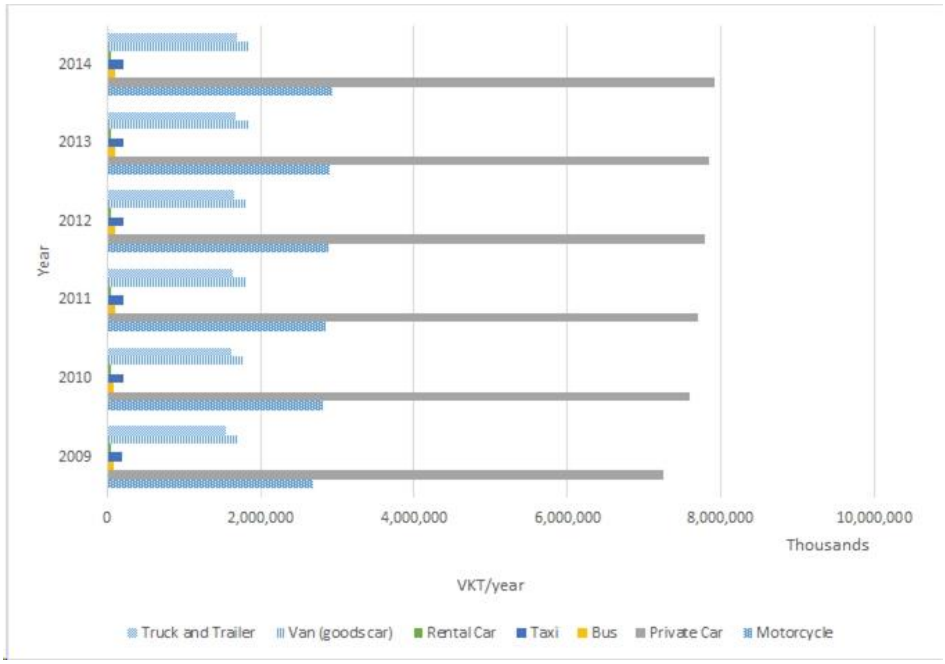

Figure 4 Vehicle-kilometer traveled in Iskandar Malaysia

CO_2 reduction was estimated based on Emission Factor from various sources, among others are studies by Mittal and Sharma (2003), European Environmental

Agency (2001) and Ramachandra and Swermala (2012). Based on the EF, the trend of CO_2 Emission Equivalent in Iskandar Malaysia is shown in Table 2.

Table 2 The Trend of CO_2 Emission Equivalent in Iskandar Malaysia

Source	EF CO_2 (g/km)	2009	2010	2011	2012	2013	2014
Motorcycle	60.30	177,859	186,283	188,912	191,127	192,441	194,376
Private Car	223.60	2,431,725	2,546,902	2,582,841	2,613,121	2,631,091	2,657,551
Bus	515.20	906,793	949,743	963,145	974,436	981,137	991,004
Taxi	208.30	68,172	71,400	72,408	73,257	73,761	74,502
Rental Car	208.30	31,248	32,728	33,189	33,579	33,809	34,149
Van (goods car)	515.20	1,748,795	1,831,625	1,857,471	1,879,247	1,892,170	1,911,199
Truck and Trailer	515.20	1,584,749	1,659,810	1,683,231	1,702,965	1,714,675	1,731,919
TOTAL (tonne CO_2 equivalent)		6,949,341	7,278,491	7,381,198	7,467,731	7,519,085	7,594,702

NOTE: Estimated based on VKT and its trends

The spatial pattern in Iskandar Malaysia has been driven by the spatial policy of IM with five Flagship Zones that strongly encourage economic activities to flourish and growth. Amid current trend of development in Iskandar Malaysia, there is, however, no guarantee that current spatial policy will be able to decelerate the rate of air quality degradation that stems from transport sector without sociological cognizance from the whole citizens on their travel behaviour, particularly on the importance of their non-motorized travel activities.

WAY FORWARD: MAXIMIZING THE BENEFITS OF EACH ELEMENT OF THE NEXUS TOWARDS LOWER CARBON EMISSION.

This study recognized the elements in the nexus, which are, urban space, transport, transport energy and air quality. Maximizing the benefits of each element towards economically rich, socially responsive and environmentally sound will be necessary on the way to sustainable Iskandar Malaysia development.

Most citizens living in Iskandar Malaysia travel by using private vehicles even for only 250 meters, although most housing neighbourhoods *(Tamans)* in Johor Bahru adopts mixed use development with 'within walking distance' principle. Spatial pattern exhibited in Iskandar Malaysia driven by spatial and economic policies in the region has resulted in the poly-centricity of Iskandar Malaysia with multiple economic centres, thus relieving the concentrated traffic loads and accomplishing the shorter trips for shopping and working purposes. At

micro-level, the mixed development, to a certain extent, has accommodated the principle of 'within walking distance' to reduce the need of motorized travel for shorter distance thus reducing energy consumption and improving urban air quality. The new approach of mixed development that encourage citizens to walk is therefore necessary. The proposed new approach of mixed development is by introducing vertical high density mixed development and horizontal mixed development with equidistance feature. The approach is to accomplish two-pronged objective that is usually present in non-cooperative form in the study area. The objectives to create 'within walking distance' performance of urban development while accommodating non-motorized travel of the citizens in Iskandar Malaysia should be promoted in the urban development in Malaysia.

ACKNOWLEDGMENTS

The support Project Development Scenarios of Low Carbon Society for Asian Region, Code R.J130000.7301.4B145 is highly acknowledged.

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Journal of the Malaysian Institute of Planners
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AN IMPLEMENTATION APPROACH TO SPATIAL PLANNING IN IRAN CASE STUDY: THE SOUTH ALBORZ MACROREGION

Masoud Taghvaei[1], Hasan Beik Mohammadi[2], Nader Zali[3], & Mitra Kasaei[4]

[1]UNIVERSITY OF ISFAHAN, IRAN
[2,4]SHAKHESPAJOUH RESEARCH INSTITUTE, ISFAHAN, IRAN
[3]UNIVERSITY OF GILAN, IRAN

Abstract
Despite being in existence for over seven decades, spatial planning policies in Iran have not been implemented and no serious volition to adopt their general approaches was observed. This study identifies the effective factors of the spatial planning implementation approach in the macroregion around south Alborz. By adopting the Delphi technique, a cross-impact matrix and data analysis using MICMAC software, the impact of these factors on the non-implementation of spatial planning in Iran was investigated. The results show that the existence of a central planning system, the dominance of economic and sectoral planning, the lack of integrated land-planning system are among the effective factors in the spatial planning approach in Iran. Therefore, suitable solutions to eliminate the drawbacks are proposed.

Keyword: Implementation approach, spatial planning, South Alborz Macroregion (Iran), MICMAC software.

Date Received: 13th November 2016
Date of Acceptance: 24th August 2017

[1]Professor of Geography and Urban Planning in University of Isfahan. Email: masoud.tgv@gmail.com

INTRODUCTION

Spatial planning concerns knowing the land's capabilities and understanding precedents and subsequent chains and relationships. It adopts an inter-sectoral attitude and a geographical and spatial approach, using the latter to identify its priorities with respect to other parts of the land, and it defines its impacts on the region's spatial organization and settlement patterns. The purpose of spatial planning is to add a new aspect to planning, which is the activity involved in human organization and distribution procedures throughout a national land (Regional Planning Office, 1997).

Spatial planning has always been one of the main concerns of town planners, but this type of planning has not been able to become operational in the context of medium-term plans. The obvious outcome of this has been the imbalanced distribution of resources and development opportunities in the land and intensification of spatial inequalities through concentration of resources and investment at the growth poles. Therefore, it is essential to implement national planning missions and qualities at the provincial level in order to implement national planning policies and to meet the planners' expectations, in the context of combining the land or sectoral perspectives, to ensure, through spatial planning, inter-sectoral, inter-regional and sectoral–regional coordination.

RESEARCH BACKGROUND

Spatial planning implementation approach has been considered in previous studies. The European approach to spatial planning is summarized in the European Spatial Development Perspective (ESDP), which was proposed by the European Commission for implementation by Member States of the European Union. It has been implemented by the Dutch, and a significant part of it is devoted to large ecological networks, environmental reconstruction plans and polycentric urban systems (Faludi, 2000).

Since 1996, the European Union has tried to broaden and modernize the methods of planning and spatial contribution in the European region, wherein such spatial development contributions have been evaluated through financial, official and organizational structures (Harris & Hooper, 2002). The contribution is based on the commonly available plans to achieve political goals in the direction of the ESDP. In addition, the idea of creating a European Spatial Planning Operation Network (ESPON) has been proposed by the European Spatial Development Commission (van Gestel & Faludi, 2005). The Netherlands could surpass other European countries by using a specific coordinator in development planning projects and hiring competent consultants (Grijzen, 2010).

Of the developing countries in Asia, India presents an example of significant progress in spatial planning. With a population of more than one billion (from 1998 onwards) and lacking underground and natural resources, India has approached spatial planning issue in a different way. Like other

developing countries, India has a great problem: limited access to spatial planning maps and images. Even if they are available, they are not up-to-date and, therefore, they cannot properly show any spatial planning variations (Gautam & Raghavswamy, 2004).

Meanwhile, in Iran, spatial planning has been in different forms, including different types of rural exploitation. Sheikh Bahaei's petition is one of the more valuable documents of regional planning in terms of a spatial planning programme (Ramesht, 1996). The modern thinking behind spatial planning in Iran, however, was first proposed in societal studies by the University of Tehran Research Institute in a report entitled Issue of Population Growth: Tehran and Notes About Policy Development Projects in late 1966 (Department of Sociology, 1966). At the time, the term 'spatial planning' was not yet common, compared to the French term aménagement du territoire and, in the aforementioned report, the term 'country development policy' was used instead. By the beginning of the third development plan (1962–1967), regional planning activities had begun. These actions were accelerated in the fourth plan (1967–1972) and the country was divided into regional units by consultant engineers and ministries. Since then, at least 11 ministries and consultant engineering entities have divided the country into geographical regions. Spatial planning in Iran was prepared by Setiran Consulting Engineers in 1975. The Budget and Planning Organization invited Setiran Consulting Engineers, consisting of the French Setcupe company and its Iranian partner, to undertake the primary studies and to prepare the country's spatial planning. The results of the consultant engineers' studies have been published in a series of quarterly reports and study syntheses (Setiran Consulting Engineers, 1977).

After the Islamic Revolution, and since 1984, the second period of spatial planning began with basic studies of Islamic spatial planning and were named The Basic Practices of Islamic Spatial Planning in Iran. In 1996, spatial planning studies were recommenced. Considering that the research carried out in the years before the revolution was by Setiran Consulting Engineers, these studies could be considered as the third period of spatial planning studies in Iran. In 2004, the national criteria of spatial planning were adopted by the Council of Ministers. In 2005, a proposed framework for a national spatial planning centre was adopted as part of organizing the economic affairs, and formation of a planning and management department.

Table 1 Classification of Spatial planning activities in Iran

Reasons for non-execution of spatial planning	**Spatial planning activities**	**P**eriod	**Term**
Attitudes of the sovereignty of the time period	Formation of the concept of Spatial planning	The beginning of 1961 to 1971	First

Reasons for non-execution of spatial planning	**Spatial planning activities**	**P**eriod	**Term**
The occurrence of the revolution	Studies of comprehensive Setiran plan (first experience)	1961-1975	Second
The-8year-war between Iran and Iraq	Studies of the land use planning of Islamic lands of Iran (second experience)	1983-1988	Third
Relative Depression Due to Post-War Construction Problems-Hurriedness	Studies of Basic National Development Theory (Third Experience)	1997-2005	Fourth
Doubt, Redefining and design of discourse with the lack of consensus among the experts	The new era - the formation of the Land use Planning Council and the provincial land use planning programs studies (fourth experience)	2006-So far	Fifth

The history of these studies in Iran (Table 1) and spatial planning structure demonstrate a need to modify the available basic rules, to increase the efficiency of the implementation process and to improve coordination between the sectors. The revision of planning law and spatial development is a priority (Podgorica Ordering Party, 2008). According to the sustainable development principles in spatial planning, the decision should be coordinated, with the involved organizations helping the implementation of spatial planning programmes at all levels by playing consultancy roles and applying the rule of law (Justice and Environment, 2013). In this study, the effective factors in the spatial planning approach was studied in the macroregion of south Alborz to provide implementation solutions for this kind of planning in Iran.

In Iran, there are few studies about this topic or on the obstacles facing the use of land. According to studies, the main reasons for not achieving spatial planning purposes have been identified as follows: a lack of coherent thinking at management level in managing the land; the lack of an adopted plan and programme for space organization; and the lack of a responsible legal entity to manage the land and to oversee the implementation of the intended spatial plans and its monitoring (Latifi, 2009). Other main obstacles to achieving the purpose of spatial planning in Iran during the last 50 years include: the regime attitude at the time (1961–1971); the Islamic Revolution (1975–1977); the Iran-Iraq War (1980–1988); reconstruction problems after the war (1988–1989); precipitance and lack of preparation (1997–2005); and the previous government's attitude (2005 to the present) (Sharifzadegan & Razavi Dehkordi, 2010). In recent studies, the following have been identified as the most important factors in the failure of spatial planning in the Iran: lack of an exact definition of the planning position or

spatial planning perspective in legal documents directing the plans and decisions in the field of management; the governance of the oil economy; a renter economy, failing to institutionalize the spatial-regional approach; the existence of a traditional planning system that accepts the spatial planning approach in the content areas; and the existence of regional inequalities (Sarvar & Khaliji, 2014).

RESEARCH METHODOLOGY

In the present study, the effective factors in the spatial planning implementation approach in Iran and south Alborz were identified using a combination of descriptive, documentary and causal-analytical methods, and by using questionnaires and the Delphi technique in the first phase. In the second phase, the factors which impact on each other were determined using the cross-impact matrix method in professional panels. Appropriate software (MICMAC) was then used to identify and analyse the key and effective factors.

MICMAC software has been designed to perform the complicated calculations involved in the cross-impact matrix. In order to do this, the important variables and components in the intended area are first identified and then entered into a matrix, such as the impact-analysis matrix, allowing the relationship between these variables and the related areas to be recognized by a panel of experts. The variables in the rows affect the variables in the columns. So, the total rows of variable data, the effectiveness value and the total columns of variable data show the influence value (Godet, 1991).

Six phases were carried out in the analysis of the cross-impact matrix using MICMAC software, as suggested by Asan & Asan (2007):

- Systematic understanding and observing of the system stability or lack of stability.
- Identifying high degree direct and indirect impacts of variables.
- Identifying the main factors and drivers and using them in scenario writing.
- General understanding of the system and avoiding detailed analysis.
- Identifying the unstable system factors (factors that must be managed).
- Identifying the environment by measuring influence.

Background of Study Area

The studied region is located on the southern slope of the Alborz Mountains in an area of about 194,050 km^2, which includes seven provinces, which are Zanjan, Qazvin, Alborz, Tehran, Qom, Markazi and Semnan. This region is bounded by the Alborz Mountains, Ardebil, Gilan, Mazandaran and Golestan in the north, the Zagros Mountains, East and West Azarbayjan and Province, Kordestan, Hamedan and Lorestan in the west and south-west, Dasht-e-Kavir and Isfahan, Yazd, Razavi and North Khorasan in the south, south-east and east (Research Center of Urban Development and Architecture of Iran, 2008).

ANALYSIS AND FINDINGS

In order to study and analyse which factors are effective in the spatial planning implementation approach in the south Alborz macroregion, a survey was conducted to gather ideas from the participants. A series of factors were also gathered using the theoretical foundation used by the researchers. A total of 230 factors were collected. Among these proposed cases, in the first phase, 61 effective factors were finally extracted after combining overlaps and omitting unrelated and ambiguous cases. These were classified into eight groups, as shown in Table 2, where the Delphi method and scientific foundation have been used to sum up the variables.

Table 2 Characteristics of effective factors in spatial planning implementation approach and their classification for the south Alborz macroregion

Classification	Indicators	Group
comprehensive understanding of the territory/ natural conditions / soil and water resources / developed areas / spatial organization of population and human / made environment / land features use / population spatial mobility / environment / issues of settlements' physical expansion / the radius of industries' establishment / important political centres / growth poles	Spatial organization indicators	1
zoning / desert areas / political conditions / neighbouring areas' security-in-charge/ organization multiplicity / war and insecurity / ethnic and religious issues / political pressure to implement the projects	Political and security indicators	2
location data and information / spatial studies model / scientific level of spatial planning preparation centres / codifying goals and strategic vision / defining area / common understanding of spatial planning	Content index	3
stakeholder involvement / local communities' awareness / private sector partnership	Social and cultural factors	4
legal status / the division of labour between devices / parallel implementation / land management legal entity / legal support / integrated model of spatial planning	Legal indicators	5
centralized administrative and political bureaucratic structure / local and regional prejudices / a break in the process of land use / stable management of planning system / the system of land management and urban planning / governmental look at land use / integrating land use with development planning / sector and territory thinking / preparation schedule / relying on comparative advantages / provincial and non-regional point of view / the institutionalization of land preparation / officials' commitment / futuristic vision	Management and administrative indicators	6

Classification	Indicators	Group
superficiality in developing programme strategies / beyond regional and national considerations / interaction between provinces / result-orientedness rather than process orientedness / traditional views on planning system in land use, view acceptance / uniform description of services for all areas / sectoral view in planning /	Effective factors in programmatic view	7
dependence on oil / spatial economy / capital and financial resources (database of projects) / interaction of economic process beyond peripheral areas	Economic indicators	8

The matrix dimensions are 61 × 61 and are set in eight different parts. The matrix filling degree is 85.72%, which shows that the chosen factors have had a great and dispersive impact on each other and that, in fact, the system has been unstable. Of the 2,984 measurable variables in this matrix, 497 relationships were zero, which means that these factors, representing 14.2% of the matrix total volume, have had no impact on each other. On the other hand, based on the statistical indicators and with a 2-time data rotation, this matrix has 100% optimization, which implies a high validity of the questionnaire and its answers

In Figure 1, the distribution of variables shows the stability or lack of stability of the system. This means that some variables have high impression and some have high effectiveness. In total, three groups of variables can be observed in a stable system (Arcade et al. 2003):

- Very effective variables in the system (key factors).
- Independent variables.
- System output variables (result variables).

Based on the distribution of effective factors in the spatial planning implementation approach, it can be observed that the system is strongly unstable. Most variables are around the diameter axis of the plane. Except for a few factors, which show high effectiveness in the system, the rest of the variables have the same status in relation to each other, which are just different in intensity and weakness.

Two-dimensional variables have two common characteristics: high impression and high effectiveness. Every action on these variables will affect the others and will also cause variations. These variables can be divided into two groups: risk variables and target variables (Figure 2). Of the 61 variables 14 are in this group, which are mainly the variables related to planning and management issues and include some cases of economy and space organization.

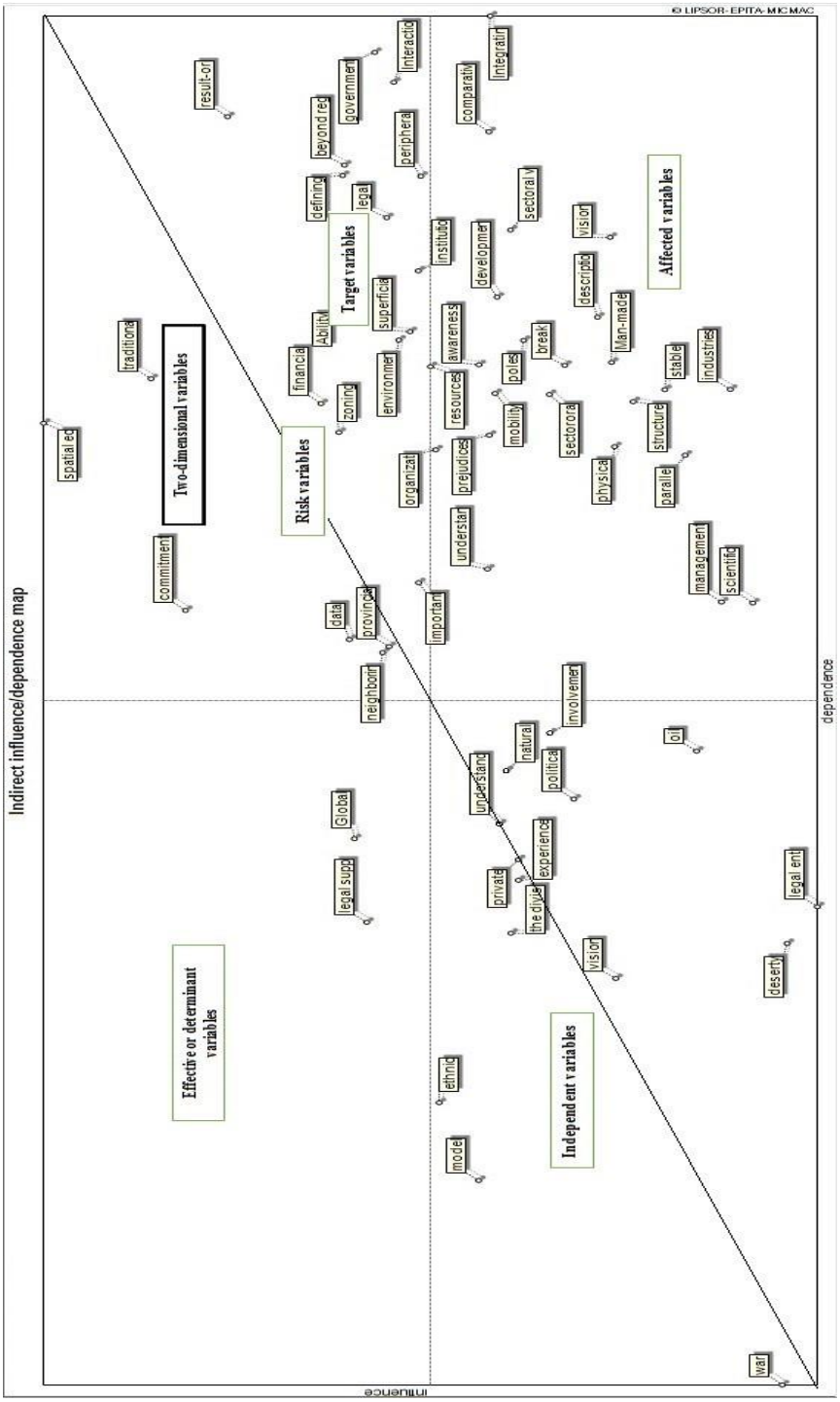

Figure 1 Distribution map of variables and their location on effectiveness–impression axis
Source: The researcher's calculations and MICMAC software analysis output

Risk variables are located near the diameter of the south-east area .These variables include the following cases: oil dependency, regional thinking, zoning, regional and national considerations, and political and security conditions in neighbouring areas. Risk variables can be mainly considered as the variables related to planning and security (Figure 2).

Target variables are located under the north-east diameter of the plane. In fact, these variables are the evolutionary results of the system and show the possible targets of a system. The variables in this group include the following: environmental, perspective, futurism, private partnership, land capabilities usage, economic performance in engagement with peripheral areas, management stability in planning systems, reliance on relative advantages, and compliance with authority (Figure 2).

Affected variables (also known as result variables) are located in the south-east area of Figure 2. These variables are strongly affected by the system and have a low degree of impression in the system. It can be said that most of these variables are related to social and spatial organization issues.

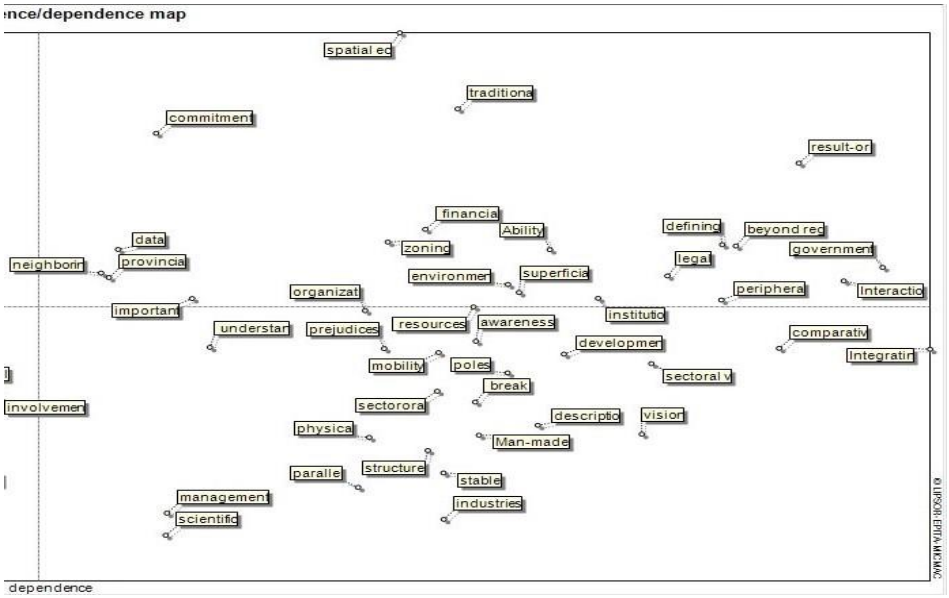

Figure 2 Distribution map of two-dimensional variables (target, risk and affected variables)

Source: MICMAC software analysis output, adapted from the right part of the Fig. 1

Factors with a high degree of effectiveness have a low presence in the north-west area of Figure 1. These include global variables, the legal entity of the land and integrated management. These are the most important effective factors in the spatial planning implementation approach as they play a much greater role.

Independent variables have low effectiveness and impression. They are located in the south-west of Figure 1. It seems that some of these variables have the system output nature.

The graph of direct relationships between the variables (in MICMAC software analysis output) shows that there are strong relationships between factors such as the political centre of the region, the interaction of economic performance beyond the peripheral regions, the north–south and east–west corridors, investment and financial resources of plans.

According to the results, the experts and Figures, some main factors can be recognized as the key effective factors in the spatial planning implementation approach. After studying their direct and indirect impacts on other variables and investigating single-factor graphs, the most important effective factors with a negative or positive impact on the spatial planning implementation in the south Alborz macroregion are: an integrated management system, spatial economy, attention to inter-provincial interactions, oil dependency and human resources. In Figure 3, ranking of factors with the most direct and indirect effects is displayed.

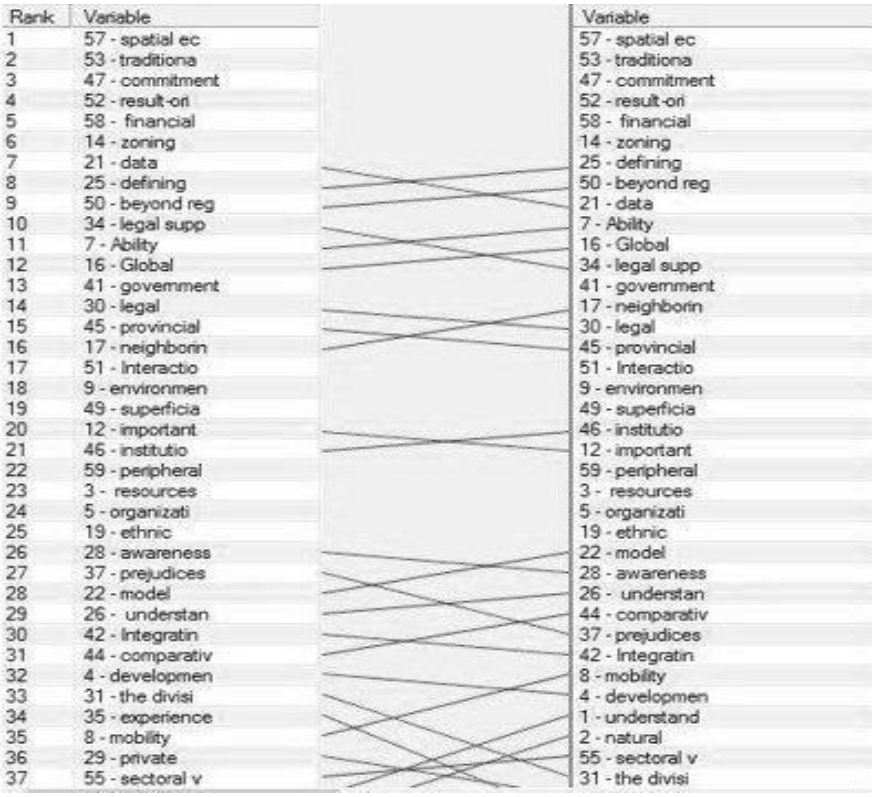

Figure 3 Ranking of variables' direct and indirect effects
Source: MICMAC software analysis output

DISCUSSION

Based on the ranking in Figure 3 and prioritizing the main effective factors from the output of the MICMAC software as well as the expert reviews, the results of show that lack of an integrated spatial planning system, lack of coordination between the two methods of regional planning and land planning, a weakness in the implementation power of spatial planning policies and dependency on basic resources such as oil are the drawbacks of a spatial planning implementation approach in the south Alborz macroregion. The lack of a clear and responsible authority for land management to direct spatial planning implementation is another obstacle in Iran. Although the formation of the National Spatial Planning Center based on the Council of Ministers' directive entitled 'National Conditions of Spatial Planning' is one of the solutions to change this situation, the lack of complementary implementation and regulatory institutions have caused the intended targets to be unfulfilled.

RECOMMENDATIONS

The study shows that lack of an integrated spatial planning system hampers spatial planning implementation approach in the south Alborz macroregion. Thus, this implies that trans-regional actions such as creating interactions and parallel inter-regional relationships[1] are required to make connections between different planning levels, both above and below, which should entail a mutual relationship. Reinforcing the connection between regions and creating spatial integration would lead to suitable national spatial implementation policies and solutions. Sectoral planning should also include regional and spatial effects, in order to maximize profits and to minimize loss, and planning and directing future developments using spatial structural analysis and sectoral planning.

Long-term recommendations

Based on the findings of this study, some long term recommendation are suggested, as follows:

1. To guide the implementation of spatial planning, a legal framework which makes the creation of tools and spatial planning policies possible in different spatial scales through consultancy and democratic methods should be developed.
2. To promote integrated land management, incentives and official permits should be used to assure the effectiveness and cooperation between all

[1] - Parallel connection refers to the connection among neighbouring provinces in creating inter-regional integration and, consequently, a connection among the provinces with a macroregional landscape and regional connections with the national landscape.

sectors and administrative boundaries, and between different levels of government.

3. Controlling spatial planning in regional and local levels to assure adherence to the rules, following the principles and methods of compliance, and promoting the actions and policies of jurisdiction. 'SPDSS network must be developed at [the] international level and local level to improve the development capacity' (Abdullah et al., 2005).
4. Controlling the spatial trend and the spatial planning impact using indicators and targets.

CONCLUSION

The need for a proper understanding of the spatial planning concept has led to the continuation of regional, component-oriented and non-strategic plans. Spatial planning in Iran has, theoretically and practically, been reduced to small spatial scales and has actually lost its macro, national and regional view.

Spatial planning needs implementation tools at the national level, and the ruling system should provide all the necessary requirements and use them in different areas, such as in military, economic, cultural and political arenas.

Land use attitudes and perspectives should be institutionalized within the territory. Preparing a document does not guarantee its enforcement. First, there should be collaborative participation during document preparation. Second, when prepared, it should act as a tool. This means that document planning should be the basis for better thinking about short- and long-term decisions.

ACKNOWLEDGEMENTS

The authors would like to thank the planners and faculties who helped with the analyses and for their responses to this study's questionnaire.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 27 - 38

ASSESSMENT OF BUBBLES IN THE MALAYSIAN HOUSING MARKET

Rohayu Ab Majid[1], Rosli Said[2], & Chong, J.T.S[3]

[1]UNIVERSITI TEKNOLOGI MARA, MALAYSIA
[2,3]UNIVERSITY OF MALAYA, MALAYSIA

Abstract
Property cycle and housing bubble have been a noteworthy subject of discussion since decades ago. The economic and business cycles have been closely associated with the property cycle as the economic and business factors have certain definite effects on the property market. At some point of the property cycle, the housing bubble will occur. The housing bubble is a trend of unreasonable increase of house prices where the increase is supported by factors that are not economics related. It causes the house prices to be intolerable in terms of housing affordability and the bursting of this housing bubble would lead to the crash of the property market. This paper focuses on using the economic indicators to identify the phases of the residential property cycle in Malaysia from the year 2000 to 2012. Having done so, housing bubbles were analysed using ratio analysis for the year 2012. The results show that housing bubble is yet to become a significant threat to our national property market as it only affects certain areas and housing types.

Keywords: Property cycle, housing affordability, housing bubbles, ratio analysis

Date Received: 5th April 2017
Date of Acceptance: 28th September 2017

[1] Senior Lecturer at Universiti Teknologi Mara. rohayumajid@salam.uitm.edu.my

INTRODUCTION

The existence of housing bubble has been a debatable issue in Malaysia. In relation to the housing bubble, the property cycle first has to be analysed in order to determine the possibility of a bubble in the housing market. Undoubtedly, the housing price in Malaysia has been increasing rapidly in recent years. As such, issues and concerns have been raised over the affordability and the property crash of the housing market. The objective of this paper is to determine the existence of property bubble in relation to a property cycle for the period of 1990 to 2012.

Several approaches have been previously conducted on this matter. For this paper, the indicators to construct the phases in a property cycle will first be identified. Then, the property cycle will be studied based on the economic indicators which will foresee the present and future economic performance. In this case, the study of the business cycle is considered to be one of the applications of economic indicators. By determining whether a bubble exists in our housing market, this prepares the market for any significant economic impact.

RESEARCH BACKGROUND

Property Cycle: Definition

The analogy of a property cycle is properly defined in the RICS (1994), in which the property cycle is defined as the observations of the rate of all property total return which show irregular but recurrent fluctuations which include other indicators that are fundamentals to the property activity. The surrounding, neighbourhood and types of property have always been the reason of the property cycles being unique and different (Witten, 1987). A property cycle has been defined relative to the business cycle. One of the very first studies done on property cycle was by Hoyt (1933) in the early thirties in Chicago. From thereon, many researchers followed suit and revised the analysis on property cycles.

Phases in Property Cycle

Majid and Said (2013) identify five different types of phases in a property cycle from various literature throughout the decades. From the literature of Witten (1987), the Property Cycle I is identified with four stages. It is described to be revolving according to the equilibrium line. Firstly, the adjustment phase will meet the line of equilibrium. From this point onwards, the demand phase begins with the need for supply in the market to expand. This phase positively attracts more development of properties in the market to furnish a supply for the demand. This would be known as the developmental phase. However, continued developments cause an excess of supply which leads to the next phase of overdevelopment.

Property Cycle II is discussed based on findings by Mueller and Laposa (1994). It has four phases; decline, initiation, expansion and contraction. It is said to be an improvement of the previous property cycle.

Property Cycle III is elaborated through discoveries by Bean (1996) that involve five phases. Taking into consideration the market elements, this cycle is a better reflection as compared to the previously discussed cycles. This property cycle focuses on the position of the phases in the real market and ignores the equilibrium line.

Property Cycle IV as conveyed by Yew (1999) has no equilibrium line and has four phases namely expansion, peak, contraction and bottom. It reflects the combination of Property Cycle I and II with no equilibrium line as illustrated by Property Cycle III.

Property Cycle V is explained through definitions by Pyhrr, Roulac and Born (1999). It involves only two phases which are peak and bottom. Seemingly simple, the cycle incorporated inflexion points, amplitude and duration of each phase.

Property Cycle VI is described based on studies by Price Water House Coopers (2000). It has four phases which are decline, expansion, peak and contraction. By adapting existing cycles, the market position is being identified at different phases.

From the cycles, all phases can be classified into three category which is the expansion, equilibrium and contraction (Majid & Said, 2013). In addition, Said and Majid (2014) studied the Malaysian housing cycle from 1990 to 2012, and found that the present cycle becomes the longest housing cycle in the Malaysian history.

Property Cycle Indicators

Brown and Kim (2001) used conventional spectral analysis techniques which analyse the evidence of cycles and co-cycles in property and financial assets where they have suggested that different indicators would behave differently over the four identified property cycle phases (recession, contraction, recovery and expansion).

In the local context, Chong (2006) shows that the indicators that are significant in determining the stages in property cycle are as follows:

a) GDP of all sectors
b) GDP of construction sector
c) Total loan by banking system
d) Number of residential property transaction
e) Malaysia House Price Index

Chong (2006) used bivariate analysis to determine whether the said indicators have significant relevancy to the construction of the property cycle. In her analysis, she concluded four phases which are boom, bubble, trigger and crash.

Said *et al.* (2014) further studied the Malaysian housing cycle and identified the impact of Asian financial crisis on the housing market. They found that the performance of the Malaysian housing market is determined by the housing finance and macroeconomic variables. They employed Vector Autoregressive Approach and Causality test to identify the relationship between the variables in the short and long runs of the housing cycle. They further concluded that the occurrence of shock during the Asian financial crisis severely affected the housing market performance.

Housing Bubble: Definition

A housing bubble is defined as the circumstances where the selling price of the property is high only by reason that it will be greater in the future without being justified by fundamental factors (Stiglitz, 1990).

Case and Shiller (2004) describe housing bubble as when prospective buyers are starting to accept the high house price that is too expensive for them in thoughts that they will be compensated by the great increase in value in the future.

Kindleberger (2000) claims that a bubble is a continuous distinct rise in the price of an asset or range of assets, with initial situations forming anticipations of further rises and luring more prospective buyers. This rise is usually followed by a financial crisis caused by the reversal of expectations and a sharp decline in price.

It has also been described as expectations being integrated with the price hike and it will continue to attract buyers to pay more to satisfy the expectation itself (Baker & Wurgler, 2002).

Most of the researchers managed to establish the housing bubble key concepts; the departure of prices from the fundamental value (Garber, 2000), a large drop in prices after the bubble pops (Siegel, 2003) and the market prices are not justified by fundamentals (Smith & Smith, 2006).

Xiao (2010) in his housing bubble research in China has described that without a doubt, housing prices cannot go up forever. When people perceive that prices have stopped going up, past support for their acceptance of high housing prices will break down, and housing prices will then fall due to the diminished demand.

A housing bubble is an ongoing house price elevation, driven by non-fundamental economic indicators which are purely stimulated by expectation and speculation of the players in the housing market.

Impact of Housing Bubble

The motivation to spend because of the increasing of household consumption is a positive situation for the economy. The growing house price motivates the consumer to spend, which increases the household's consumption (Baker, 2002). However, this is only perceived to be a short-term positive impact which would eventually present itself as mostly negative after the bubble has burst.

On the negative impacts, Thornton (2006) describes the effects of the housing bubble. He mentions that the harm created by the bubble spreads to labour because of unemployment and creates a loss of value to owners of capital, particularly in housing-related industries. At the individual level, many people are forced into bankruptcy. On the macroeconomic level, the bursting of the housing bubble can send the overall economy into recession or depression. Further into his research, Thornton (2006) adds psychological consequences as one of the effects of the housing bubble when the situation turns from home buyers being confident in their purchasing decision to home buyers being fearful of capitalism after the burst of a housing bubble.

At the burst of the bubble, the mortgage supplies would decrease and this would cause instability in the economy. According to Xiaojing & Sun (2006), bank lending is associated with real estate cycles and the bursting of bubbles, which results in significant non-performing loans, financial instability and crises in the economy. In funding the property market, banks and financial institutions would suffer overexposure and losses billions of dollars (Kallberg, Liu & Pasquariello, 2002).

According to McKibbin & Stoeckel (2006), what follows the house price fall is the decline in household consumption. Upon the burst, the consumer will be intimidated with less wealthy and control spending. In the local context, Said and Majid (2014) provide an understanding of the housing market and nature of house price variations as a result of the occurrence of shock in the Malaysian housing market.

Measuring Housing Bubble

Himmelberg, Mayer and Sinai (2005) explain how to assess the state of house price to identify whether the bubbles exist in the housing market and found that the house prices are more sensitive to changes in the real interest rate. Such approach was also employed by Xiao (2010) where he used ratio approach including the analysis of the house price-to-income ratio, house price-to-rent ratio and vacancy rate. For house price-to-income ratio, the purchasing power of home buyers is inversely proportionate to this ratio.

House-price-to-rent ratio is the relationship between the housing price and the rental rate. It shows how much house price has deviated from its real value. For vacancy, a higher rate would indicate that the unoccupied spaces amount to a struggling property market condition.

Another commonly used approach is the Vector Error Correction Model where values are compared with the equilibrium value taking into consideration some major economic determinants in an effort to determine the existence of a bubble in the housing market. By using the method, the long-term and short-term trends of housing price dynamics can be studied. The revised model by Chen *et al.* (2013) consisting of housing demand and housing supply equations. Chen *et al.* (2013) suggest that the equilibrium condition is when the demand of housing market is equal to the supply of housing market.

METHODOLOGY

Data Collection

The data are mainly based on the secondary data of macroeconomic indicators from the year 1990 to 2012 (annually). The indicators were used in the property cycle and housing bubble analysis. The main sources of data were from the government's official publications namely the Department of Statistics, Department of Valuation and Property Services and Central Bank of Malaysia.

Data Analysis

This study involves three stages of analysis. The first analysis was the Bivariate Correlation analysis through the Pearson product-moment coefficient of correlation using SPSS. This analysis was used to determine the indicators that have a significant relationship with the housing price by using Malaysian House Price Index (MHPI) as a predetermined indicator. The MPHI and other collected data of different indicators such as Gross Domestic Product for all sectors, Gross Domestic Product for Construction Sector, total housing loan approved, the volume of housing transaction, base lending rate and unemployment rate were analysed in a correlation matrix to study the strength of their relationships with the housing price. Only indicators with significant correlation were taken into consideration.

The second analysis was based on the indicators identified to have a strong relationship with the housing price. Thereafter, these indicators were studied together to determine the phases of property cycle over the projected period.

The third analysis was the determination of housing bubble in different geographical locations based on different types of housing in the year 2012. This was done by using the ratio analysis which was commonly used by researchers such as Xiao (2006). The ratio analysis includes median house price to annual median income and average house price growth rate to GDP growth rate.

RESULTS

Correlation Matrix: Indicators

Table 1 shows the values in the form of the correlation matrix for the predetermined indicator of MHPI and the selected indicators to be tested for significant value in the housing price.

Table 1 Correlation Values

Indicators	**r-value**
GDP for all sectors	$r(13) = .96, p < .001$
GDP for construction sector	$r(13) = .97, p < .001$
Total housing loan approved	$r(13) = .95, p < .001$
Volume of housing transaction	$r(13) = .97, p < .001$
Base lending rate	$r(13) = -.068, p = .826$
Unemployment rate	$r(13) = -.472, p = .103$

The correlation value shows that only the base lending rate and unemployment rate have no significant correlation with the Malaysian Housing Price Index. The GDP for all sectors, GDP for the construction sector, the total housing loan approved and the volume of residential transactions all have a significant positive correlation to the MPHI and all the coefficients are close to a linear relationship.

Housing Cycle: Phases

Figure 1 shows the trend of housing cycle from the year 2001 to 2012 which was plotted from the annual price growth rate. The results imply that the main contributory factors that affect the housing cycle during the trigger phase (2001-2004) were the tax relief and the waiving of the Real Property Gain Tax (RPGT) and Stamp Duty. During the Stagnant period (2004-2007), the main contributory factor was mainly the tax incentives given by the government. However, during the Minor Crash (2007-2009), the negative growth occurred as a result of the Subprime Crisis where the government started to introduce the stimulus packages as well the liberalisation of cement industry. Finally, during the boom period (2009-2012), the price increased significantly resulted in the lifting of RPGT exemption, the reduction of the loan-to-value ratio to 70% and the second introduction of the stimulus packages. The trends imply that government intervention is crucial in each phase of the housing cycle in order to stabilise the housing price.

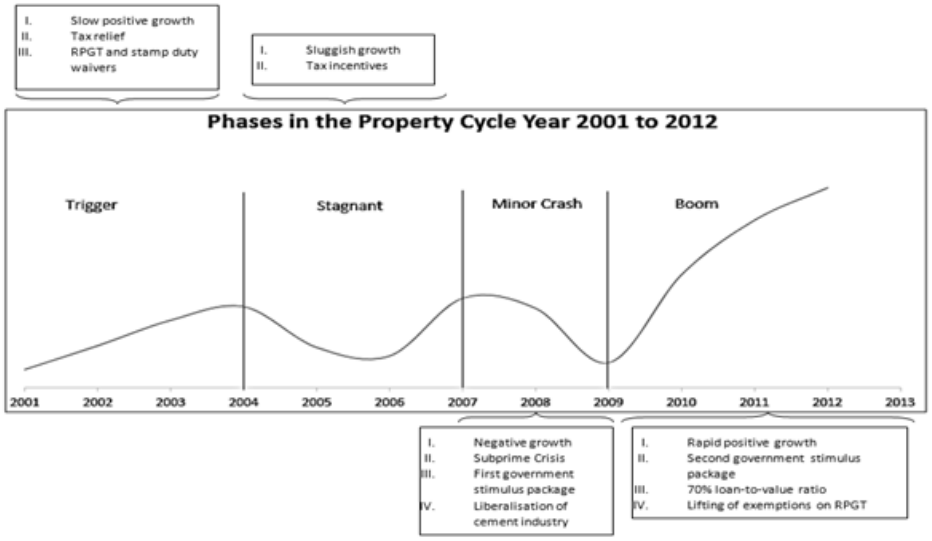

Figure 1 Housing Cycle

Housing Bubble: Price-to-income ratio

The indication of a housing bubble can be analysed using the price-to-income ratio and the average house price-to-growth of GDP ratio.

For the price-to-income ratio, the study was subjected to the availability of data for each state. Therefore, five states were selected for this purpose. The type of housing taken into consideration is 1-1½ storey terrace, cluster, condominium and flat. According to the World Bank (1993), the ratio of 3 to 6 is normal while higher ratios are indicative of a housing bubble. Higher ratios could indicate the increase in difficulties to meet mortgage requirements and this increases the pressure on the housing market.

Table 2 shows the significant ratio of median house price to median annual income in each selected state. The ratio higher than 6 indicates the existence of housing bubble.

Table 2 Ratio of median house price to median annual income of the selected states (2012)

Name of State	Type of Housing		
	1-1½ storey terrace	Cluster	Condominium
W.P. Kuala Lumpur	-	-	6.19
Johor	-	10.51	-
Penang	-	-	9.13
Sabah	-	-	8.73
Sarawak	6.98	-	7.12

Source: Property Market Report and Department of Statistics (2014)

Housing Bubble: Average House Price-to-Growth of GDP ratio

Table 3 shows the ratio of the growth of average house price to the growth of GDP. Again, the analysis was subjected to the availability of data and ten states were selected for this purpose. The growth in house price should have been less than the economic growth (Himmelberg, Mayer and Sinai, 2005). The ratio of 1 to 2 forms the warning line for housing bubble while any ratio more than 2 is indicative of a housing bubble.

Table 3 Growth of Average House Price to Growth of GDP Ratio

Name of State	Ratio
W.P. Kuala Lumpur	2.0
W.P. Labuan	-0.4
Selangor	1.5
Johor	3.2
Penang	4.2
Perak	0.7
Negeri Sembilan	1.9
Malacca	1.6
Kedah	1.0
Pahang	0.8

The results show that not all the selected states have a ratio of higher than 2. Most states are within the normal range, and only Johor and Penang show indication of the existence of a housing bubble. The results signify that bubble only exists in certain states. The impact of such analysis suggests that if the bubbles continue to reach a full-blown state in years ahead, the housing market will fall into another crisis due to oversupply.

DISCUSSION

The first part of the study determines the relevant indicators influencing the phases of the residential cycle where the results showed that only certain economic indicators have significant influence. The identified indicators are then used to study the phases of the residential cycle in Malaysia from the year 2000 to 2012. From the findings, it can be concluded that from the year 2000 to 2012, the housing market experienced the phases of trigger, stagnant, minor crash and boom. The results imply that the residential property cycle has yet to complete its full swing of the cycle within the study period. Hence, judging from the boom phase, the housing bubble should still be at a considerably low level.

Also, it is noted that some of the indicators may drive the housing market slightly earlier or later than the other indicator because of their leading, lagging or coinciding characteristics. Nevertheless, the time of response has only shown a year or two years of difference before reaching the trend of the following phase. GDP proved to be the leading and coinciding indicators which command the most

sensitive response to the changes in the market. On the other hand, the housing price picked up slightly at a slower pace because of its lagging characteristics. The third part of the analysis revealed that most of the states in Malaysia are still at a normal line in terms of the occurrences of the housing bubble.

CONCLUSIONS

The housing price in Malaysia had been on the rise from the year 2009 to 2012 but noticeably with slower growth in recent years. At the same time, there have been anticipation and expectation on the occurrences of the housing bubble in the residential market in states like Kuala Lumpur, Johor and Penang where the housing price has been growing positively at exponential rates. The cycle follows the trend observed in other developed countries where the cycle usually reaches its full swing between 8 – 10 years.

The property cycle shows that Malaysia is experiencing boom phase starting from the year 2009 to 2012 but expects to slow down afterwards. As such, Malaysia is not supposed to be experiencing a full-blown housing bubble since it was still in the boom phase up to the year 2012. Thereafter, the ratio analysis shows that the occurrences of a housing bubble are not significant at the national level but only show traces at the micro level of certain states and housing types.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 39 - 50

HOUSING RECONSTRUCTION IN A CONFLICT ZONE –LESSONS LEARNED FROM AWARAN, DISTRICT IN BALOCHISTAN, PAKISTAN

Noman Ahmed[1]

Department of Architecture and Planning
NED UNIVERSITY OF ENGINEERING AND TECHNOLOGY, KARACHI, PAKISTAN

Abstract

Regions affected by conflict and violence become difficult locations for undertaking routine management and rebuilding. However conditions often arise where input from various stakeholders for relief, rehabilitation and institutional re-vamping become unavoidable. Research and experiences from different contexts inform that outcomes of such interventions have varied results due to unpredictability of contextual conditions, approaches and methodologies adopted for planning and implementations, capacity of personnel involved, available resources and interests of concerned institutions. Awaran district in Balochistan has been impacted by conflict and violence for many years. The impoverished region, apart from social and political turbulence, is recovering from a devastating earthquake that struck the district in September 2013. This paper examines two development interventions in the region; one undertaken by the district administration to streamline the development work through a state sponsored housing reconstruction project and the other by Urban Resource Centre (URC) in collaboration with local communities. Field research for this paper was done during 2014-2015 and comprised review of records, informal discussions with government staff, military officers, community members and working staff of NGOs in the area. After analysing the key findings of these two initiatives, it was found that government sponsored housing reconstruction projects experienced limited success due to usual bureaucratic hurdles and political uncertainties. The community led initiatives were more effective, simple and easy to apply.

Date Received: 24th December 2016
Date of Acceptance: 11th August 2017

[1]Professor at NED University of Engineering & Technology, Karachi. Email:nomaniconn@hotmail.com

BACKGROUND

Awaran District is located in the south of Balochistan province, at a location of 1,095 km (aerial distance) south east (225 degrees bearing) of Pakistan's Capital Islamabad. It is a sparsely populated district, with an estimated population of around 174,350, as found in 2014, scattered over an area of more than 29,510 square kilometres (UNICEF, 2011). It comprises three sub districts (Tehsils) namely Mashkai, Awaran and Jhal Jhao. It was created as a separate district on 11 November 1992 and is considered the poorest district in the province, in spite of being the fourth largest district in terms of area. The area features lowest on all development indicators, be it education, health, food, economy and especially security. The district, alongside other locations in the region, is gravely impacted by insurgency and conflict since several years. Factions of local insurgent groups – that demand greater political rights and autonomy – resort to violence upon opponents and law enforcement agencies. Since many years, para military troops and army contingents are deployed to maintain peace and prevent conflict (PIPS, 2010; The Nation, 2015).

EARTHQUAKE 2013 AND AFTER

Earthquake Damage

On 24th September 2013, a 7.7 Richter magnitude earthquake hit the area followed by another one on 28th September 2013. The epicentre of earthquake was 66 km north-northwest of Awaran. The calamity killed around 500 people, affected approximately 27,000 households, 138,372 people and destroyed 19,688 houses in the area (Figure 1). However, owing to the security risks in the area, providing relief and following it up with rehabilitation became the most difficult task for the provincial administration as well as national and international NGOs. The overall situation resulted in people leaving Awaran for other areas. These people have been already hard pressed for food and aid, and were compelled by circumstances to leave their homes for they could neither accept aid from the security forces, due to fear of being categorized as traitors by the insurgents, while aid from the latter was being blocked by the security forces. To add to this, the government's refusal to allow INGOs from conducting relief work in the area, in light of their safety and security, further deprived the residents from any possible aid (UNOCHA, 2013).

Figure 1 Earthquake damages in Awaran during September 2013

Many households took the decision of leaving Awaran and re-locating in Karachi and other parts of the country. Discussions with community members revealed that possible danger of more earthquakes in the near future was one key reason to move out to other locations. The people were also unhappy about the prevailing security situation. Frequent rounding up of the youth by law enforcing agencies and alleged use of torture to extract information about insurgents were commonly cited reasons to leave the area. The extreme state of underdevelopment and poor response from government was another shared observation by the people. They were of the view that while some responses to disaster were being facilitated, the district had been neglected by administration in respect to provision of essential infrastructure and services. For example, no road worth the name existed between Gajjar sub district and Awaran. People travelling for emergency health care assistance had to hire special vans or jeeps to transport the sick, including expecting mothers, to a health care facility to the nearby districts. Travelling during night time was absolutely impossible due to poor road condition and fear of insurgents' attacks.

Planning and Development Initiatives by Government of Balochistan

The Balochistan government launched a rehabilitation and redevelopment project in Awaran in October 2013. The project comprised the redevelopment of the disaster stricken areas in the wake of the 2013 Earthquake, and was initiated after the then Deputy Commissioner of Awaran, Mr Aziz Ahmad Jamali approached NED University to take up the task of conducting research and contribute to rehabilitation works in the identified sites in the district. The partnership began in March 2014, when the Government of Balochistan invited the Earthquake Engineering Department of NED University and Provincial Disaster Management Authority Balochistan to venture into seismic resistant construction to avoid damages due to future earthquakes in the area.

The tasks included understanding the existing profile of Gajjar and its documentation to determine the possible planning interventions for Gajjar redevelopment. Gajjar had faced extensive damage in the wake of the earthquake

and although reconstruction had already begun, the pace was extremely slow, and majority of the amenities and important structures are currently non-functional.

For an extensive survey of the area, NED University engaged a survey team that visited the area several times to accurately document all existing plots, constructions, building functions, damage assessment and conduct observational studies. A team from the Department of Architecture and Planning, NED University and Technical Training Resource Centre (TTRC) (a community oriented support organization) also joined in and visited the place to carry out photographic documentation, conducted interviews with the residents and other stakeholders to expand understanding about the current context and gain first-hand experience of the area. Analysis of these studies and surveys provided a basis for redevelopment plan of Gajjar area.

House Re-Construction in Awaran (HRA)

After the September 2013 earthquake in Awaran, efforts began to initiate housing reconstruction works in the affected parts of the district. Federal government and Balochistan administration jointly prepared a housing reconstruction project for the district. Rs. 4 billion (US$ 42,105,263) were allocated to reconstruct 16,000 houses at an estimated cost of Rs. 250,000 (US$ 2,631) per house. Federal government agreed to provide Rs. 2 billion (US$ 21,052,631) to the project. The project was designed to promote owner driven construction. It may be noted that owner driven housing reconstruction works were done earlier in the country after 2005 earthquake in Khyber Pakhtunkhwa province and Pakistani Administered Kashmir on similar patterns.

A total financial assistance of Rs. 220,000 (US$ 2,315) was kept to be paid in three instalments through the percentage ratio of 40:30:30. The project also undertook to provide solar panels to all the completed houses as electricity was marginally available in the district. Model units were designed and tested for seismic performance at the shake table facility in NED University. Till January 2015, housing grants were released to 12,600 beneficiaries. 1,334 were issued second tranche while 81 were released third and final instalment. Field visits to the locations informed that 3,501 houses were under construction. 25 model houses were also constructed by project administration for those beneficiaries who requested for construction assistance. The people complained about the limited availability of construction material in shops / warehouses / sale points in the district. They were also unhappy about the long and cumbersome process of beneficiary verification and banking procedures. As bulk of Awaran district was an under developed territory with limited economic activities, very few bank branches operated in the region. Due to the chaos of earthquake, most of the people lost / misplaced their computerised national identity cards (CNICs). Therefore, verification of beneficiaries had several procedural delays that caused inconvenience to the people (Figure 2).

Figure 2: Housing Re-construction in Awaran

The project administration team, under the administration of Deputy Commissioner Aziz Ahmed Jamali, made efforts to improve the design and delivery of the project components. Based upon the proposed designs prepared by architects and engineers from the university, the project team prepared visual material and brochures for improved construction. A field team was constituted to visit the homes under construction and offer technical guidance and help. Documentation was explained to house owners and facilitation was extended to assist in different stages of construction. Village development councils (VDCs) were formed to oversee the development work in coordination with the government functionaries. The house owners were given options to decide upon the design and material of construction, after extending full guidance and support to estimate prospective costs and potential benefits. It was found that majority of houses were done in cement concrete blocks with steel reinforcement. Masons were trained and connected to home grant beneficiaries for enhancing the quality of construction. Inspection visits by architects and engineers from the university were done to help identify emerging problems and to seek remedial actions. The project slowed down after March 2015 when the project administration team was changed by Balochistan government, apparently under the influence of local politicians who intended to exercise control on the allocation and spending of resources. (Figure 3).

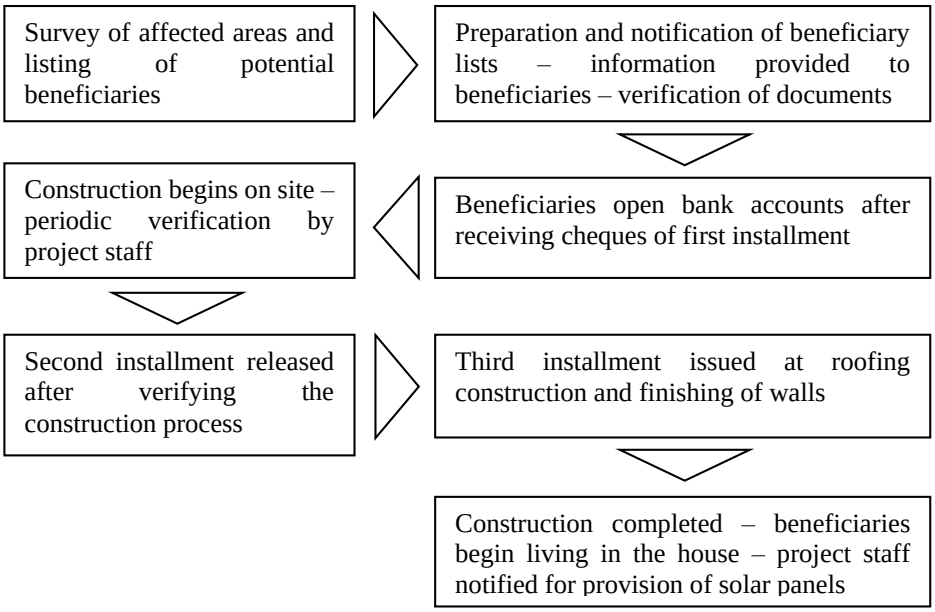

Figure 3 Process diagram – housing reconstruction in Awaran
(HRA Project by Government of Balochistan)

Awaran Earthquake Rehabilitation Support Project

The Urban Resource Centre (URC), with the assistance of Asian Coalition of Housing Rights (ACHR) and Orangi Pilot Project (OPP) launched a rehabilitation project in the aftermath of September 2013 earthquake. Several visits were made by URC team to Awaran and meetings were held with the affected communities. An assessment of the damage was done with an objective to design an appropriate project to effectively benefit the impacted communities (URC,2015). From the situation reviews conducted by URC volunteers, it was found that basic construction material was in short supply. People possessed the willingness to contribute labour and needed basic training in construction trade. It was found that bulk of the damaged houses collapsed as there was neither a frame to support the roof nor a proper foundation. Mud, stone and palm leaves were abundantly available which were used as common construction material. The earthquake had also destroyed the water supply infrastructure that required instant rehabilitation (Figure 4).

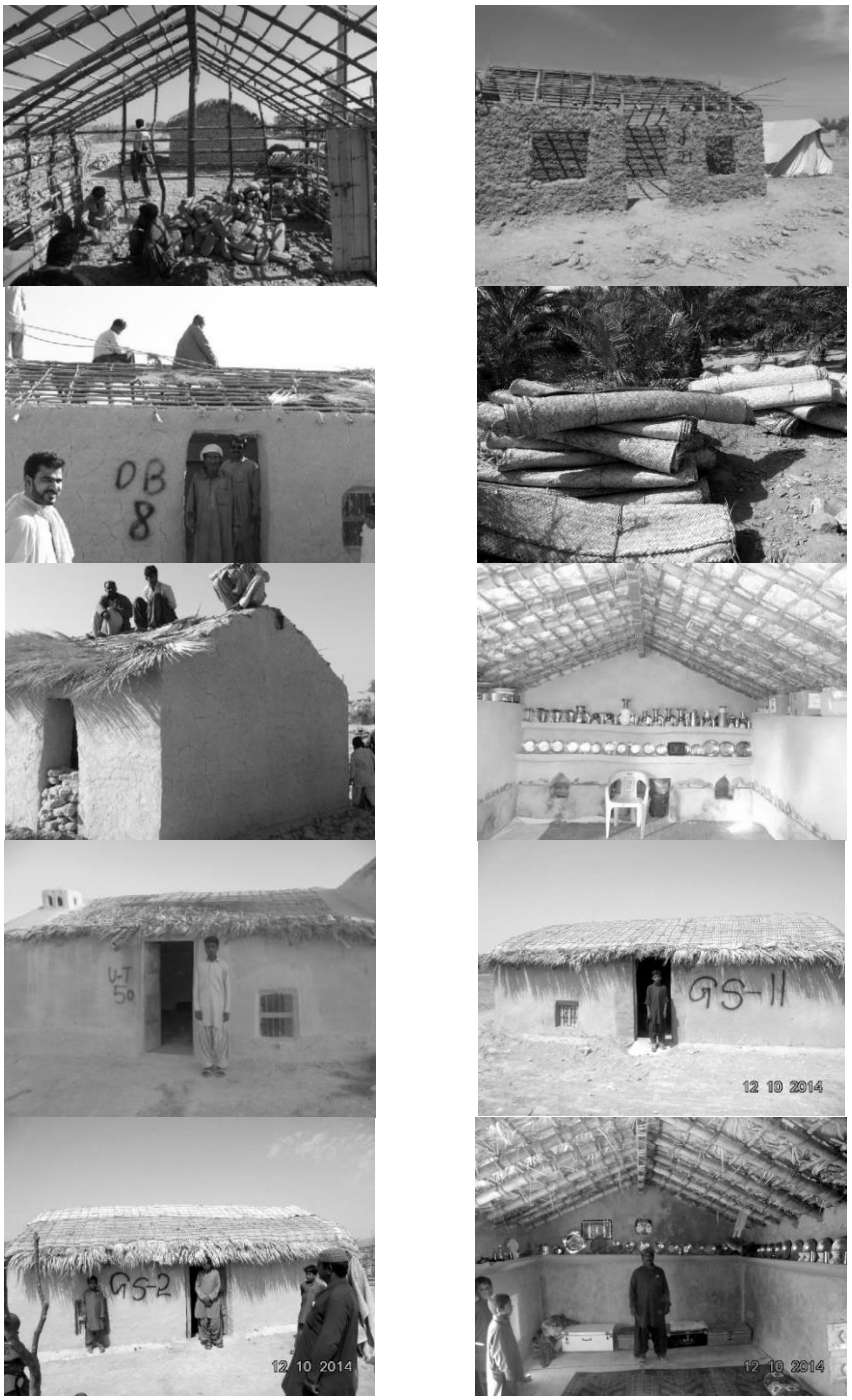

Figure 4 Awaran Rehabilitation Support Project

URC team visited many villages and had dialogues and discussions about the planning and execution of the project. Local school teachers, and other literate and aware folks, came forward and mobilised the community effort to manage the project in a scientific manner. URC team procured truckloads of roofing materials and tools from Karachi and periodically transported it to the designated locations. Bamboos for main support and cross ties, steel beams, plastic sheets, palm leaf mats for roof and ropes were the main items used in the house construction. Survey of affected houses / clusters were done by the community groups with technical assistance from URC. Households were mobilised to undertake construction after receiving roofing material from central distribution point within the chosen location. Household members transported the material to the site of construction on their own and began construction. Community groups monitored the process and prepared evaluation reports for onward transmission to URC. They also kept record of the supplied material and future needs. Documentation of construction process, completed houses and problem faced were done. URC team continued to visit to provide technical backstopping that was needed from time to time. In addition to the support in construction of these one room houses, URC team provided assistance in rehabilitating and constructing new tube wells to address the problem of water supply. Tools such as mono wheel trolleys; implements for cutting, digging and mixing; water pump machines, water storage tanks, pipes and other spare parts were also provided by URC. With the average investment of US$ 200/= per house, a total of 1,125 houses were constructed, 40 hand pumps repaired and 29 tube wells installed. The mobilised community groups continue to oversee and maintain water supply infrastructure and extend assistance to house owners in need of any follow up repair (Figure 5).

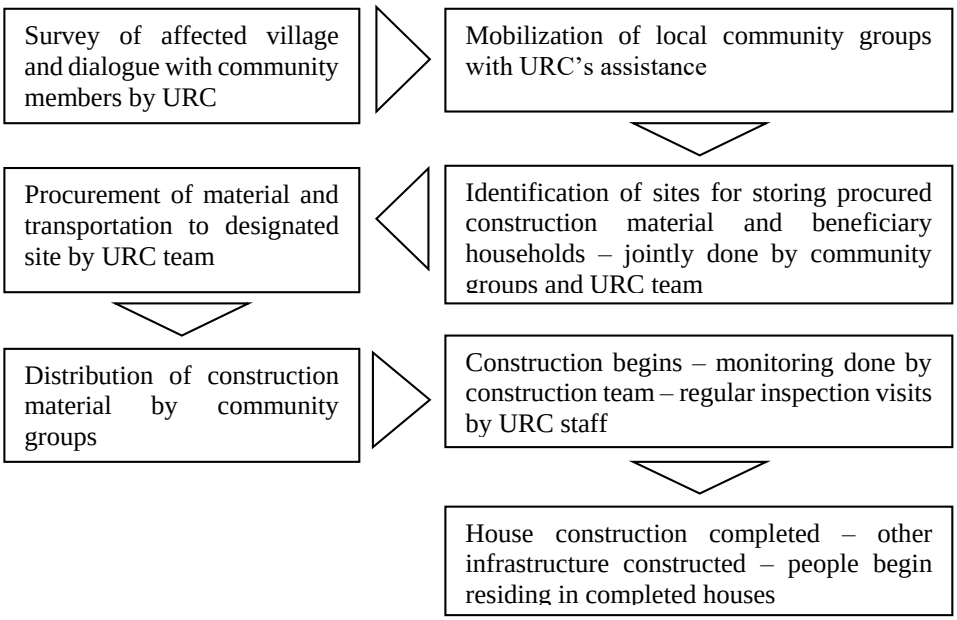

Figure 5 Process diagram – Awaran Earth Quake Rehabilitation Project by URC

ANALYSIS

Institutional Arrangements for Rehabilitation

The review of documents, feedback from community and members of civil and security administration revealed many important points. There was a feeling of mutual distrust among the three categories of stakeholders that caused suspicious around HRA design and delivery work. The security agencies were interested to strongly scan each and every potential beneficiary of the assistance before the project implementation could take off. They were of the view that many members of the community had clandestine links with the lurking insurgents. To maintain peace in the area and to enable them enforce the write of the state, such folks must not be entertained in the housing reconstruction work.

The district administration had the objective to complete the rehabilitation work in the stipulated time and in follow up of the general conditions. They were generally satisfied if and when the communities cooperated with them in swift facilitation of rehabilitation work. The district administration also attempted to resolve procedural problems such as loss of CNICs, quick opening of bank accounts and extending services of masons. It may be noted that for many locals, the interface with a bank was the first in lifetime experience. It caused problems when the people were not able to abide by the pre-requisites of banking procedures and documentation. The design and delivery of 16,000 houses in the allocated time, with measures of improved design and

construction, were the main focus of district administration. Some of their staff was of the view that it would be impossible to objectively ascertain the alleged connections of the community youth with the insurgents. Porous and spread out geographical terrains, intertwined social relationships and use of coercive power by insurgents to win over informers and sympathizers were some of the reasons in this regard.

The community members, especially those who were to receive relief through the project, were generally receptive to approaches of rehabilitation. However, they were concerned about the precarious law and order conditions that prevailed in the area. The people believed that conflicts between insurgents and security agencies needed a quick and effective resolution for the success and sustainability of the house reconstruction programme. Community blamed that since they are the only stakeholder who are permanently stationed in the territory, they receive undesirable treatment from both the conflicting parties. Many young people had gone missing, believed to be taken into custody by the security agencies or kidnapped by insurgents. The environment of unpredictability and fear was unsuitable for any rehabilitation effort to deliver sustainable results.

Technology of Re-building

The government led programme relied on the orthodox construction in cement concrete block with proper reinforcement added to make the structures seismically safe. The options generated by university staff also include reinforced mud construction, but the general inclination of government functionaries and field teams were more towards cement construction. This option was dependent upon material that was to be procured from outside Awaran, and required input of trained masons and supervisors for proper construction. Cement construction was also found to be not climate friendly. However, as believed by some community members, cement concrete house was perceived as a higher value social and economic asset compared to the mud houses.

The houses constructed with URC's assistance made use of an improved version of design and construction at the lowest possible cost. The introduction of bamboo and steel brace beams added firmness and strength to the structure. The frame was so devised that it could blend well with mud wall construction. The time taken for construction was about 4 – 6 weeks. It was believed to be reasonable and helped utilize community energies in an effective way. Materials had to be procured from outside Awaran but the process was smooth and time efficient as no government procedural work was involved in the process. The project had the potential to reach out to large number of affected areas with very low cost. It also generated a modified option of new construction wherever needed.

Re-visiting Pre-requisites

The sustenance of rehabilitation projects and initiatives depends upon a functioning administration, availability of essential services such as water supply and electricity, basic security, and the hope that a post rehabilitation situation shall offer a loveable option to stay in the area. Awaran offered a very challenging context in respect to essential living conditions. The surrounding episode of insurgency and the linear response of security forces of nabbing and whom they considered 'suspicious' or 'collaborators of insurgents', left little room for a livable option. Despite the fact that Awaran was extremely underdeveloped, the pre requisite to any kind of physical development remained elusive in official debates of social and strategic issues.

A usual political process, capable of representing the views and voices of local people is a fundamental pre-requisite in sustaining the initiatives in rehabilitation. The people demand the presence of a 'government' that is able to listen to their day to day grievances and is able to devise a timely solution to their immediate problems. Functional absence of a capable and potent local government is also a major hurdle in the smooth management of the area affairs. People question whether Awaran will continue to benefit from any governmental input, once the execution of projects or other efforts related to earthquake rehabilitation were concluded.

Lessons Learnt

Awaran presents a complex case for initiating and sustaining rehabilitation and development efforts. There are a number of fundamental social, political and administrative issues that must be settled before any planning and development effort is launched by the government and other stakeholders. From the review of literature and dialogue with the people, it was evident that the concerns that caused insurgency and civil disobedience can be resolved through a constitutionally mandated political process. In the present situation, this initiative was found missing, replaced by a military option. It is believed that a valid political process has greater likelihood to restore peace and order that shall enable rehabilitation process to germinate firmly, since the ownership and responsibility of the same shall be proudly held by the people of the area.

The two development and rehabilitation interventions had their respective potentials and constraints. By nature, government approaches are stereo typical, less innovative, system and procedure driven and expensive. The HRA project was no exception. There also remained possibilities of getting influenced by external actors, security forces operational in this area being an example. The relative efficiency can be only acquired if and when a sincere and capable administrator is at the helm of affairs. This was exactly the case. When an efficient and result oriented Deputy Commissioner continued to supervise the project, the effort moved on fast. Sadly, the transfer of the incumbent officer led

to a near complete retardation of the project since mid-2015. Very little progress could be seen on the designated sites. The input of design innovation from the university professors and scholars made headway when there was an appreciation by the deputy commissioner. This very useful tie was instantly severed after the officer got transferred.

The URC driven effort was a useful effort of a non-governmental actor that understood the context and dynamics of the area well. The project was able to articulate the target group well due to deeper interaction with the community. The targets were successfully met as there was no red tape in the process. Procurement of material, imparting of essential training, management of construction process, quality control, reporting and record keeping were done due to constant vigilance of URC team and community activists. However the project was entirely dependent upon the received financial grant from URC's donors. While the community was willing to extend the project to more households, the availability of funds, on the same terms and conditions, was not possible. Also the government is generally not willing to adopt and replicate such projects due to stark differences from bureaucratic norms. The absence of public tendering of works, lack of subscription to official designs and nonexistence of official oversight were some reasons that prevented this effort from being adopted by the government. But perhaps, this freedom exercised by the URC team, was the key to the successful planning and implementation of the project. The project may consider revisiting its own success to devise the ways and means to transform the project into a sustainable initiative in the area. A core lesson for similar contexts across the world is to rely on community led re-development processes – as demonstrated by URC – for greater outreach as well as time and resource efficient outputs.

ACKNOWLEDGEMENTS

The author extends his gratitude to Urban Resource Centre and Deputy Commissioner Awaran for sharing records and facilitating in field work.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 51 – 62

URBAN SPATIAL PATTERN AND CARBON EMISSION INTERCONNECTIVITY IN A SUB-SAHARAN CITY, NIGERIA

Solomon Dyachia Zakka[1], Ariva Sungandi Permana[2], & M. Rafee Majid[3]

[1,2,3]*Department of Urban and Regional Planning, Faculty of Built Environment*
UNIVERSITI TEKNOLOGI MALAYSIA
[1]*Department of Urban and Regional Planning, School of Environmental Studies*
NUHU BAMALLI POLYTECHNIC, ZARIA-KADUNA STATE, NIGERIA

Abstract
This study analyses the spatial pattern of Kaduna City in Sub-Saharan region and its vicinity to ascertain its influence on urban interaction and implications towards carbon emission. It employed a questionnaire-based research for the collection of socio-economic, traffic and spatial data. Meanwhile, spatial data was derived in secondary form from relevant organizations. The study reveals a steady increase in the built-up areas which covered 17,121 hectares representing 53% of the total area of the city. It also identified a mono-centric land use pattern for the city. The interconnection between the city centre and the residential areas has resulted in high traffic volume during the morning and evening peak hours on working days. The study also found that carbon emission at points along major routes in the city ranges between 1169 to1884 ppm. Considering the present performance of the city, the study suggests to adopt traditional red-ocean strategies, which are maximizing the carbon sequestration through optimizing urban ecology while minimizing the need for motorized transport using urban planning principles.

Keywords: Spatial pattern, emission, carbon sequestration, interconnectivity

Date Received: 11th April 2017
Date of Acceptance: 25th August 2017

[1]Student at Unversiti Teknologi Malaysia. Email: zakkasolomon2008@yahoo.com

INTRODUCTION

The urban spatial pattern is a fundamental reflection of a city to accommodate urban growth and functionality over time (Linard, Tatem & Gilbert, 2013). Gupta (2014), asserted that the urban land use is one of the important determinants of urban pattern and its activities. The most visible consequence of the connectivity and interplay between different urban land uses is reflected in the traffic generation that may encourage and boost socio-economic activities (Permana, Aziz & Ho, 2015). In a developing country like Nigeria, the land use system is strongly affiliated with the road transport system, the emphasis has always been on how to enhance the mutual benefit in order to enhance the interaction of activities for the common good. However, in recent years the focus towards land use and transport has been tilted to embrace the component of the environment and climate change. On the climate change co-benefit approach from different sectors, Permana et al. (2015) developed the nexus of land use, transport, and environment as shown in Figure 1.

By considering the nexus model, it is estimated that 22% of greenhouse gas emission comes from the transport sector as confirmed by Freire (2013), while further breakdown shows that motorized transport contributes to emission release for approximately 90% of CO_2 emission (UNEP, 2012). In some developed countries, researches have revealed that changing land use pattern may likely be an essential element in reducing greenhouse gas emission from the transport sector. For example, a study of anticipated impact of land use on CO_2 emission shows that a 60% shift in new residential growth to compact patterns in the USA may help reduce carbon emission by 7% to 10% (Ewing et al., 2008). Similarly, the Global Opportunity Network (2016) pointed out that the transition of cities can impact positively on reducing air pollution and carbon emission. Furthermore, emphasis on emerging economies of third world countries shows that major portions of urban land use patterns can still be easily influenced towards the reduction of future automobile transport dependence and its ills.

In many developed countries of Western Europe and Northern America, as well as rapidly developing countries of South-East Asia, an integrated approach in harmonizing land use and transport towards sustainability and carbon emission reduction has already been entrenched through the green growth concept (Badoe & Miller, 2000; Frank, 2000; Shaw & Xin, 2003). However, the developing countries of sub-Saharan Africa are still bedevilled with the challenges of weak land use planning and development control as well as uncoordinated transport system that are capable of generating high amount of air pollution at the local level and leaving large carbon footprint on the global front. The current land use pattern of many urban areas in sub-Saharan Africa can be associated with the land use planning system inherited from their colonial masters. For example, Aribigbola (2008) asserted that the Nigerian planning

system was cruelly outdated, and was anchored on the 1946 Act which was a product of 1932 town and country planning act in the United Kingdom.

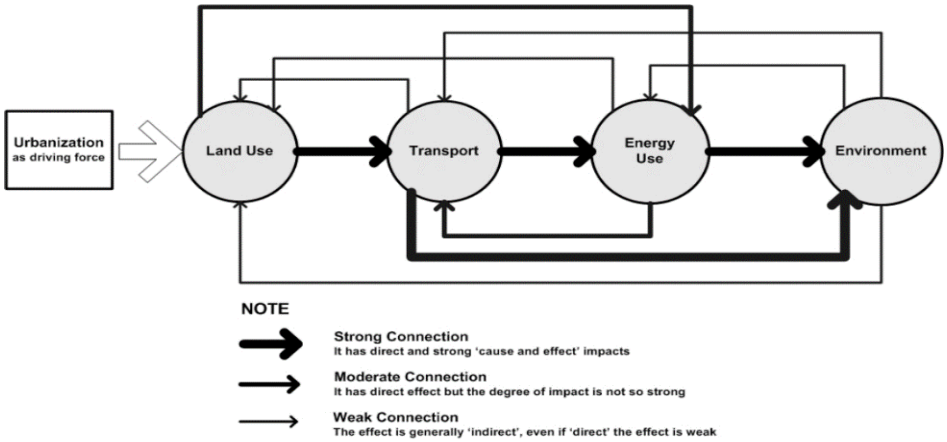

Figure 1 Land use, Transport and Environment Nexus
Source: Permana et al.,2015

One major challenge facing many African cities is the mono-centric land use pattern which is characterized by the over concentration of activities at a single central business district. This current trend of African urban land use pattern and growth have daunted urban development. Furthermore, it increases dependence on fossil fuel automobile, thus increases emission. It, therefore, has attracted global effort in the ongoing campaign on climate change as identified by Angel et al. (2005) and Stocker (2014).

The aim of this study is to analyse the spatial pattern of Kaduna city and its vicinity to ascertain its influence on the urban mobility pattern and its implications towards carbon emission. In order to achieve the aim, the following objectives were set out, which are to identify the spatial pattern of the city with regard to its land use arrangement, to assess the level of commuters interaction and to ascertain the volume and direction of traffic flow resulting from commuters interaction in the city, to ascertain the quantity of CO_2 emission stem from the traffic flow, to establish the relationship between the traffic flow and CO_2 emission, and finally to come up with functional recommendation based on the findings of the study.

RESEARCH METHODOLOGY

Kaduna City, which is the study area, was founded in 1907 by the British colonist and was made the capital of Northern Nigeria region in 1917. Kaduna urban area with a population of 1,139,578, based on 2006 census figure (FGN, 2007) was

ranked third in Northern Nigeria with respect to population size after Kano and Abuja.

Both primary and secondary data were collected to support the analysis for this study. Kaduna urban area Landsat imageries were retrieved to show land cover/land use trend from 1982 to 2015. Emphasis was given on the trend of urban growth through the expansion of the built up area. A digitized map was used to depict the land use pattern of the city and a breakdown of land use categories for 2015. Parah Konsult, a consultancy firm, has supplied the digital data in ArcGIS format, and analysis was carried out using ArcGIS 10.2 software. In order to generate traffic data to understand the weekly and monthly trends as well as peak hours of traffic flow, a non-intrusive technique based on manual counting of traffic using tally sheet by trained research assistance was used. Four selected points along the major routes leading to the city centre were used for the count. Similarly, CO_2 emission data generated along major routes leading to the city centre were obtained from Kaduna State Environmental Protection Agency (KEPA).

In order to ascertain the level of commuters interaction between various residential neighbourhoods and the central area, a questionnaire survey was conducted on a sample of n= 600 from the general population of N= >1,000,000. Commuters' daily trips were considered across the city, taking into cognizance the population as a parameter for the number of trips generated by each residential neighbourhoods. Analysis on socio-economic data e.g. respondents' attributes and perceptions were then carried out. Finally, a nonlinear regression analysis was carried out to establish the relationship between carbon emission and the traffic volume in the city.

The carbon sequestrations estimation was based on the interpretation of satellite imagery of the vegetation in the City supported by aerial photographs and samples of the ground survey.

DATA ANALYSIS AND FINDINGS

The Trend of Land Use cover and Land Use Pattern

Table 2 shows that the built up area of 8,440 hectares in 1980 has gradually increased to 10,242 hectares in 2000, indicating an average increase of 1-2% in every ten-year period. The built-up area growth rate during the period of 2000-2015 has been doubled compared to the period of 1980-2000.

The increase of built-up area over the years as shown in Table 2 is certainly at the expense of the decreasing natural area, as the urban area of Kaduna city is practically constant. The changing landscape of Kaduna City due to urban development occurs mostly on farmland and vegetation. The decrease of farmland accounted for about 2.0% in five year period, while the vegetation

reduced by 1-2% in the same period. The conversion of bare land to a built-up area, on the other hand, accounted for only 0.8%.

Table 2 Land use development in Kaduna City (1980-2015)

		1980	1985	1990	1995	2000	2005	2010	2015
	Land Use Categories	Area in Hectares (%)	Area in Hectares (%)	Area in Hectares (%)	Area in Hectares (%)	Area in Hectares (%)	Area in Hectares (%)	Area in Hectares (%)	Area in Hectares (%)
1	Built up	8,440 (18.8)	8,775 (19.6)	9,110 (20.3)	9,676 (21.5)	10,242 (22.7)	11,959 (26.5)	13,677 (30.1)	15,394 (33.8)
2	Farm land	23,175 (51.7)	22,940 (51.2)	22,705 (50.7)	21,693 (48.30	20680 (45.9)	19,804 (43.8)	18,928 (41.7)	18,052 (39.6)
3	Vegetation	10,020 (22.4)	9,970 (22.2)	9,920 (22.1)	9,749 (21.7)	9,578 (21.3)	9,257 (20.5)	8,937 (19.7)	8,616 (18.9)
4	Bare land	2,150 (4.8)	2,100 (4.7)	2,050 (4.6)	2,770 (6.2)	3,489 (7.7)	3,178 (7.0)	2,866 (6.3)	2555 (5.6)
5	Water Body	1,040 (2.3)	1040 (2.3)	1040 (2.3)	1040 (2.3)	1,040 (2.3)	1006 (2.2)	972 (2.1)	937 (2.1)
	Total	44,825	44,825	44,825	44.927	45,029	45,204	45,378	45,553

Source: Parah Konsult, 2015

The Mono-Centric Land Use Pattern in Kaduna.

Data analysed on an intra-city commuter trip for twenty-one residential neighbourhoods spread across the city is shown in Table 3. It reveals that out of 600 daily trips generated, 57.5% of the travels were made towards Central Business District (CBD) or city centre. This fact reflects that CBD becomes the single destination by the majority of citizens, and it also shows that strong influence of British planning mind-set in city planning system of Kaduna that has brought down for decades since the colonialism era. For many reasons, a mono-centric city in most developing countries has generated environmental consequences from transportation sources (Permana et al.,2015).

Table 3 Trip Generated by Commuters in Kaduna Urban Area

No	Name of neighbourhood	Distance of neighbourhood from city centre (km)	Frequency of trip generated	Commuter trip within the same neighbourhood	Commuter trip outside the neighbourhood	Commuter trip to the central business district
1	Sabon Tasha	14.07	50	8 (16%)	16 (32%)	26 (52%)
2	Maraban Rido	21	20	0 (00%)	4 (20%)	16 (80%)
3	Narayi	5.97	35	4 (11.43%)	9 (25.71%)	22 (62.86%)
4	Barnawa	5.23	42	10 (23.81%)	4 (9.52%)	28 (66.67%)
5	Kakuri	8.1	30	4 (13.33%)	7 (23.34%)	19 (66.33%)
6	Gonin Gora	10.84	20	2 (10%)	7 (35%)	11 (55%)
7	Kawo	7.4	70	11 (15.72%)	18 (25.72)	41 (58.57%)
8	Angwar Malali/Rimi	3.86	40	5 (12.5%)	14 (35%)	21 (52.5)
9	Angwar Television	8.58	15	2 (13%)	6 (40%)	7 (47%)

10	Mando	10.40	25	2 (8%)	6 (24%)	17 (68%)
11	Nasarawa	6.71	20	7 (35%)	4 (20%)	9 (45%)
12	Angwar shanu	3.1	10	2 (20%)	3 (30%)	5 (50%)
13	Angwar Mauzu	4.97	15	1 (6.67%)	6 (40%)	8 (53.33%)
14	Angwar Dosa	5.55	35	8 (22.86%)	12 (34.29)	15 (42.85%)
15	Angwar Romi	9.90	30	5 (16.67%)	10 (33.33%)	15 (50%)
16	Kabala costain	2.70	10	1 (10%)	3 (30%)	6 (60%)
17	Rigachikun	14.50	14	1 (7.14%)	3 (21.43%)	10 (71.43%)
18	Kurmin Mashi/Badiko	3.93	13	00 (00%)	4 (30.77%)	9 (69.23%)
19	Angwar Rigasha/Sanusi	5.67	50	1 (2%)	23 (46%)	26 (52%)
20	Tudun wada	2.45	36	5 (13.89%)	21 (58.33%)	10 (27.78%)
21	Central area	-	20	16 (80%)	4 (20%)	-
	Total/Average		600	12.3%	30.2%	57.5%

Source: Field Survey 2015

The distance of all neighbourhoods from the city centre ranges between 2.45 km to 11.60km, while the average willingness to walk for the citizens, based on the questionnaire survey, was 1,100 meters. This reflects that beyond 1.1 km people tend to accomplish their travel by using motorized modes of travel, either private or public transport. A correlation test between distance and trip generation to the city centre give an R-Square of 0.076. This result reflects a non-significant relationship between the two variables. It also means that the high trips generated to the CBD may be attributed to economic gain derived from the jobs and economic activities in the city hubs. Mobility is not limited by distance as in this case.

Land Use Pattern Influence on Traffic Flow and Implication for Co_2 Emission

The mobility pattern in the city shows the very high intra-city interaction between the peripheral medium and high residential land use and the agglomerated urban core. The city centre is a predator of commuter trips produced by the residential neighbourhoods. The flow of traffics towards the same direction during the working days generates high traffic volume along major routes leading to the city centre. Figure 4, shows the daily pattern of traffic volume along designated major routes. The traffic pattern at four selected points shows similarity on the cycle which is the morning peak hour between 7:00-8:00 am, while evening peak hour between 17:00-18:00hrs. The peak hours reflect the peak traffic volume where most citizens are on the road towards their destinations, particularly for working purpose or heading home. During peak hours, the carbon emissions are expected to be the highest. The traffic volume was counted in Kawo, Kasuwa (Market), Station at Roundabout and Sabon Tasha.

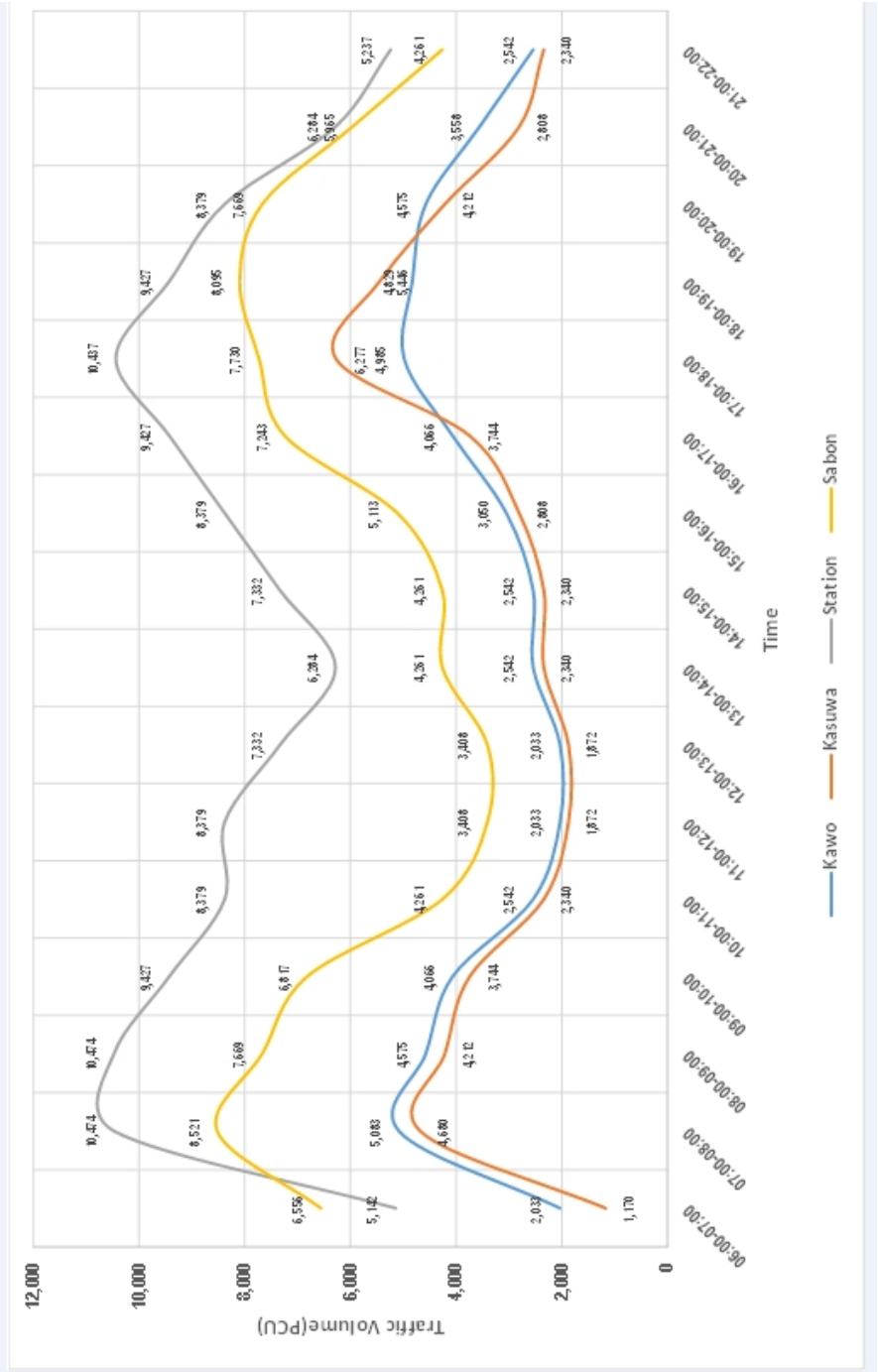

Figure 4 Daily Traffic Flow Pattern in 4 selected Points

OECD (2007) argue that high traffic volume in mono-centric city leads to excessive congestion, therefore resulting to queuing, stretching of travel time, stress and increase emission due to prolonged combustion. Traffic congestion in many cities in Nigeria was attributed to the causes of poor road network, poor urban spatial arrangement and poor driving habits as identified by Bashiru (2008), Remi, Adegoke and Oyerinde (2009), Aderamo and Atomode (2012), and Ukpata & Etika (2012). In this case, the land use pattern, which influences the direction of traffic flow, has proven as a factor contributing to urban traffic congestion in Kaduna.

One of the most significant causes of urban traffic congestion is the extension of travel time, which is irritating for many urban people. This aspect can also be translated to more fuel consumption; and fuel consumption is directly related to CO_2 emission. A non-linear regression was carried out on the two major variables, in which the volume of traffic representing the independence variable was used against the dependable variable represented by the values of carbon emission resulting from the hourly monitoring. The correlation between traffic volume and carbon emission in Kaduna can be described as a function of $Carbon\ Emission\ [in\ ppm] = 125.52[Traffic\ Volume,\ in\ PCU]^{0.2848}$ with R-square is 0.5338 (Figure 5). Hence, it is deduced that there was a significant positive relationship between traffic volume and carbon emission. The strength of association between the variables shows a positive and strong relationship as R-square values skewed towards one. The absence of industrial activities along the major roads means carbon emission from industrial source was negligible. Thus, it can be safely concluded that the source of carbon emission was solely the transportation sector. This condition further buttressed the relationship. Above all, the scenario from this study shows that an increase in traffic volume along major routes in the city will likely lead to increasing level of CO_2 emission over time. The air concentration of CO_2 gas in selected locations along traffic routes in the city ranges between 1,457ppm to 1,884ppm as plotted in Figure 5.

Carbon Sequestration Estimate in Kaduna City.

Using the method provided by Smith et al., (2006), the study estimated the carbon sequestration of the urban forest in Kaduna and surrounding areas. According to Keay, Onochie and Stanfield (1964), there were about 900 different kind of trees in Nigeria and sub-Saharan countries in general. Understory trees, which have a height less than 25-foot tall are excluded in the calculation of carbon sequestration capacity.

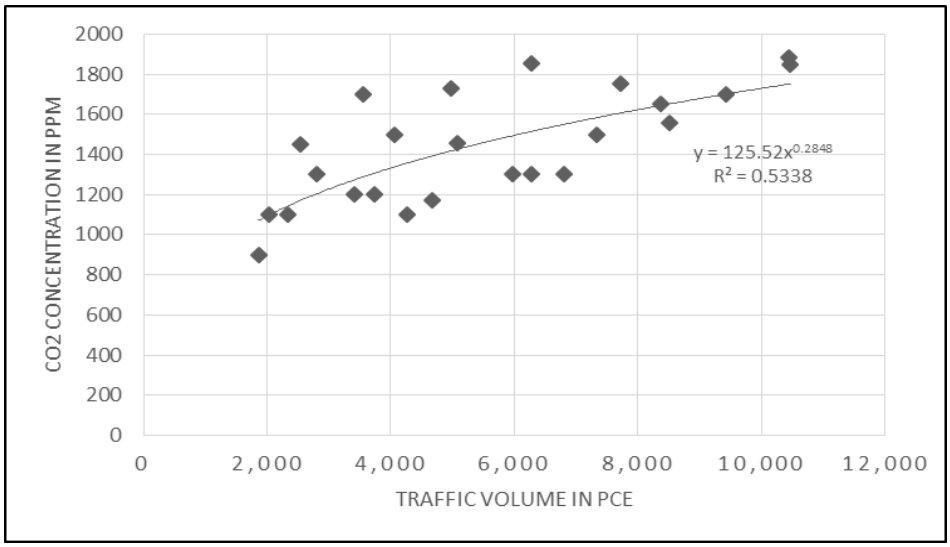

Figure 5 The relationship between Carbon Emission and Traffic Volume in Kaduna

Based on the findings from Keay, Onochie and Stanfield (1964), and ground checking with the Department of Forest Research of Nigeria as well as supported by recent aerial photographs, and Google Earth and Google Maps imageries, it is estimated that the urban forest in Kaduna and the surroundings area has the sequestration capacity as shown in Table 5.

Table 5 Carbon Sequestration Capacity of Kaduna Urban Forest

Carbon sequestration in Kaduna City	Mean vol (m3/ha)	Live tree (ton c/ha)	Standing dead tree (tc/ha)	Understory (tc/ha)	Down dead wood (tc/ha)	Forest floor (tc/ha)	Organic soil (tc/ha)
Per Unit (m3/ha or tC/ha)	155.3	73.8	2.4	2.9	6.1	8.1	41.9
Total Sequestration Capacity (m3 or ton of C)	1,319,625.0	627,300.0	4,080.0	24,650.0	7,777.5	68,850.0	106,845.0

Source: Modified After Smith et al. (2006).

While the total carbon sequestration capacity of urban forest of Kaduna City is around 839,000 ton of carbon and will increase about 1.0% or about 8,390 ton carbon annually, the estimate annual total carbon emission produced in Kaduna City is about 3,170 ton. Thus, annual carbon emission can be absorbed

by natural sequestration. However, the crucial issue on carbon emission in Kaduna is not on the sequestration capacity of the urban forest in Kaduna and surrounding area, rather the above acceptable level of CO_2 emission. This means that, with respect to CO_2 emission, Kaduna city is an unhealthy city, as average CO_2 emission in Kaduna is above the acceptable safe standard air quality limit of 350 ppm.

CONCLUSION

The land use pattern of the city is a function of a weak land use planning system over the years. The concentric spatial expansion has resulted to spatial mismatched between land uses in the city. The segregation between the residential land use and the location of job opportunities has created an upsurge in the mobility and also influences the mobility pattern of the city. Based on this study, a new approach to urban planning that will help to restructure the urban land use pattern in order to reduce high dependence on automobile within the urban centre should be the focus. Considering the benefit of compact development over fragmentation, in terms of enhancing a vibrant, healthy, friendly, liveable and walkable urban centre (Brandes et al., 2010) urban planning should be used as a functional tool that will help mitigate the causes of climate change and reduces it impacts and vulnerability overtime. Furthermore, neutralizing the predatory strong ability of the urban core by creating growth poles at different neighbourhoods at a close distance across the city will help to reduce high dependence on the automobile, thus reducing traffic congestion and CO_2 emission from traffic. Finally, the integration and adoption of functional mass transit programme to link area of high density will also help reduce traffic congestion resulting from commuter's high use of private cars.

The above though may not be workable for the time being, considering the present performance of Kaduna city. However, some of them are not impossible to implement as long as there exists political will of the authority.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 63 – 76

INTEGRATED PLANNING MODEL OF CREATIVE INDUSTRY-BASED *KAMPUNG* TOURISM IN JAYENGAN SURAKARTA, INDONESIA

Winny Astuti[1], Ariva Sugandi Permana[2], Qomarun[3], Alpha Febela[4], & Rufia Andisetyana[5]

[1,5]*Program Study of Urban and Regional Planning*
UNIVERSITAS SEBELAS MARET SURAKARTA, INDONESIA
[2]*Department of Urban and Regional Planning*
UNIVERSITI TEKNOLOGI MALAYSIA
[3,4]*Department of Architecture*
UNIVERSITAS MUHAMMADIYAH SURAKARTA, INDONESIA

Abstract
Creative Industry-based tourism has been popular as several cities in Indonesia have also been declared as "Creative City". In sustainability viewpoint, the integration of creative industry activities with other planning elements and efforts towards social and economic development is necessary. The inter-organizational collaboration is essential by integrating various disciplines in managing the complexity and the dynamics in tourism development. This research aims at developing an Integrated Planning Model of Creative Industry-based Tourism in Jayengan Surakarta. The study adopted a mixed-methods approach using detailed observations and interviews, as well as Focus Group Discussion (FGD) with the primary actors to understand the process. The study suggests that creative industry-based *kampung* tourism in Jayengan Surakarta, must be developed with integrated manner through interrelationships among tourism components, developing problem-solving model, promoting a conceptual system to guide the process and strengthening the inter-organizational collaboration. It is also understood that this concept might promote rural development since the potential sources of local industries and tourism are abundantly available in the rural areas.

Keywords: Creative industry, Integrated Planning Model, tourism, community, *kampong*

Date Received: 11th February 2017
Date of Acceptance: 15th September 2017

[1] Lecturer at Universitas Sebelas Maret, Surakarta Indonesia. Email: winnyast64@gmail.com

INTRODUCTION

Along with the issue of mega cities in some Southeast Asian countries (McGee, 2009; Scott, 2001), the urban poverty rate is also increasing in parallel with the increase in rural-to-urban migration. A high poverty rate in Indonesia, which was in 2014, have reached 27.73 million people or 10.96% in average (BPS Nasional, 2016) has forced Indonesia to emphasize and prioritize economic development in the national planning system. In Surakarta itself, which is the study area of this paper, the poverty rate was even higher than national average, which was at 14.1% in 2009 (BPS Surakarta, 2016).

One of the development sectors, which has multiplier effects on enhancing economic development and people welfare, is tourism sector. As found in *Kampung* Jayengan Surakarta, the inhabitants are *Banjarnese*, whose ancestors came from the Banjar Area in Southern Kalimantan as early as 1746. Their ancestors were traders in jewellery, a trade which was inherited for generations up until today. They firstly built the Darussalam Mosque as a centre of Moslem religion, cultural and education activities in the area. Nowadays, the jewels craft of *Kampung* Jayengan has a great potential along with original Banjarnese traditional culinary, called Banjar Porridge *(Bubur Banjar)* event, traditional dance of Hadrah etc. However, these days, the traditional characters of Jayengan have been threatened by the urban development, as the area is located in the centre of a business district. Exploring the traditional values of the Jayengan to boost the community-based urban economy is one of the ways to eliminate urban poverty while exploring the high potential creativity of the citizens. Within the context of rural-urban connectivity, creative industry may also generate the symbiotic mutualism as the industry provides opportunities for suppliers in the rural areas and markets in the urban areas, and in the end, may create economic opportunities for both urban and rural people (Cunningham, 2002; Garnham, 2005; Ma & Zhu, 2016).

The creative industry-based tourism potentials are richly available in both urban and rural areas, particularly in rural areas (Evans, 2009; Dorry, Rosol & Thissen, 2016; Lu & Chang, 2016). In the case of the study area, the rural area reserves the perspectives of the industry along with cultural and natural based tourism potentials, for example, in the buffer areas of Surakarta City. Three ethnic groups of *Banjarnese*, *Javanese* and *Chinese* (locally known as *Jarwono*) promote creative industry in *Jayengan Kampung Permata* (JKP).

This study aims at developing Integrated Planning Model of Creative Industry-based Tourism *Kampung* in *Jayengan*, Surakarta. The study attempts to respond to questions on how the model able to integrate all components of creative industry-based tourism in the development process of Jayengan as creative industry-based tourism *Kampung.*

Figure 1 The Main Tourism attraction of Jewel Craft and supporting tourist Attractions Traditions (*Photos Credit: Winny Astuti)*

THEORETICAL BACKGROUND ON THE MODELS

Industrial Cluster, Creative Industry and Creative Industry-Based *Kampung* Tourism

Porter (1990) refers the industrial cluster to an agglomeration and spatial concentration of industrial activities, which has one specialization of industry. Luo & Tung (2007) assert that intense relationship among concentrated business units in the form of partnerships generates an industry with broader market opportunities as well as export market. If it is translated into urban planning theory, industries concentrated in one location is more desirable than scattered, as home-based economy must be able to generate the income while development control is loosely carried out (Lambert & Boons, 2002; Gronau, 1980). Porter (2000) argues that partnerships are formulated when each of business units in industrial cluster develops networking with other business units internally, as well as other different clusters with different function and roles. Variety of business units with different characters and roles contribute to sustainability of industrial chain as component of industrial cluster. Based on Porter (1998) and

Setiyani (2014), there are three main components of industrial cluster: *core industries, supporting industries*, and *related industries.*

Sihombing et al. (2016) assert that cluster approach in tourism-based *kampung* development should be based on the strengthening of the quality of relationships among associated business chains for improving the effectiveness and competency of the *kampung* as tourism destination. By this assertion, the existence of tourism-based *kampung* with creative industry as prime mover should have an interconnection with the city planning system. Information Technology (IT) will help strengthening and broadening the network of this *kampung* tourism. Meanwhile, the creative tourism refers to tourism destinations that offer tourists the opportunity to develop their own experience through active participation in learning experience (Landry, 2012).

Model for Tourism Planning and Development

According to Getz (1986) and Jafari (1987), there are several models in tourism planning, which include theoretical and process models. While the theoretical model conceptually depicts how the planning itself relates to reality, the process model is basically a subjective/prescriptive type which is based on dogma or idiosyncratic reaction as well as based on problem-solving that formulate goals, generate alternatives, evaluate the alternatives and options, and implementation. Another model is integrative model, which is a complex approach based on systems theory. At this point, these varieties of planning models are applicable to *kampung* Jayengan. In line with this, Gunn (2014) and Bello, Car and Lovelock (2016) argue that sustainable tourism planning should integrate all planning elements and efforts for social and economic development as an interactive system.

In the process models, the problem-solving approach seems suitable to the Jayengan. This problem solving model has 3 subsystems namely area development, project development and management and marketing. Baud-Bovy (1982) developed a model based on comprehensive approach for tourism development master plan. Another similar model is integrated planning model that allows planners to understand the systems and interrelationships among tourism components.

Integrated Planning Model

Sautter & Leisen (1999) stated that collaboration of stakeholders in tourism development is a primary key for sustainable development efforts in tourism development, and use transactional strategies as development instruments. However, development of mechanism and process for integration and collaboration of all various interests and elements in tourism system is still a strong challenge. It needs strong cooperation and collaboration from all stakeholders of tourism planning (Jamal & Getz, 1995; Sautter & Leisen, 1999;

Bramwell & Lane, 2000; Aas, Ladkin, & Fletcher, 2005). Collaboration in this case is more than a cooperation, which is usually working together to some end. A collaboration is beyond a cooperation, which shares the goals to be accomplished (Jamal & Getz, 1995; Reed, 1997). Therefore, collaboration for community-based tourism planning should be beyond a process of joint decision–making among autonomous key stakeholders of an inter-organizational community tourism domain to resolve planning problems of the domain and/or to manage related issues (Graci, 2013).

RESEARCH METHODS

This research applies mixed methods approach. According to Johnson, Onwuegbuzie & Turner (2007) a mixed method is the type of research in which a researcher or team of researchers combined elements of qualitative and quantitative research approach for the broad purposes of wide and deep understanding and corroboration.

An ethnographic research was carried out for more than three years as most of the researchers live in the same city and shares the same experience with *Kampung* Jayengan community. Techniques adopted include observation, interview with key persons and Focused Group Discussion (FGD). The key persons in the FGD include informal community leaders e.g. religious groups and noblemen; formal community leaders e.g. Heads of Community (*Rukun Tetangga*, RT; and *Rukun Warga*, RW), handicraft persons, tourism actors, local authorities, academics, and NGOs. They were expected to represent their interests towards better performance of creative industries in the study area. The ethnographic survey was conducted to uncover the activities of creative industry actors. This included a sum of 415 creative industry actors covering three different ethnic groups *Banjarnese* (151), *Javanese* (185), and *Chinese* (79). The surveyors gathered the information candidly without being noticed as researchers by the creative industry actors. This was to capture the plain and natural attitude of the actors.

RESULTS OF THE STUDY

Integrated Components of Planning in Creative Industry-based *Kampung* of Jayengan

Integrated Attractions

The unique characteristics of place, locality and authentic tourism attraction are the main motivation of people visiting tourism destination areas. *Kampung* Jayengan demonstrates a new opportunity on specific tourism exhibition in Surakarta, as production process of Jewel Craft becomes a unique experience chased by many domestic and international visitors. This primary tourism product

of *Kampung* Jayengan is supported by other local interests, such as local-traditional culinary; traditional dance and cultural events of *Bubur Banjar* (Banjar Porridge) held during the month of Ramadhan; *Hadrah* dance and other religious events centred in Darussalam Mosque. Thus, the month of Ramadhan is regarded as a right time to organize traditional events in the locality. By this event, we identified some tourist attractions as exhibited in Figure 2.

Integration of National and Local Policies on JKP

Tourism planning is convoluted due to the interdependency between the tourism development, socio-economic development and interdependency in the internal aspects of tourism such as tourism industry and various segment of the market (Baud-Bovy, 1982). Integration into the national policy is obvious as the planning for tourism destination development relies on the public financing for increasing regional economic development while enhancing the image of the country abroad.

Development of creative industry-based tourism in Jayengan Surakarta has a strong connection with the national policy on BEKRAF (the Agency of Creative Economy), which has been clearly spelt out in the Blue Print of Creative Economy Development of 2015-2025 (BAPPEDA Surakarta, 2015). In connection with the National Policy on Urban and Rural Development, the BAPPENAS (National Planning Development Board) supports the development of creative industry-based tourism *kampung* implemented through countrywide "One Village One Product". At the city level, the development of creative industry-based tourism in Jayengan Surakarta was supported by City Authority through the Blue Print of Surakarta Creative Industry Development, where *Jayengan Kampung Permata* (JKP) was declared as one out of 31 industrial clusters in Surakarta. The Surakarta Tourism Board has also integrated the JKP into Destination and Investment Tourism Plan 2016-2026. Program of "City's *Kampung* Tourism" has been formulated to strengthen the development of JKP. The revitalization of *Gatot Subroto* Corridor to increase the accessibility to the area has reinforced the exposure of the JKP at local and national level.

At the locality i.e. *Kelurahan* level, the JKP is the prime program of the annual local plan of *Kelurahan* Jayengan, in which the *Kartopuran* square served as the centre of culinary, culture and sports along with JARWONO program, which integrates *Javanese, Chinese* and *Banjarnese* ethnics. Integration of the Development of JKP in the development plan indicates that JKP has a high priority development policy. Figure 3 exhibits the overall policy and interconnection among different level of policy directives.

Collaboration with relevant Institutions

Gray (1999) argued that collaboration for community-based tourism planning needs joint decision making between authorities, key stakeholders and an inter-

organizational community-based tourism domains to resolve the planning problems of the domain and/or to manage issues related to the planning and development of the domain. As Gunn (2014) identified, most problems in tourism industry are due to lack of coordination and cohesion within incoherently tourism industry. Thus, all other planning aspects should integrate with tourism planning. In this case, the JKP should become an effective organizational structure, which caters the collaboration among institutions involve in tourism industry. Firstly, the universities can be involved. Secondly, the government authorities at central and local levels as the most important stakeholders, in which their roles could be played through the setup of social and economic programs implemented by various government agencies. Thirdly, other relevant Community Based Organizations (CBOs) and Non-governmental Organizations (NGOs) such as *Batik* Community and Solo Creative City Networks could also play the roles of prime stakeholders. Finally, mass media, in which its role is to expand the publicities and to use the information technology for promotion. A proposed collaborative arrangement among stakeholders is shown in Figure 4. Several processes of FGD among related institutions for the development of JKP in the forum have been carried out to share their views towards successful JKP.

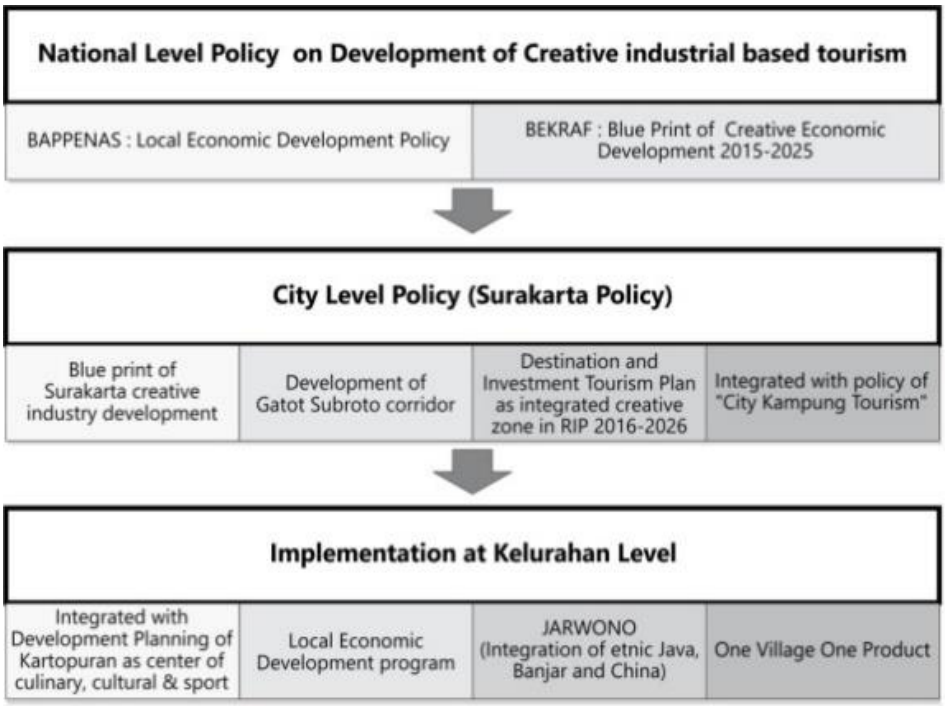

Figure 3 Integration of JKP in National and Local Policy
Source: Analysis Astuti, et al 2017

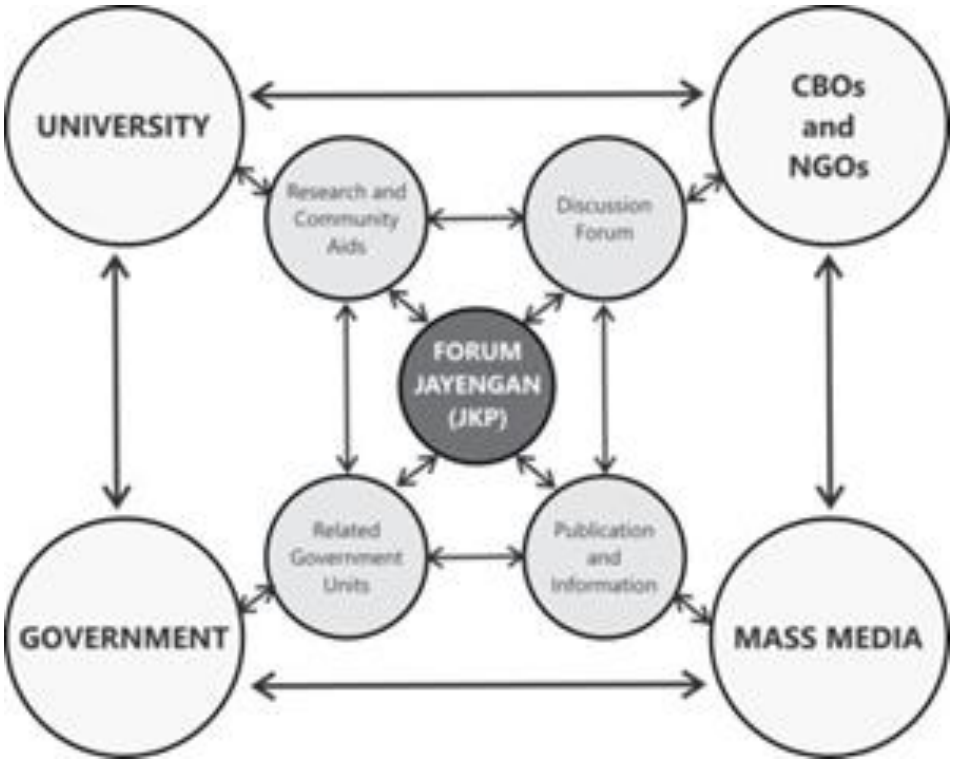

Figure 4 Collaborative Arrangement of various Institutions in JKP
Sources: Astuti, et al 2017

Integration with Associated Economy Sectors

Development of tourism destination area usually leads to enhancing interconnected sectors such as transportation, housing quality improvement, urban economic development, industry, telecommunication and information, urban facilities etc. In the JKP, even though the prime tourist attraction is only jewel industry, but due to strong integration with supporting industries, such as diamond, gold and silver industries, the synergistic actions have happened and flourished. The authorities had also involved the other relevant industries, for example, by integrating Banjar culinary, annual events of *Hadrah* folklore, *Bubur Banjar* and other marketable products along with sufficient supporting facilities.

The revitalization of *Gatot Subroto* Corridor, in which the events took place, the development of associated services, such as hotels, travel agents, museums, and information centres have flourished. This confirms that the development of tourism destination in the study area has multiplier effects in enhancing socio-cultural and economic aspects of the city, which definitely brings more positive impacts to the citizens.

Proposed Integrated Planning Model of Creative Industry-based *Kampung* Tourism in Jayengan Surakarta (IP-CIKT Model)

The developed model is intended to achieve better planning, coordination, collaboration and development of the JKP itself, as the development of Creative Industry-based *Kampung* Tourism has multi-sectors' integration, involving several parties such as public sector, private sector, NGOs, community, academics and other relevant entities. This model called IP-CIKT, which integrates the master planning, community-based planning and collaborative planning processes among institutions.

The first step is the development of a Master Plan, which is basically a community development plan, where the process model is based on the problem solving models. It should begin from community understanding of tourism system and theory, problem identification and solution, and goal formulation. The Forum *Jayengan Kampung Permata* could become representation of the community. Second step is the creation of continuous interaction with community for verification and validation of *Kampung* characteristics during Community Forum. The process needs simultaneous integration that covers several elements, which are (1) integration of the government policies at national and local levels including *Kelurahan*/*Kampung* (2) integration of economic sectors and activities that affect and are affected by the development of JKP (3) integration of the program with both main and supporting industries, and (4) integration of associated socio-economic potentials to support the creative industry-based *Kampung* Tourism. The third step is the collaboration and integration with government institutions plan as well as private sector and NGO, where the community-based development plan has been formulated in the first place. This process is proposed to generate an appropriate integration of all efforts as well as the commitment of several parties in the development and strengthening inter-organizational collaboration towards the successful implementation of creative industry-based *Kampung* Tourism of Jayengan (see Figure 5). By considering the present status of JKP and all stakeholders involved, the model would reflect better performance of JKP. However, the model needs preconditions, such as city leadership, the courage of the community and collaborative spirit among stakeholders.

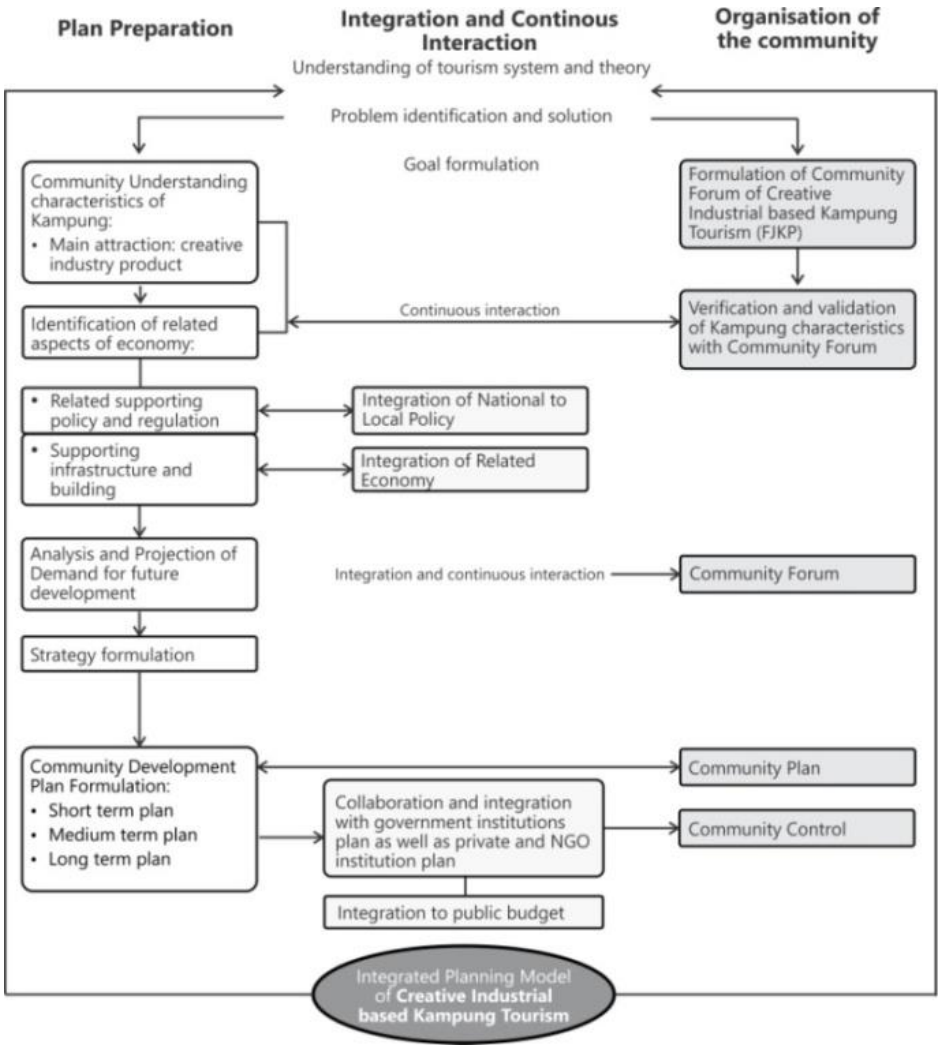

Figure 5 Integrated Planning Model of Creative Industrial -based *Kampung* Tourism in Jayengan Surakarta (IP-CIKT Model)
Sources : Astuti et al, 2017

The Practicality and Performance

The prime-mover of the model is the creative industry actors themselves, which consist of three ethnic groups of *Banjarnese*, *Javanese* and *Chinese*. They were formally organized since 2014 towards the vision of JKP with the help of local authorities. A Forum of Economic Development and Employment Promotion (FEDEP) has also played an essential roles to coordinate the process. Presently, the creative industry-based Kampung Jayengan main commodity is mostly jewellery related crafts. The local authority aims for Kampung Jayengan as the

second largest jewellery industry in Indonesia after Martapura in South Kalimantan. It is not impossible since the main actors in Jayengan are also blended *Banjarnese* who have inherited directly from Martapura. If the situation is brought in the Malaysia context, the situation resembles the Jonker Walk in Melaka where creative industry products are showcased and attracts many domestic and international tourists. However, unlike Jonker Walk Melaka, Kampung Jayengan Surakarta is not an urban heritage and it must grow with its own strengths and advantages. Strengthening and continuous development of the model are therefore necessary to support the vision of JKP. Authorities i.e. City Tourism Department, Cooperative Department, City Planning Department, FEDEP, CBO, NGO and academics must have a good coordination and always provide innovative ways to improve the performance of the model. The actors should be reminded that integration and synergy is the most important and crucial capital towards JKP vision.

The study has also identified that the most significant challenge in the implementation of the model (IP-CIKT Model) is the complexity of the Community-based Organization (CBO) where the community members have different perspectives and orientation to the development of the area. The presence of JKP Forum could be a great platform in the development of JKP, as the Forum becomes an agreed and shared instrument for integration of the community's perspective with other key resources such as government institutions, private institutions, and other similar community forums.

The grand design of JKP development has been prepared through the Forum of JKP, which was initiated by this research. The design should continuously be able to guide and direct the future development of JKP, given that all stakeholders respect the agreement during the JKP Forum. Continuous interaction between JKP Forum and all stakeholders of the JKP development becomes a key success in sustaining the program in *Jayengan*. Continuous enhancement of local community welfare would contribute to the development of Surakarta as creative city and economic development in the region.

CONCLUSION

With respect to urban-rural planning context, the potentials of creative industry i.e. actors, creativities and materials are usually plentiful in the rural areas. The only problem is that these potentials have never been exposed as rural economic opportunities and remained hidden without intervention of external forces. If the potentials are channelled to the city and combined with the similar prospective in the city and mainstreamed as part of the city planning as well as urban-rural connectivity, a tremendous economic prospect would be created. By this, urban-rural connectivity could be generated and thus minimise rural-urban divides.

ACKNOWLEDGEMENTS

The authors acknowledge the support of Ministry of Research, Technology and Higher Education of the Republic of Indonesia, and the Board of Research and Community Services of UNS and other parties, which could not be mentioned individually.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 77 – 92

SIX YEARS (1999-2015) OF ESCALATING HOUSE PRICE: CAN FDI BE BLAMED?

Ema Izati Zull[1], & Tajul Ariffin Masron[2]

[1,2]*School of Management*
UNIVERSITI SAINS MALAYSIA

Abstract

In Malaysia, house price has increased drastically. Problem arises in areas that received relatively lower number of FDI. The house price in these areas accelerated at growth which are somewhat equivalent to areas which benefit from FDI spillover. As the relationship between FDI and locals' well-being is becoming crucial due to the escalating high price, this paper intends to examine the long-term impact of FDI on house price in Malaysia. Our long-run estimation results showed that FDI inflows have affected house price in Malaysia negatively between the period of 1999 and 2015. The effect however reversed when liberalization policy is included. With the presence of liberalization policy, FDI inflows have actually caused house price in KL and Penang (highly dynamic states) to increase in the long-run. The positive effect of FDI inflows on house price are also found in relatively slow-progressive states like Pahang and Kedah confirming the nationwide effect of liberalization policy regardless of economy level of a state. Other than FDI inflows, this study also examined house supply, gross domestic per capita and interest rate as independent variables.

Keywords: House price, FDI inflows, liberalization, Malaysia, Johansen Cointegration Test

Date Received: 4th October 2016
Date of Acceptance: 25th August 2017

[1]Lecturer at School of Management, USM. Email: emazull@usm.my

INTRODUCTION

In many parts of the world, house price has increased by more than 50% between year 2000 and 2015 (IMF, 2015). Out of 64 countries, 67% recorded increase in house price in the first quarter of 2015. Joining the list are developing countries from Asia such as Malaysia, Thailand and the Philippines. The trend indicates that global housing market is booming and on the country individual level, the demand for better housing and housing areas are growing as well. On the macro level, the housing market development was no longer seen as a sole responsibility of a country's government. The market has received a significant and active participation not only from the local but also foreign developers.

Active participation from developers are also seen in Malaysia, particularly since 2009. During the year, Malaysia has relaxed its real estate policy, among others abolishing the Foreign Investment Committee function in filtering and monitoring foreigners' application in buying real estate in Malaysia. Real estate industry in Malaysia hailed the government's action and believed the relaxation would invite more foreign direct investment (FDI) into the country. It was seen such way as FDI has always been one of the Malaysia engine for growth since 1980s. Therefore, it was believed, with the liberalization of real estate policy, FDI into Malaysia would continue to boost the country's growth as a whole. The effect of FDI on a country's growth has also been evident in many countries following the FDI-led growth hypothesis (Cipollina et al., 2012; Gursoy, Sekreter & Kalyoncu, 2013).

The perception that FDI might accelerate a country's growth nonetheless is uncertain when there are emerging evidences that show it might not necessary be the case (Yalta, 2013; Adeniyi et al., 2013). Further, while FDI might contribute to a country's growth, it is ambiguous whether the spillover has actually benefit individual well-being. It is a growing concern in Malaysia as the country enjoys steady inflows of FDI and considerable growth, the house price has escalated to a very high level since 2009, or to be precise, since the relaxation of real estate policy takes place. The country's house price index has increased by more than 60% between 2009 and 2015 but the income per capita increased at single digit only during the same period. Together with the increasing of price in many goods, many locals cannot afford to even put down the 10% deposit to buy a home.

In Malaysia, house price increase has been a nationwide issue. The problem arises when areas which did not get the optimum FDI spillover benefits and are relatively slow in its economic activity are also experiencing high jump in the house price. While drastic increase in the economically active areas (such as in Klang Valley) is already a problem to its middle income workers, persistent house price increase in suburban and rural areas too is causing dissatisfaction among locals. Consequently, locals are getting upset and started to questioning how does FDI which is said to assist in growth, could also help in alleviating their

well-being. As the relationship between FDI and local's well-being is becoming crucial due to the escalating high price, this paper intends to examine the long-term impact of FDI on house price in Malaysia.

A number of FDI studies have been performed on other macroeconomic variables such as on trade (Belloumi, 2014; Dash & Parida, 2014) and domestic investment (Liuyong & Guoliyang, 2002; Onaran, Stockhammer & Zwickl, 2013). The study of FDI effect were also performed on industry level such as in manufacturing (Masron, Zulkafli & Ibrahim, 2012; Fernandes & Paunov, 2012) and service industry (Jia, 2014; Shu & Lin, 2012). The resentment over the discrepancy between what a country wants to achieve and what an individual is struggling on should be looked carefully particularly by revising the impact of FDI inflows on their need to have a home, thus making this paper filling the gap.

Considering the issue, this paper attempts to analyse the long-run relationship between FDI and house price in Malaysia. The impact of FDI will be measured in five different states which will represent different economic dynamic in Malaysia. The states that were observed are Kuala Lumpur (KL), Selangor, Penang, Kedah and Pahang. Kuala Lumpur is not a state but a city. The city is included in this observation since it is Malaysia's capital city. This study is expected to reveal some interesting findings as period of liberalization will also be considered. The reason for its inclusion is to observe whether the period would actually affecting the role of FDI in providing comfort to Malaysian.

LITERATURE REVIEW

It has been accepted by scholars that FDI is an investment involving "a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate)". Eclectic Paradigm introduced by Dunning (1979) has been referred to by many scholars in an attempt to explain the motivation behind FDI. The motivations are mooted around the ownership, location and internalization (OLI) advantages that investors and host country could achieve in joint-forces. In addition to the OLI traditional motivation is an extension suggested by Matthews (2006) that is called the LLL (Linkage, Leverage, Learning) framework. The LLL framework adheres knowledge as its base is suggested for emerging multinational enterprise which intend to pursue new capabilities rather than exploiting the existing asset. The knowledge-seeking FDI was put to test by Kedia, Gaffney and Klampit (2012). Attributed to latecomers of emerging market multinationals they suggested that latecomers normally depend heavily on their ability to seek knowledge through cross border FDI rather on traditional motivations, although it is not necessarily mean the two motivations are mutually exclusive to one another.

While the effect of FDI has been studied largely by scholars, to our knowledge, there is no study that analysed the effect of FDI on house price. The FDI-house price analysis is important in the rising trend of real estate industry today as many emerging countries are exercising liberalization policy on their country's real estate. At the same time, these countries are also capitalizing on FDI to sustain their growth. House price is traditionally determined by the classic supply and demand factors. Price theory asserts that in a free market economy the market price is determined by supply and demand. The equilibrium price is set so as to equate the quantity being supplied and that being demanded. In reality however, the price may be distorted by other factors, such as tax and other government regulations.

The house price studies can be divided into several clusters - dynamics study (Bork & Møller, 2015; Bajari et al. 2013), cycle study (Huang & Tang, 2012; Ferrero, 2015). While there is a substantive body of literature studies on house prices, in particular in the current decade, no fixed set of price determinants has been identified. For example, Glindro, Subhanji and Zhu (2011) study the macroeconomic and institutional impact in explaining the differential impact between fundamental and speculative housing bubbles. According to them, the spillover effects of housing bubbles only have a mild adjustment on Asia Pacific property development and introduced only small damage to banking system. House prices are also said to be synchronized across countries (Hirata et al., 2012) in addition to the finding that global interest rate shocks tend to have a significant negative effect on global house prices. The global monetary policy nonetheless does not have such an impact and they are inconclusive about other shocks that might have impact house price significantly. Although the model throws light on global cause of house price it falls short in including the significant role of FDI inflows. Therefore, leaving a gap between what FDI can contribute to an urban area, particularly property growth.

RESEARCH METHODOLOGY

This study analysed the effect of FDI on house price in the long-run in five states in Malaysia; Kuala Lumpur, Selangor, Penang, Kedah and Pahang. The dependent variable for this study is house price index, while the independent variables are number of house supply, gross domestic per capita, interest rate and FDI inflows.

Data and Sources

House price index (HPI) is used to represent house price, which is obtained from the Annual Property Market Report from 1999 to 2015. The reports were produced by the Valuation and Property Services Department (VPSD), Ministry of Finance Malaysia. To represent supply and demand factor, variables number of house supply and gross domestic product per capita were chosen. Interest rate

is included to represent macroeconomic variable and the policy variable is net FDI inflows. All data were obtained from Bank Negara Malaysia. In mathematical form, the equation is as follows:

$$HPI_{ij} = f(HS, GDC, IR, FDI) \ ,$$

where HPI_{ij} is house price index for *j* states, *HS* is supply, *GDC* is gross domestic product per capita, *IR* is lending interest rate and *FDI* is net foreign direct investment. The relationship is examined based on quarter period between Q1:1999 and Q4:2015 due to availability of data. It is acknowledged that the data set is not large; however, in the spirit of earlier studies on technology that suffered from the same issues in 1980s to mid-1990s, it is hoped that this study to pave a new path for further analysis. It is anticipated that, in time, this study will encourage the development of more active property data in Malaysia.

This study considers the effect of liberalization by employing dummy variable that hold "1" to represent period with housing liberalization, which began from Q3:2009 until Q4:2015.

Methodology

The analysis was begun by performing unit root test to examine whether our series suffer from unit root issue. Then correlation analysis was performed to observe the association between the variables and to check whether multicollinearity issue arises. Next, the long-run relationship was examined by employing the Johansen Cointegration test, with the null hypothesis of no cointegration relationship in the equation system. This cointegration analysis determines the number of cointegrating vectors, r, using the maximal eigenvalue procedure as given in Johansen (1988). The number of cointegrating vectors was determined sequentially based on the log-likelihood ratio test statistics. There are two tests provided, namely trace and maximal eigenvalue tests. The main importance of these two tests is the both tests have no standard distributions under the null hypothesis. Nevertheless, Johansen and Juselius (1990) suggest that the maximal eigenvalue test is more powerful than the trace test.

The cointegration analysis was complemented with vector error correction model (VECM) to model the short-term relationship before analysing for the long-run relationship analysis. The reason for performing VECM was twofold; first, to confirm the coefficient of error correction terms and second, to see whether the dummy variable (liberalization policy) affects the house price level in the short-term. Nonetheless, the inclusion of dummy variable in VECM will only reveal its effect in the short-run, not in the long-run. To see whether liberalization policy affects the house price level in long-term, this study resorts to Fully Modified OLS (FMOLS) which allow for the inclusion of dummy variable as an endogenous variable in the HPI equation.

Hypotheses

Based on notion that FDI promotes growth (Borensztein, De Gregorio & Lee, 1998; Vu & Im, 2013; Al-Sadig, 2013), it is hypothesized that FDI spillover would contribute to transfer of technology in developing real estate, particularly in terms of technique in building house at a cheaper level. Hence, H1: FDI inflows affect house price level negatively.

Since price of house is partly determined by supply, it is hypothesized that high house supply would cause the house price to decline. Therefore, H2: House supply affects house price level negatively. High standard of living, which is proxied by gross domestic per capita is expected to influence house price positively due to availability of demand of individual living in comfort and has access to sufficient material which allow individual to purchase a house. Thus, H3: Standard of living affects house price level positively. Lending interest rate is essential in home loan purchasing since potential buyers will look for financing their home with lower interest rate. Thus, lower interest rate will attract more potential buyers therefore, would drive housing demand, consequently the house price. Hence, H4: Interest rate affects house price level negatively.

RESULTS AND DISCUSSION

This section elaborates on the findings of the long-run relationship analysis that have been conducted. Prior to the analysis, the unit root test is conducted to ensure the series (*lnHPIM, lnHPIKL, lnHPISEL, lnHPIPNG, lnHPIKDH, lnHPIPHG, lnHS, lnGDC, lnIR and lnNFDI*) are free from unit root which could cause spurious results later. By utilizing the ADF Unit Root test, it is confirmed that all series are integrated of order 1, I (1).

Then, the association between these variables was examined by performing correlation analysis (Table 1) and the results indicated a possibility of multicollinearity issue between *lnGDC-lnIR* ($\rho_{(\ln GDC|\ln IR)} = -0.829$). Nonetheless, since there was no conclusive suggestion on the multicollinearity 'benchmark' figure, the analysis was treated in two ways. First, all independent variables (IVs) including *lnGDC* and *lnIR* is maintained if the regression passed the diagnostics and the coefficient of IVs produced satisfactory significance. Second, in the case where either diagnostics or coefficients produce unsatisfactory results, the *lnGDC* is dropped since the variable is more vulnerable than *lnIR* (in terms of affecting house price; see literature review). Back to correlation analysis, the preliminary results showed that Malaysia house price had a negative association with house supply and interest rate. These early results support hypotheses; where high supply could lead to lower price, so as the high interest rate. The house price also had a positive relationship with net FDI inflows, which raised an interesting insight only to be confirmed later in the long-run relationship tests.

Table 1 Correlation analysis results

	lnHPIM	*lnHS*	*lnGDC*	*lnIR*	*lnNFDI*
lnHPIM	1.000				
lnHS	-0.279	1.000			
lnGDC	0.955	-0.338	1.000		
lnIR	-0.776	0.055	-0.829	1.000	
lnNFDI	0.601	-0.038	0.623	-0.517	1.000

The analysis proceeded by conducting the Johansen Cointegration analysis to examine the possibility of FDI inflows and house price having a cointegrating relationship. The null hypothesis of no cointegrating relationship was assumed. In order to confirm the results, the outcomes were referred against the 5% critical value of the Trace and Max-Eigenvalue statistics (Table 2). It can be seen that house price in selected states, regardless of their economic dynamic are cointegrated with the IVs in the long-run. Their test results are all above the 5% critical values of Trace and Max-Eigenvalue - justifying there is at least 1 cointegrating relationship in the system. To further confirm the impact of *lnFDI* on lnHPI, the analysis was continued by checking the VECM.

Table 2 Johansen Cointegration Test Results

	lnHPIM	*lnHPIKL*	*lnHPISEL*	*lnHPIPNG*	*lnHPIKDH*	*lnHPIPHG*	*0.05 CV*
Trace statistics							
0	89.135*	86.031*	91.448*	89.051*	78.775*	88.299*	69.818
≥ 1	46.069	46.136	50.817*	54.582*	36.820	49.795*	47.856
≥ 2	25.573	20.057	28.916	26.072	18.657	21.634	29.797
≥ 3	10.827	7.547	9.213	11.164	6.103	11.191	15.495
≥ 4	1.222	1.009	0.379	1.024	0.409	3.604	3.842
Max-Eigenvalue statistics							
0	43.066*	39.894*	40.629*	34.469*	41.956*	38.505*	33.876
≥ 1	20.496	26.079	21.901	28.511*	18.163	28.161*	27.584
≥ 2	14.746	12.510	19.704	14.908	12.554	10.443	21.132
≥ 3	9.605	6.538	8.833	10.140	5.694	7.587	14.265
≥ 4	1.223	1.009	0.379	1.024	0.409	3.605	3.842

*Reject the null hypothesis of no cointegration at 5% significant level.

In order to get robust findings on net FDI inflows effect on house price, these variables are tested in four settings and will be discussed accordingly.

lnNFDI and lnHPIM (various combinations)

In the first setting, the study tested the house price model and the VECM results are shown in Table 3. There were five sub-models ranging from model which included all variables (Model 1) to models which this study excluded one variable at a time. The VECM results show that all models have negative error correction terms (ECT), which are significant at 1% level. All models show that the disequilibrium will be corrected at speed between 0.3% and 2.4% quarterly. In the long-run, the effect of FDI inflows was consistent throughout the models (Table 4). FDI inflows affected house price in Malaysia negatively, thus supported the hypothesis. When GDC was excluded, a 1% increase in net FDI inflows reduced Malaysia house price by 6.8% (Model 3). The magnitude of net FDI inflows effect was smaller when GDC was included, implying its significance in mitigating FDI's effect on house price.

Table 3 VECM results for *lnHPIM*

Dependent variable: lnHPIM					
Model	1	2	3	4	5
EC(-1)	-0.003**	-0.012**	-0.024**	-0.015**	-0.002**
	(-4.16)	(-3.37)	(-3.54)	(-2.75)	(-3.19)
Diagnostic					
R^2	0.527	0.379	0.472	0.414	0.346
$\overline{R}^2$	0.362	0.276	0.332	0.259	0.173
F-stat	3.753 [0.19]	3.662 [0.00]	3.370 [0.00]	2.670 [0.00]	1.995 [0.04]
B.G	2.927 [0.23]	3.782 [0.15]	1.561 [0.46]	5.448 [0.07]	6.005 [0.05]
ARCH	1.205 [0.27]	0.642 [0.43]	0.864 [0.35]	1.922 [0.17]	0.073 [0.79]
J.B test	3.203 [0.20]	2.218 [0.33]	2.451 [0.29]	5.150 [0.07]	2.913 [0.23]

( ) denotes t-statistics, [ ] denotes p-value, * and ** indicates coefficient is significant at 5% and 1% level respectively. B.G test refers to Breusch – Godfrey Serial Correlation LM. ARCH is used to test the heterogeneity. J.B is Jacque-Bera test for normality.

Table 4 Long-run results for *lnHPIM*

Dependent variable: lnHPIM					
Model	1	2	3	4	5
lnHS	-0.249*	-1.036**	-1.789	-0.745	-
	(-1.92)	(-3.13)	(-1.16)	(-1.52)	
lnGDC	-0.454	-3.008**	-	-1.485*	4.478
	(-1.31)	(-4.27)		(-1.93)	(1.42)
lnIR	0.978*	-1.933	3.877	-	11.181*
	(1.82)	(-1.44)	(0.91)		(2.00)
lnNFDI	-0.408**	-	-6.793**	-1.127**	-5.333**
	(-3.65)		(-5.03)	(-3.17)	(-4.59)
C	4.88	45.33	64.56	30.22	-32.94

( ) denotes t-statistics, * and ** indicates coefficient is significant at 5% and 1% level respectively.

lnNFDI and lnHPI (various states)

In second setting, this study compared house price models in 5 states and began the analysis with VECM. The error correction terms produced desired negative figures across states and they were significant at 1% level. The disequilibrium in these states' house price equation adjusted at speed between 1.3% and 30% every quarter – the fastest correction was in house price in Pahang (Table 5).

Table 5 VECM results for *lnHPI* (various states)

Dependent variable: lnHPIM						
	lnHPIM	*lnHPIKL*	*lnHPISEL*	*lnHPIPNG*	*lnHPIKDH*	*lnHPIPHG*
EC(-1)	-0.003**	-0.135**	-0.013**	-0.032**	-0.069*	-0.291**
	(-4.16)	(-5.03)	(-2.96)	(-4.93)	(-1.64)	(-3.19)

( ) denotes t-statistics

In Table 6, the long-run estimation results show that FDI inflows affected house price negatively in all states except Penang (due to its insignificance). By comparison, *lnNFDI* affected house price in Selangor the most, as result suggested an increase of 1% in net FDI inflows has caused the house price in Selangor to reduce by 1.59%. The effect of *lnFDI* on house price in KL and Kedah were about the same, although the dynamic of the states' economy were different. The small impact of *lnNFDI* on house price in KL might be due to small direct investment in the capital city since the city is already congested and nearly saturated compared to Selangor. The lesser impact of *lnFDI* on house price in Kedah on the other hand might be due to the lesser effort in attracting foreign inflows, thus, impacted house price at a smaller magnitude than in Selangor.

On control variables such as *lnHS* and *lnGDC*, their beta coefficients show mixed results. Earlier, it was hypothesized that house supply will affect house price negatively and results in Table 6 show that the hypotheses are supported for house price in KL and Penang. High house supply, however, has caused house price in Kedah and Pahang to increase significantly. Since the data of house supply in this study is not based on state's data, it is suspected the high increase in house price in Kedah and Pahang is due to the country's house supply spillover effect onto the states. On the standard of living, it was hypothesized that a higher standard of living would cause house price to increase. Interestingly, in KL and Penang (the two dynamic states), low standard of living have influenced price in these states to be high. These results confirmed that the average living standard of locals could not catch up with the high house price in KL and Penang.

Table 6 Long-run results for lnHPI of states

Dependent variable: lnHPI						
DV	*lnHPIM*	*lnHPIKL*	*lnHPISEL*	*lnHPIPNG*	*lnHPIKDH*	*lnHPIPHG*

lnHS	-0.249*	-0.270**	0.067	-1.143**	0.082*	0.158**
	(-1.92)	(-5.29)	(0.16)	(-3.79)	(1.65)	(3.60)
lnGDC	-0.454	-0.969**	-	-2.266**	-	0.218
	(-1.31)	(-7.22)		(-2.82)		(1.26)
lnIR	0.978*	-0.121	-0.417	-0.811	0.759**	0.221
	(1.82)	(-0.55)	(-0.37)	(-0.61)	(5.56)	(0.92)
lnNFDI	-0.408**	-0.259**	-1.585**	-0.282	-0.267**	-0.731**
	(-3.65)	(-5.43)	(-4.38)	(-1.05)	(-6.05)	(-7.87)
C	4.88	11.83	8.53	37.96	-4.89	-3.54

( ) denotes t-statistics, * and ** indicates coefficient is significant at 5% and 1% level respectively.

lnHPI and Dummy Variable, with and without lnNFDI

The study also examined the effect of liberalization policy on house prices by using dummy variables in the third setting. At the same time, it wanted to observe whether the inclusion of the dummy variable would jeopardize the FDI inflows effect on house price. Table 7 provides the results for two VECMs. In the short-run, it can be said that all equations had a negative ECT in the models that included dummy variable. It implies significant speed of the adjustment happened in the short-run house price models regardless of whether FDI inflows present or not. The dummy variables produced positive coefficient signs, showing that the liberalization policy has affected house price positively in the short-run, again, regardless of whether FDI inflows took place or not in the country. In fact the magnitude of the policy impact did not differ much in the short-run. Referring to the long-run estimation results (Table 8), the negative influence of FDI inflows on house price remain the same as the previous tests.

Since VECM only allow dummy variable to be included as exogenous variable and the results are referring to short-run only, we utilized the FMOLS to capture the policy's effect in the long-run (Table 9). Overall, these models have high R^2 and the regression passed all diagnostic tests.

In FMOLS regression, this study included dummy variable as endogenous variable and as predicted, the liberalization policy has a positive impact on house price in Malaysia and all states under observation. The results suggest that liberalization policy put forward by the government has indeed increased the house price in these areas by 0.12% to 0.33%. The highest impact was on the dynamic states – KL and Penang.

However, a more interesting part is the effect of FDI inflows on house price in the presence of liberalization policy. Unlike previous tests which saw FDI inflows reduced the house price, the variable seemed to have a significant influence in house price hike when liberalization policy took place. Although it is unclear how FDI inflows might have influenced the nationwide house price, the results suggested that it has influenced both dynamic and slowly progressive states in more or less the same magnitude. The presence of liberalization policy, however, did not change this study expectation on how house supply and interest rate affect house price.

Table 7. VECM results for lnHPI of states containing dummy variable, with and without lnNFDI

	Models contain *lnNFDI* and dummy variable					Models contain dummy variable only				
DV	*lnHPIM*	*lnHPISEL*	*lnHPIKL*	*lnHPIPNG*	*lnHPIPHG*	*lnHPIM*	*lnHPISEL*	*lnHPIKL*	*lnHPIPNG*	*lnHPIPHG*
EC(-1)	-0.017**	-0.081**	-0.291**	-0.026**	-0.345**	-0.046**	-0.110*	-0.106**	-0.0 03**	-0.154**
	(-2.20)	(-2.81)	(-3.82)	(-2.96)	(-2.07)	(-2.96)	(-1.65)	(-2.97)	(-2.61)	(-2.54)
Dummy	0.016**	0.059**	0.033**	0.026**	-0.034*	0.014**	0.048**	0.012	0.022**	-0.021*
	(4.07)	(4.05)	(3.91)	(3.68)	(-1.81)	(3.54)	(3.20)	(1.50)	(2.88)	(-1.72)
Diagnostics										
R^2	0.547	0.714	0.605	0.488	0.508	0.565	0.754	0.338	0.478	0.296
$\bar{R}^2$	0.376	0.479	0.281	0.339	0.106	0.438	0.491	0.148	0.325	0.163
F-stat	2.493[0.00]	2.454 [0.01]	1.869 [0.04]	3.274 [0.00]	1.263 [0.26]	4.458 [0.00]	2.859 [0.00]	1.753 [0.07]	3.134 [0.00]	2.228 [0.03]
B.G	4.521[0.05]	3.421 [0.18]	5.468 [0.07]	0.661 [0.72]	7.311 [0.03]	2.091 [0.35]	0.497 [0.78]	0.459 [0.79]	0.289 [0.87]	0.064 [0.97]
ARCH	3.245[0.73]	2.554 [0.11]	1.971 [0.16]	2.562 [0.11]	0.032 [0.86]	0.679 [0.41]	3.396 [0.07]	0.605 [0.44]	0.730 [0.39]	0.061 [0.81]
J.B test	4.787[0.06]	0.644 [0.73]	0.644 [0.92]	8.944 [0.01]	18.934 [0.00]	0.542 [0.76]	2.100 [0.35]	0.065 [0.97]	3.811 [0.15]	13.671 [0.00]

( ) denotes *t*-statistics , [ ] denotes p-value, * and ** indicates coefficient is significant at 5% and 1% level respectively. B.G test refers to Breusch – Godfrey Serial Correlation LM. ARCH is used to test the heterogeneity. J.B is Jacque-Bera test for normality.

Table 8 Long-run results for lnHPI of states containing dummy variable, with and without *lnNFDI*

	Models contain *lnNFDI* and dummy variable					Models contain dummy variable only				
DV	*lnHPIM*	*lnHPISEL*	*lnHPIKL*	*lnHPIPNG*	*lnHPIPHG*	*lnHPIM*	*lnHPISEL*	*lnHPIKL*	*lnHPIPNG*	*lnHPIPHG*
lnHS	-0.089	0.068	-0.251**	-0.265	0.052**	-0.334**	-0.129**	-0.346**	-6.596**	-0.122**
	(-0.65)	(0.84)	(-9.70)	(-1.14)	(-2.65)	(-4.32)	(-2.97)	(-6.39)	(-4.26)	(-2.53)
lnGDC	0.219	0.547**	-0.871**	-	-0.906**	-1.228**	-0.183*	-1.448**	-17.032**	-1.090**
	(0.56)	(2.00)	(-10.09)		(-11.90)	(-6.96)	(-1.81)	(-11.59)	(-4.76)	(-10.11)
lnIR	0.605	0.299	-0.240**	-0.296	0.182*	-0.660*	0.218	-0.639**	-23.086**	-0.116
	(0.97)	(0.69)	(-2.14)	(-0.27)	(1.73)	(-1.74)	(1.03)	(-2.46)	(-2.96)	(-0.51)
lnNFDI	-0.613**	-0.369**	-0.256**	-1.007	0.044*	-	-	-	-	-
	(-4.99)	(-3.59)	(-7.33)	(-4.98)	(1.64)					
C	-2.457	-9.531	10.649	6.87	5.612	14.46	-1.716	17.07	308.52	9.44

( ) denotes t-statistics, * and ** indicates coefficient is significant at 5% and 1% level respectively.

Table 9 FMOLS results of house price models

DV	*lnHPIM*	*lnHPISEL*	*lnHPIKL*	*lnHPIPNG*	*lnHPIKDH*	*lnHPIPHG*
lnHS	0.081	0.116**	-0.148**	-0.125**	-0.136**	-0.192**
	(1.31)	(2.47)	(-2.56)	(-2.35)	(-5.00)	(-3.98)
lnGDC	0.492**	0.597**	-	-	-	-
	(3.02)	(4.80)				
lnIR	0.029	0.175	-0.589**	-0.609**	-0.696**	-0.912**
	(0.12)	(0.97)	(-2.61)	(-2.96)	(-6.56)	(-4.87)
lnNFDI	-0.006	-0.014	0.080**	0.063*	0.054**	0.093**
	(-0.17)	(-0.57)	(2.27)	(1.93)	(3.24)	(3.15)
Afterlib	0.167*	0.124*	0.329**	0.274**	0.167**	0.167**
	(1.94)	(1.89)	(4.02)	(3.66)	(4.17)	(2.50)
C	-1.912**	-3.721*	6.771**	6.712**	7.09**	7.837**
	(-2.30)	(-1.87)	(8.15)	(8.83)	(18.11)	(11.34)
R^2	0.882	0.883	0.816	0.807	0.886	0.847
$\overline{R}^2$	0.871	0.873	0.805	0.794	0.879	0.837

( ) denotes t-statistics, * and ** indicates coefficient is significant at 5% and 1% level respectively

CONCLUSION

House price in Malaysia increased dramatically since the Government opened up the property sector to outsiders. One of the reasons for the opening up of the sector was to attract larger FDI inflows and to keep up with the neighbouring countries in liberalizing their properties. The effectiveness of the measure is, however, questionable as the locals are finding greater difficulties in owning a home. The role of FDI in assisting locals in purchasing a house is questioned although it might have contributed to the country's growth as a whole. Is it fair to blame FDI for the higher house price? Or, does the presence of property liberalization policy affect the role of FDI inflows in benefitting Malaysians, particularly in purchasing an asset?

This study analysed the effect of FDI on the house price in the long-run and as discussed earlier, it was found that FDI inflows has affected the house price in Malaysia or to be specific, house price in KL, Selangor, Penang, Kedah and Pahang. FDI inflows affected house price in this states negatively, which means that 1 unit increase in FDI is suggested to reduce the price of houses by 0.25 to 1.25 percent. While one wanted to be happy with the result, the presence of liberalization policy may have tarnished the glee. The role of FDI changed when the liberalization policy was included into the analysis model. The results showed that liberalization policy has caused the house price to increase in both dynamic and slow-progressive areas. In fact, the magnitude of the effect are somewhat the same, confirming a worrisome question: How do locals who work in Kedah and Pahang (receiving relatively low wages) could afford to buy a house which its price increase at the speed of KL and Penang's house price?

This analysis on the effect of liberalization policy suggested that the policy has not only increased the house price, but also changed the role of FDI

inflows in assisting Malaysians, particularly in housing market. The major limitation is the length of data. Nonetheless, it is hoped this will pave a way to more upcoming studies on housing. Future researchers are also suggested to probe into neighbouring countries analysis to compare their FDI inflow influence on house price.

ACKNOWLEDGEMENT
The authors wish to thank Universiti Sains Malaysia for supporting this research under grant Short-Term 304/PMGT/6313288

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DUPLICATION OF URBAN PLANNING FUNCTIONS IN A NIGERIAN STATE: UNCOVERING THE CAUSALITY

Oluwole Daramola[1], Olorunfemi Olojede[2], Akintayo Ojo[3], & Oluwaseun Olowoporoku[4]

[1,2,3,4]*Department of Urban and Regional Planning*
OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE, NIGERIA

ABSTRACT
This study examines the duplication in urban planning functions in Osun State of Nigeria. Data for the study were sourced from questionnaire administered on the directors of all the 35 planning agencies in the state. Data collected include respondents' characteristics and the operation of the planning agencies and these were analysed using frequency distribution. The study revealed that the agencies experienced conflict of interest and the reason for that was mostly jurisdictional. Also, the agencies seldom related with one another. The study concluded that the structure of urban administration in the state causes duplication of urban planning functions and recommends, among others, legislative changes in urban administration of the state and Nigeria.

Keywords: administration, duplication, Nigeria, planning, urban

Date Received: 15th March 2017
Date of Acceptance: 21st September 2017

[1]Corresponding Author: oluwoledaramola@gmail.com

INTRODUCTION

Several researchers have stated that cities of many developing countries, Nigeria inclusive, are not properly governed; a factor that accounts for their poor state and lack of significant contributions to the national economy (Pieterse 2000; UN-HABITAT 2001; Davoudi & Evans 2005; Swilling 2006; UN-HABITAT 2008; Falade 2010; Olawuni & Daramola, 2013). The resulting experiences include institutional fragmentation, multiplication of agencies, disparity of powers and responsibilities across different tiers and departments of governmental and non-governmental institutions and confusion over 'who does what' (Davoudi & Evans, 2005). A notable factor identified for the improper governance of these cities is lack of municipal administration (UN-HABITAT 2001; Davoudi & Evans 2005; Popescu, 2006; Falade 2010; UNDP/UN-HABITAT/NBS, 2011; Olawuni & Daramola, 2013).

Municipal administration refers to local administration authorities managing the entities defined as municipalities (Popescu, 2006). Popescu further put it that municipality has three distinctive characteristics: an area delimited by well-defined administrative boundaries; an area with a predominantly urban character; and an area governed by a local body of elected authorities, at a lower administrative tier. From the above, it is observable that municipal administration is applicable to cities and towns of all sizes and not to a division or fragmentation of a city or town nor the simple disaggregation of higher government tiers. In this context, municipal administration aims at achieving its mandate from the policies it has to implement and its effectiveness in serving the citizens and turning political intentions into reality (Popescu, 2006).

Historically, municipal administration is practised in Nigeria. Before Nigeria was colonised by Britain in 1861, city administration was provided by the paramount rulers or political heads of settlements as the *Obas* (among the *Yorubas* in the Southwest), *Obis* (among the *Ibos* in the Southeast) and *Emirs* (among the *Hausas* in the North). The Nigerian cities were characterised with self-governance in commerce, security and environmental sanitation. In the colonial era, Native Administrative Authority was introduced as an attempt to fit local administration to the traditional political structure (Falade 1985). The summary is that during these periods in Nigeria, cities were considered as centres of governance expected to generate revenue and perform urban functions on their own.

The practice of city-wide governance also extended to the Nigerian post-independence era that started in 1960. Notable in this regard is the formulation of the 1976 Guidelines for Local Government Reform. According to the 1976 Guidelines for Local Government Reform, regardless of population, no town or city should be split between two primary local governments; the whole planning area surrounding a town should be in the same primary local government. Also, any two or more towns, contiguous or not, which are close to each other as to

make up a conurbation, the whole should, with the planning peripheries, be in the same local government area (Federal Government of Nigeria, 1976). However, subsequent review of the reform negated the original idea and accorded no recognition for respect of city boundaries and their population size in creating urban local governments.

The divergence from the practice of city-wide is also embedded in the operative 1999 Constitution of Nigeria and the earlier enacted 1992 Nigerian Urban and Regional Planning Act. Constitutionally, Nigeria practises the federal system of government comprising federal, state and local governments. However, the Nigerian constitution makes town planning strictly a residual matter. This indicates that only the state governments that can legislate on town planning. Also, the constitution gives no clear mandates on urban planning to the local government. The main objective of the 1992 Nigerian Urban and Regional Planning Act is the promotion of land use planning and development control functions of the three-tier government structure in the country (Federal Government of Nigeria, 1992). The act sets up a commission at the federal level, a board in each of the 36 states, and a local planning authority in each of 774 local government areas. The act provides that development plans such as regional plan, sub-regional plan, urban plan and subject plan could be prepared by bodies at the three levels. In the same vein, all these bodies are saddled with the responsibility of carrying out development control within their areas of jurisdiction.

The realisation of the problem of uncoordinated urban planning in Nigeria has led to the creation of State Capital Development Authority by some state governments. This is to ensure the coordinated planning of the metropolitan area of the state capitals known as state capital territory. Nonetheless, the approach has created conflicts between the state and local government areas in the territory, with the latter accusing the former of hijacking their constitutional roles. For example, it is a common occurrence for development permit granted by the local planning authorities to be considered illegal by the State Capital Development Authority. Also, different state agencies have been created to perform constitutional roles of local governments such as construction and maintenance of access roads, streets, street lightings, drains and other public highways, parks, gardens and open spaces. If these trends continue unabated, Nigerian cities will lack coordinated urban planning that is necessary for their efficient and effective functioning.

A number of studies have been conducted on the necessity for city-wide administration in the quest for efficient and effective cities (Sharma, 1989; UN-HABITAT 2001; Davoudi & Evans 2005; Popescu, 2006). However, a review of the available literature has shown that only a few surveys relating to Nigeria and its federating unit exist on urban planning, and specifically the proliferation of planning agencies. Moreover, in Nigeria, most of the studies conducted were on sustainability of the cities (Falade, 2010), assessment of good urban governance

(UNDP/UN-HABITAT/NBS, 2011) and provision of environmental amenities (Olawuni & Daramola, 2013). Again, these past studies have focussed on residents and local government areas. Thus, no known previous studies have been conducted to provide information on the functions of planning agencies and the effects of that on urban planning. It is against the foregoing background that this study was conceived to assess the effects of city governance on the proliferation of planning agencies and duplication of planning functions in Osun State of Nigeria. To address this main goal, four research questions were formulated and they are specified as follows: What levels of planning agencies are in the state and what are their key activity areas? What is the relationship between the planning agencies belonging to same and different levels of government? What are the causes of conflict of functions, causes of the conflict and rate of conflict? What operations are make the planning agencies work together?

MATERIAL AND METHODS

The study area is Osun State, which was created in 1991 with Osogbo as the state capital. The state is made up of 30 local government areas (LGAs) and one autonomous local government area office. According to the latest 2006 national population census in Nigeria, Osun State had 3,423,535 people (National Population Commission, 2006). It is widely acclaimed as one of the most urbanised states in the country. It has many cities and towns with several of them governed by multiple local governments. For instance, Osogbo, the state capital, has three local government areas while cities such as Ile-Ife, Ilesa and Ede have two local government areas with their respective agencies. Also, offices of both state and federal governments are located in these cities.

In Osun State, there are planning agencies attached to the three tiers of government in Nigeria. These include a state office of Federal Ministry of Lands, Housing and Urban Development; Osun State Ministry of Lands, Physical Planning and Urban Development; Osun State Capital Development Authority; Osun State Property Development Corporation; and 31 local planning authorities in the 30 local government areas and the autonomous area office. Altogether, there are 35 planning agencies in Osun State comprising one federal planning agency, three state planning agencies and 31 local planning authorities. These planning agencies have their different planning functions.

The first one, the state office of the Federal Ministry of Lands, Housing and Urban Development, is saddled with the responsibility of development control on 'Federal lands' and right-of-way of federal roads and railway lines. The office is responsible to the national headquarters in Abuja. For the state planning agencies, the State Ministry is expected to perform all planning functions across the state while Osun State Capital Development Authority is tasked with the development matters in the state capital territory. The state capital territory is made up of Osogbo township and the adjoining areas as delineated by

the state government. Likewise, the Property Development Corporation plans and controls development in some public housing estates across the state. All these state bodies are directly responsible to the state government. The local planning authorities carry out their planning functions within the territories of the local government areas of their location. Each of the local planning authorities is a division or department of the local government council. For instance, it is the responsibility of the local council to finance the local planning authority and certain planning activities, such as demolition of illegal development, can be carried out only with the consent of the local government chairman. Summary on the planning agencies in Osun State and their responsibilities is given in Table 1.

Data for the study were sourced from administration of questionnaire in all the 35 planning agencies in the state (one federal planning agency, three state planning agencies and 31 local planning authorities). The reasons for selecting all the planning agencies were two. First, the sampling frame is small, hence selections of sample size was considered unnecessary for the study. In the 31 local planning authorities, questionnaires were administered on the directors, while in the state and federal agencies the respondents were the heads of departments. Where any of these officers were not available, the most senior official available was sampled. The questionnaire contained questions on gender, designation, highest educational qualification and professional membership of the respondents. These were obtained to know the characteristics of the respondents and to establish the authenticity of information obtained from them. Other questions include scope of operation of the planning agency, cases and types of undue external influence in discharge of duties, relationship with other planning agencies, cases and rate of conflict of interest among the agencies.

Data analysis was carried out using frequency distribution. This was mainly determined by the sample size (35) which is considered insufficient for rigorous statistical analysis.

Table 1 Planning Agencies in Osun State and their Responsibilities

Type of Agency	Name of Agency	Responsibilities
Federal	State Office of Federal Ministry of Land, Housing and Urban Development	Development control on 'Federal lands' and right-of-way of federal roads and railway lines; Report to the national headquarters in Abuja.
State	Osun State Ministry of Lands and Urban Development	Preparation of urban development plans in the state; Development control in the state other than on 'Federal lands' and right-of-way of federal roads and railway lines; Report to the state government.

	Osun State Capital Development Authority	Development control in the state capital territory; Report to the state government.
	Osun State Property Development Corporation	Development control in public housing estates in the state; Report to the state government.
Local	Local Planning Authority	Development control in local government area of jurisdiction; Report to the local government.

RESULTS AND DISCUSSION

The study revealed that, out of the 35 respondents interviewed in all the planning agencies, 94.3% of the respondents were male with only 5.7% of them being female. This indicates that the planning agencies were male dominated. Also, 48.6% of the respondents were the heads of their planning agencies while the remaining 51.4% were senior officers in the agencies. Among these heads and senior officers, 17.1% had Higher National Diploma, 40.0% had first degree while 42.9% had postgraduate degree as their highest educational qualification. Also, as town planners, 62.9% of the respondents were registered with relevant professional bodies (Nigerian Institute of Town Planners and Town Planners Registration Council of Nigeria); the remaining 37.1% were yet to be members of the professional bodies. All these results indicate that these respondents are capable of giving reliable information on their planning agencies. This is because they occupy positions that allow them to be abreast of the operations of the planning agencies, such as development control, policy formulation on urban planning and preparation of urban development plan.

Findings on the key activities area of the planning agencies are as contained in Table 2 with the percentage values in parenthesis. It is discovered that 34 (97.1%) of the planning agencies carried out development control activities while only one did not. Findings further revealed that 21(60.0%) of the planning agencies engaged in policy formulation while 27 (77.1%) planning agencies carried out development plan preparation. Lastly, only three (8.6%) planning agencies provided urban facilities; the remaining 32 (91.5%) did not engage in provision of urban facilities.

These analyses show that the planning agencies in the state primarily carry out basic physical planning activities such as development control, preparation of development plans and policy formulation. This is can be linked to the fact that most of the planning agencies are local planning authorities and, in Nigeria, local planning authorities usually focus on basic planning functions. Nevertheless, the planning agencies such as the Ministry of Lands, Physical Planning and Urban Development; Osun State Capital Development Authority and Osun State Property Development Corporation are also capable of providing urban facilities.

Table 2 Key Activity Areas of the Planning Agencies

Key Activity Area	Yes	No	Total
Development control	34(97.1)	1(2.9)	35(100)
Development plan preparation	27(77.1)	8(22.9)	35(100)
Policy formulation	21(60.0)	14(40.0)	35(100)
Provision of urban facilities	3(8.6)	32(91.5)	35(100)

Information presented in Table 3 revealed that duplication of functions exists in the domains of the planning agencies. As contained in the table, seven planning agencies (20.0%), which are either state or local planning agencies, had duplicated planning functions in their territories with the federal agencies. Likewise, 19 (54.3%) of the 35 planning agencies had their functions duplicated by different state planning agencies in their areas of jurisdiction and four (14.3%) of the planning agencies duplicated functions with the local agencies. Besides, five planning agencies (14.3%) declared that both federal and state planning bodies performed planning functions with them in their precincts. These indicate that none of the planning agencies had exclusive control of planning activities in their territory. And it can be deduced that at least five planning agencies in the state experienced two other planning agencies conflicting with their functions.

Table 3 Operational Parameters of the Planning Agencies

Parameters	Frequency	Percentage
Other Agencies Duplicating Planning Functions		
Federal	7	20.0
State	19	54.3
Local	4	11.4
Federal and State	5	14.3
Total	**35**	**100.0**
Causes of Conflict of Interest		
Jurisdictional Matter	32	91.5
Policy formulation	3	8.5
Total	**35**	**100.0**
Rate of Conflict of Interest		
Often	5	14.3
Occasionally	18	51.4
Rarely	12	34.3
Total	**35**	**100.0**

Subsequent to the duplication of functions, it was discovered that all planning agencies experienced conflict. One notable area was in granting of development permit. Some of the developers interviewed informed that some

state planning agencies have declared their development illegal after they have got approval for development from the local planning authority. Mostly, the reason for conflict of interest was jurisdictional with 32 (91.5%) of the planning agencies giving this as the cause of conflict of interest with other planning agencies. For instance, the jurisdictional conflict occur when the federal or a state planning agency duplicates the planning functions already carried out in in the jurisdiction of a local planning authority. This occurs especially when the planning function generates income, such as granting of development permit. However, the remaining three (8.5%) planning agencies had policy implementation as the cause of their conflict of interests. The conflict due to policy implementation involves activities such as development control monitoring and granting of development permit.

In the third section of Table 3 are findings on rate of conflict with other planning agencies in the territory of each of the planning agencies. For easy analysis, the data on rate of conflict were grouped into three: often, occasionally and rarely. Occurrence of conflict weekly (once, twice or more) was considered often. Occurrence of conflict once in a month or every other month was considered occasional. The rate of conflict of was considered rare when it occurred once in three months or more. Based on these categories, findings revealed that 5 (14.3%) of the agencies often experienced conflict of interest, 18 (51.4%) of them experienced conflict of interest occasionally, while 12 (34.3%) of the planning agencies rarely experienced conflict of interest with other planning agencies in the state. These findings further established that there is duplication in the activities of these planning agencies leading to conflict among them, although with varying rates.

Table 4 Relationship with Other Planning Agencies

Areas of Relationship	**Yes**	**No**	**Total**
Policy formulation	7(20.0)	28(80.0)	35(100)
Reporting	1(2.9)	34(97.1)	35(100)
Funding	9(25.7)	26(74.3)	35(100)
Supply of manpower and equipment	9(25.7)	26(74.3)	35(100)
Development plan preparation	12(34.3)	23(65.7)	35(100)

Table 4 contains information on the issues in relationship with other planning agencies with the percentage values in parenthesis. These include policy making, reporting, funding, supply of manpower and equipment and preparation of development plan. Findings revealed that only seven (20.0%) planning agencies related with other planning agencies based on policy formulation. Only one (2.9%) planning agency reported its activities to another planning agency. This planning agency is the state office of the Federal Ministry of Lands, Physical Planning and Urban Development which reports to the headquarters in the

Federal Capital, Abuja. However, other planning agencies both at the state and local levels did not report to any planning agency. Furthermore, nine (25.7%) of the planning agencies related with other planning agencies both in funding and supply of manpower and equipment; 26 of them did not. Likewise, only 12 (34.3%) of them related with other planning agencies in preparation of development plan.

CONCLUSION AND RECOMMENDATIONS

This study has shown that that good urban planning is a function of effective urban planning administration. This is established based on the proliferation of planning agencies and the consequent duplication in urban planning functions, using Osun State as a case study. The study revealed most of the planning agencies in the state carry out basic physical planning functions. These functions in order of priority are development control, preparation of development plans, policy formulation and provision of urban facilities.

Nonetheless, the study found that duplication of functions exists in the domains of the planning agencies. None of the planning agencies had exclusive control of planning functions in its territory resulting in regular conflict of conflict of interest with one another in performance their planning functions. The common reason for the conflict was jurisdictional matter. Likewise, the relationship between the planning agencies was poor pertaining to policy making, reporting, funding, supply of manpower and equipment and preparation of development plan.

Therefore, the study concluded that the administration of planning is responsible for proliferation of planning agencies and consequently the duplication of planning functions in the state, nay, Nigeria. Thus, with a view to achieving effective urban planning propelled by efficient urban administration in Nigeria, the following recommendations are proffered:

First, a major legislative change is recommended. Town planning should cease to be a residual matter in the Constitution of Nigeria but be listed on concurrent list. This will give both the federal and the state government power to legislate on town planning. This has two implications. This constitutional reform will enable the federal government to enact a planning law with national coverage. Thus, initiating planning proposals that cut across state and/or regional boundaries will be a possibility. Also, the state governments will be able to enact their own planning laws within the ambit of the national law to cater the peculiarities of each state.

Second, despite the fact that the provisions of 1976 Guidelines for city government have been compromised, the importance of such cannot be denied. Therefore, since mayoral system is not practised in Nigeria, a city-wide governance structure should be ensured by creating a Metropolitan Local Government Council for every metropolitan area while retaining the existing

urban Local Governments as District Local Government Councils. The need for such is being confirmed by the creation of State Capital Development Authorities and the designation of two or more Local Governments as a Planning Area in cities like Onitsha, Lafia and Port-Harcourt in the preparation of their development plans. This new body will redress the problems of duplication of metropolitan-wide functions such as development plan preparation, development control, transportation and water supply.

Besides, there is the need for a review of good practices in urban administration based on Nigeria's pre-colonial, colonial and post-colonial experiences. In pre-colonial era, city government was the practice by the traditional paramount rulers. In the colonial era, Native Administrative Authority was introduced as an attempt to fit local administration to the traditional political structure. And after independence from Britain, Nigeria still practised city government which was legislatively reinforced by the 1976 Guidelines for Local Government Reform. These experiences will serve as useful advocacy reference points in the efforts to promote urban planning agenda in Nigeria.

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CRITICAL REVIEW ON THE EXISTENCE OF TRANSGENERATIONAL ENTREPRENEURSHIP IN TOURISM BUSINESSES: CURRENT TREND AND INTEREST

Mohd Alif Mohd Puzi[1], & Hairul Nizam Ismail[2]

[1]*Department of Urban and Regional Planning, Faculty of Built Environment*
UNIVERSITI TEKNOLOGI MALAYSIA
[2]*Centre for Innovative Planning and Development (CIPD), Faculty of Built Environment*
UNIVERSITI TEKNOLOGI MALAYSIA

Abstract

Tourism, one of Malaysia's fastest growing economic sector, has created many business opportunities, the majority of which are family-controlled businesses. New ventures are started by founders who will eventually invite their relatives, especially as successors for their businesses. Nowadays, a successful family business is not determined by traditional methods alone such as profit, assets, or capital, but also take into account survivability or entrepreneurship transmission between generations. Unfortunately, entrepreneurship researchers have not fully embraced tourism because of the prevailing assumption that tourism is a just regular business. Both tourism and transgenerational entreprenership fields employ empirical studies to justify their idiosyncrasies but remain separate from each other. If studied together, it would lead to better understanding of both fields and would even spark the curiosity of researchers to investigate family relationships in conglomerate tourism businesses. Further research into this mixture of fields will also provide a conceptual economic model for tourism destination development bodies that will enhance and promote local community entrepreneurship.

Keyword: Transgenerational entrepreneurship, tourism development, tourism entrepreneurship

Date Received: 1st November 2016
Date of Acceptance: 21st October 2017

[1] Postgraduate Candidate at Universiti Teknologi Malaysia.

INTRODUCTION

The Emergence of Transgenerational Entrepreneurship in Tourism Businesses

Habbershon, Nordqvist and Zellweger (2010) triggered the notion of transgenerational entrepreneurship. They focused on a family's ability to transfer entrepreneurship skills to the new generation. Habbershon, Nordqvist and Zellweger (2010) suggest that family pervasively affects a new venture. Aldrich and Cliff (2003), and Stafford et al. (1999) found that the close relationships between family and business could lead to a potentially sustainable business. Aldrich and Cliff (2003) identify that family resources and characteristics influence an individual to create new ventures, which later become successful, hence creating suitable grounds to nurture new entrepreneurship. Solvoll, Alsos and Bulanova (2015) introduce tourism entrepreneurship as a potential research gap in both fields. Entrepreneurship is not entirely accepted as a distinctive characteristic of tourism (Solvoll, Alsos & Bulanova, 2015) and until recently there has been a lack of research in tourism entrepreneurship. Getz, Carlsen and Morrison (2004) started a similar research on family business and tourism development relationship, but they only discussed on the usual old family business theory in a tourism environment. Nevertheless, Getz, Carlsen and Morrison (2004) paved the way for other researchers to explore new boundaries of tourism development and transgenerational entrepreneurship.

Only successful family businesses maintained throughout several generations have managed to achieve the transgenerational entrepreneurship level. In other words, a family business must survive and transmit their entrepreneurial traits on to several generations to be acknowledged as a transgenerational entrepreneur. The objective of this paper is to analyse the emergence of transgenerational entrepreneurship in tourism research. Hence, the chronological method is chosen to achieve the objective.

Existing Literature on Transgenerational Entrepreneurship

The difference between a family business and transgenerational entrepreneurship must be clarified to avoid misunderstanding. Chua, Chrisman and Sharma (1999) accord a much too strict definition for a family business, which does not represent the entrepreneurship attitude in the family. Habbershon, Nordqvist and Zellweger (2010) argue that the issue is the entrepreneur mindset is still present even though the firm has already been sold or diminished. Habbershon, Nordqvist and Zellweger (2010) define transgenerational entrepreneurship as "processes through which a family uses and develops entrepreneurial mindsets and family influenced capabilities to create new streams of entrepreneurial, financial, and social value across generations". This definition focuses on entrepreneurship as the creation of new enterprising activities and is not based on traditional

entrepreneur measurements such as profit or other financial characteristics.

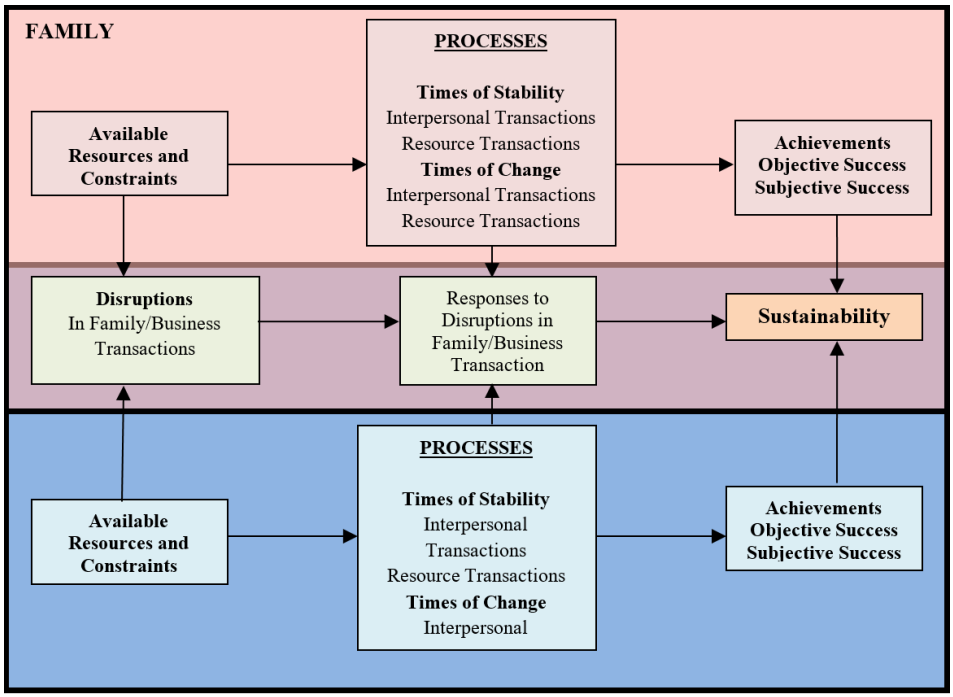

Figure 1 Sustainable Family Business Model
Source: Stafford et al. (1999)

In the beginning, Stafford et al. (1999) introduce a Sustainable Family Business Model that explained the relationship between a family and its business dimensions. Stafford et al. (1999) argue that family and business dimension overlap and both should integrate well with each other, so as to avoid any disruptions. The family and business transactions of resources and interpersonal aspects create a positive environment that enables sustainability.

Aldrich and Cliff (2003) identify certain abilities or family characteristics from Stafford et al. (1999), which could lead to the creation of a new venture in society. The socio-historical aspect from different eras has implications on a family as well as entrepreneurship from the mid-20th century to the 21st century. Trends in the family environment show a decrease in the proportion of households and average household size, an increase in the average age of couples' first marriage, a decline in divorce rates, increased women's employment rate, and reduced intergenerational contact. These changes in family trends create business opportunities. Shrinking family size and increasing the number of working women in dual-earning families have created a demand for small-sized family consumption, childcare, away-from-home foods, and household cleaning

services. Venture creation capitalises on the reduction of kinship involvement in business with abundant adequate resources to use where women can be the human resource, and social and financial capital. A new generation will gain entrepreneurship opportunity based on the family trend of their predecessors. Besides that, there are researches on family business in Southeast Asia region, but focusing on immigrant Chinese rather than local community.

The family embeddedness perspective in the new venture creation model introduced by Aldrich and Cliff (2003) aligns with Habbershon, Nordqvist and Zellweger's (2010) and their intention, which was to focus on family entrepreneurship through each generation. Zellweger, Nason and Nordqvist (2011) argue that a family business should focus on family-level analysis rather than on an organisation or individual level. This new level of analysis presents a new perspective that could explain family entrepreneurial behaviour (Habbershon, Nordqvist & Zellweger, 2010; Zellweger, Nason & Nordqvist, 2011). Habbershon, Nordqvist and Zellweger (2010) introduced a research framework for European Successful Transgenerational Entrepreneurship Practice (STEP) with a school partner from 2005-2008 implying that the family business has transformed into transgenerational entrepreneurship.

The transgenerational entrepreneurship model uses a measurement of entrepreneurial orientation (EO) by Lumpkin and Dess (1996), which has five identified dimensions. The first dimension is proactiveness, which refers to the ability to react to future problems and pursue new opportunities. The second dimension is risk taking, which relates to the entrepreneur's commitment to achieving his/her objective. The third element, innovativeness, refers to new ideas regarding products, process, and attitudes to gain positive growth. The fourth dimension, autonomy, refers to a decision to realise ideas. Competitive aggressiveness, the fifth dimension, relates to a competitive attitude to improve one's business and react to competitor's challenge. A family business that succeeds in entrepreneurial, financial, and social aspects has the potential to turn into transgenerational entrepreneurship. EO can explain entrepreneurial transmission from the founder generation to the young generation, in line with the objective of the study conducted by Habbershon, Nordqvist and Zellweger (2010), which was to determine entrepreneurial behaviour in a family.

IMPORTANT FACTORS OF TOURISM BUSINESSES IN TRANSGENERATIONAL ENTREPRENEURSHIP

Getz, Carlsen and Morrison (2004) state that over two-thirds of all tourism business firms in western countries are controlled by families, especially small and medium enterprises. Tourism is a major economy worldwide and consists of industries undergoing rapid economic development (Solvoll, Alsos & Bulanova, 2015). The type of destination is a top category for tourism researchers because the way in which dynamic tourism supply meets the demands of a particular place

is one of the key concepts in tourism research (Park et al., 2015). Tourism is a multidisciplinary study within social studies (Park et al., 2015). Park et al. (2015) observe that the definition of tourism aims to include an understanding of spatial areas, so as to determine the home region, destination region, and transit routes related to planning development. Rapid economic growth is evidence of exquisite entrepreneurship in a community and has led to the creation of more new business start-ups (Solvoll, Alsos & Bulanova, 2015). Furthermore, tourism should be looked from another perspective such as supply rather than demand (tourist).

Over 90 percent of all businesses in the free economies of the world are controlled by families (Poza & Daugherty, 2014), including tourism businesses. So, transgenerational entrepreneurship can potentially be developed into the primary economic driver in a tourism destination. Aldrich and Cliff (2003) mention that all entrepreneurs are created by their family environment and their idiosyncratic resources (Habbershon, Nordqvist & Zellweger, 2010). City planners need to be aware of each family's capability, as these families are the central pillar in developing and driving a city's growth from an economic aspect.

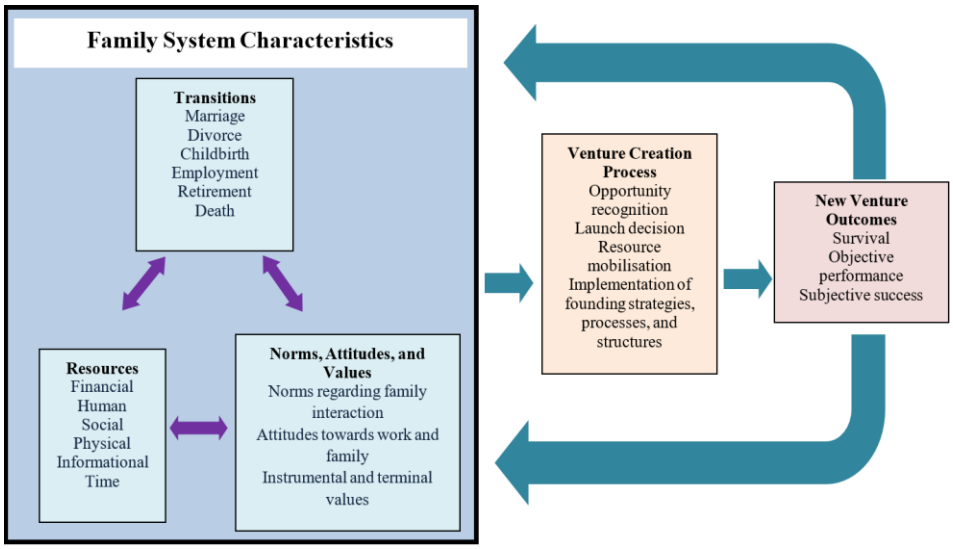

Figure 2 Family Embeddedness Perspective on New Venture Creation
Source: Aldrich and Cliff (2003)

EXISTING GAPS OF TRANSGENERATIONAL ENTREPRENEURSHIP IN TOURISM BUSINESS STUDIES

According to Aldrich and Cliff (2003), transgenerational entrepreneurship is an example of the evolution of a family's pervasive effect on the entrepreneurship life cycle objective. Jaskiewics, Combs & Rau (2015) state that entrepreneurial behaviour could become a legacy passed down in a multigenerational family that

is involved in the business. It could also come from family entrepreneurship orientation, as introduced by Zellweger, Nason and Nordqvist (2011). There are several items in family entrepreneurial orientation, which are preservation orientation, transgenerational outlook, change orientation, internal and external autonomy, risk orientation, resource focus, proactiveness, innovativeness, stability versus growth, and formality of strategising. These items guide a family to create or implement its idiosyncratic entrepreneurship in a business such that it even seems that the family perceives the business as an extension of their life or as another family member.

There are several studies on family businesses in tourism research. However, further exploration is still needed, as there is little information about family businesses in tourism (Getz, Carlsen & Morrison, 2004; Peters & Kallmuenzer, 2015). Research into family businesses has undergone some change and is now considered an independent research field (Evert et al., 2015). However, the tourism industry still does not acknowledge family businesses even though the majority of tourism businesses, especially the ones involved in hospitality, are family-controlled (Getz, Carlsen & Morrison, 2004; Peter & Kallmuenzer, 2015). Even though family businesses have evolved or have already undergone adequate progress, and have gained popularity and some measure of influence, tourism research is still lagging behind.

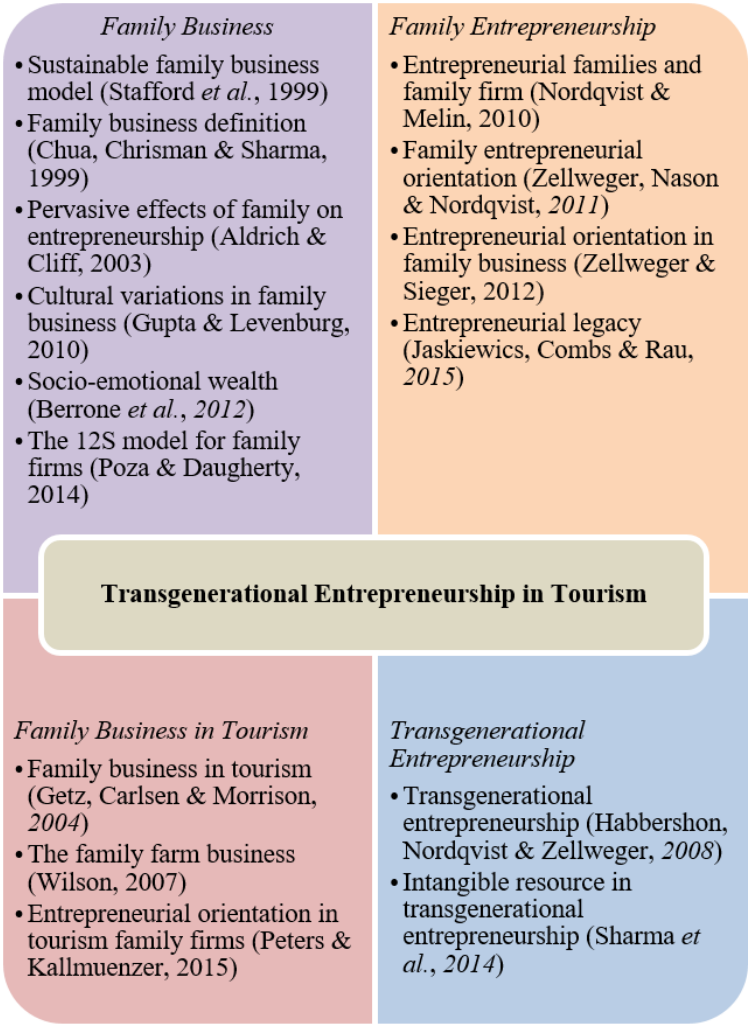

Figure 3 Chronology of Transgenerational Entrepreneurship in Tourism

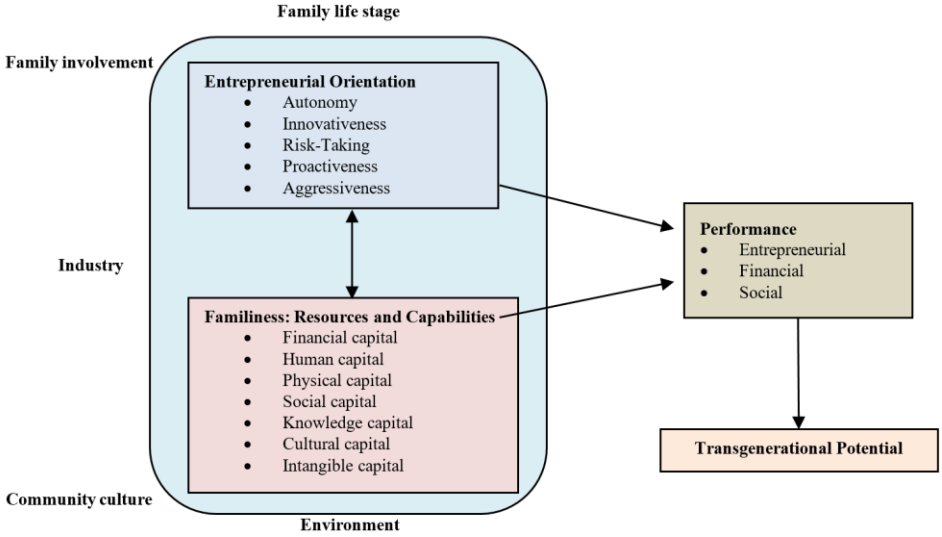

Figure 4 The Framework for European Successful Transgenerational Entrepreneurship Practice
Source: Habbershon et al. (2010)

CONCLUSION

There is little-known information about family business governance from the perspective of creating long-term intergenerational entrepreneurship (Au, Craig & Ramachandran, 2011). Several researchers have suggested focusing on family-level analysis to arrive at a clear explanation regarding family entrepreneurship through generations (Au, Craig & Ramachandran, 2011; Habbershon, Nordqvist & Zellweger, 2010; Nordqvist et al., 2011; Zellweger, Nason & Nordqvist, 2011). There is some evidence that the entrepreneurial spirit can be transmitted to the younger generation either via family's experience or the youngsters' involvement (Laspita et al., 2012; Jaskiewics, Combs & Rau, 2015). The study of entrepreneurship from an intergenerational perspective is still in the development stage. From the standpoint of family business chronology in tourism and the family business field, transgenerational entrepreneurship is well acknowledged. However, family businesses still have a long way to go to gain recognition in the tourism industry.

Countries with a high in-group collectivism such as Malaysia are characterised by 'the degree to which individuals express pride, loyalty, and cohesiveness in their organisations or families' (House et al., 2004; Laspita et al., 2012). That means that Malaysia has tremendous potential as a case study, as it has the culture of familiness, which is an important trait in transgenerational entrepreneurship practice. As family business research is based on empirical studies (Evert et al., 2015), the research needs to collect the respondent

experiences. Malaysia has great potential in this regard, as tourism is one of her major economic industries and familiness attitude is part of her culture, proving that transgenerational entrepreneurship could become an economic model for developing countries that rely on tourism as a major economic sector.

ACKNOWLEDGMENTS

This work is supported in part by FRGS under grant no. R.J130000.7821.4F774 and by GUP under grant no. Q.J130000.2521.11H51.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 115 – 122

A CURRICULUM DESIGN FOR EDUCATING CONSERVATORS OF ISLAMIC MANUSCRIPTS

Paul Hepworth[1], Karin Scheper[2], & Mandana Barkeshli[3]

[1]*Rare Book Library*
ISTANBUL UNIVERSITY
[2]*Leiden University Library*,
LEIDEN, THE NETHERLANDS
[3]*Faculty of Architecture and Environmental Design*
INTERNATIONAL ISLAMIC UNIVERSITY OF MALAYSIA

Abstract

To meet the pressing need for more training for conservators in developing countries dealing with Islamic manuscripts, a curriculum design was prepared. This details the skills and information needed and organizes instruction into modules that can be taught as a total program or semi-independently with adaptation to many different circumstances in different settings. The modules are augmented by specified objectives, possible instructional activities and assessment strategies.

Keyword: Conservation Training, Islamic manuscripts, Education

Date Received: 1st November 2016
Date of Acceptance: 21st October 2017

[1]A founding member of the Islamic Manuscript Association. Email: paulpasha@hotmail.com

INTRODUCTION

Islamic manuscripts, estimated to number in the millions, are spread out across the world, with the bulk still remaining in Islamic countries. They constitute a vital cultural heritage both in terms of intellectual content and the information that can be gleaned from their physical structures and materials about the social, artistic and technological milieus in which they were made. The work of cataloguing and digitizing these collections and of making the results available to researchers remains mostly still to be done. In the meantime, however, destruction of manuscripts by insects, war, natural disasters and poor handling and use continues apace.

The conservator has a key role in opposing these depredations. Yet in the developing world, the work of manuscript conservation and preservation is sometimes carried out by individuals who lack the necessary information, skills and practice to be effective at their jobs. This can directly jeopardize the survival of entire collections. Even on the level of individual manuscripts, this can lead to inappropriate decisions being taken during treatment that, however well-intentioned, can harm the manuscript and eradicate the information it carries about its makers and history.

In many places, those responsible for the care of these collections have limited or no access to relevant conservation education. Although trainings do take place in some countries, they are organized in an *ad hoc* fashion, often addressing only preventive conservation measures and simple repair methods, such as reported by (Ketzer, 1991) and (Biddle, 2012). Of these previous and on-going education efforts in the Islamic world, very little is ever published about how such trainings are organized, what the specific contents are, or how they could be applied to other settings - see for example reports about trainings in Timbuktu, Mali (Centre for the Study of Manuscript Cultures, 2015), in Erbil, Iraq (University of Delaware College of Arts & Sciences, 2010) and in Najaf, Iraq (Unesco Office for Iraq, 2013). In the general description of a more comprehensive educational program carried out in Mauritania (Giacomello 2009), the topics of instruction and teaching hours are specified but no mention is made of educational objectives, activities to support the trainings or methods of assessment.

Nor is education outside of the Islamic world necessarily a relevant option. As can be seen in the program descriptions on the websites of some representative universities offering conservation education, such as Camberwell College of Arts, Northumbria University, University of Delaware and New York University, the emphasis is on printed books, archival material and art on paper. So, for the few conservators-in-training from the Islamic world who can attend formal conservation education programs in developed countries, virtually nothing is taught there about the special structures and problems of Islamic manuscripts. At best, students in these programs may get some training in the conservation of

Western manuscripts. This can cause a serious unanticipated problem in that the application of some of the methodologies and approaches used on Western manuscripts to those coming from the Islamic tradition can be harmful rather than beneficial. But even more to the point, most conservators in developing countries, even if they can meet restrictive visa requirements, have neither the time nor the financial means to attend established conservation programs in Europe or the United States.

The general absence of sufficient educational opportunities in conservation in the developing world was addressed by Brown (2014). For Islamic manuscript conservation in particular, as there are no relevant programs available in Islamic countries, the need exists, therefore, for a curriculum design which is general enough to be widely applicable yet contains enough detail to be comprehensive. In simplistic terms, the problem is one of logistics: the necessary information and knowledge is not reaching the people who need it. The authors of this paper, who have all focused on the conservation of Islamic manuscripts in their own work and have extensive experience as educators, were inspired therefore to create a different educational model, published at www.hepworthscheper.com/curriculm-design-for-conservators-of-islamic-manuscripts . This project was partially funded by the International Islamic University Malaysia, which is establishing itself as a regional leader in conservation initiatives, with additional support provided by the Islamic Manuscript Association.

METHODOLOGY- SETTING THE GOALS

The underlying concept of this new model is to get information to those who need it rather than futilely expecting people with the need for it to come to the sources of information. Two factors had to be directly addressed. First, what basic set of skills, experiences and information would a functioning Islamic manuscript conservator need to have? Since conservation is a profession in which new discoveries are constantly being made and new methods tried, it would be impossible as well as impracticable to try to impart every concept and every technique. Rather, a solid foundation has to be created on which the conservator can build his or her professional career. And second, how could this fundamental education be packaged and delivered effectively? Clearly the practical constraints of time and cost had to be considered, but also widely varying needs between different individuals and different institutions. For example, conservators in a collection with a large holding of parchment leaves would benefit from more extensive training on the complex issues of parchment treatment, whereas conservators in paper-based collections would have a different focus in their training. One group of conservators might have access to scientific analytical equipment with which they would need to be familiar. Another group might have a stronger background in chemistry or greater proficiency in English which would

allow them to go more deeply into the published literature in certain areas. In other words, given the number of variables that would depend on the situation where instruction occurs, the curriculum model had to be flexible and adaptable in design.

This model begins with the compilation of a comprehensive list of the skills, competencies and concepts that a practicing Islamic manuscript conservator would need to use. This includes an understanding of the manuscripts themselves - stylistic developments, materials and methods of manufacture, art-historical context - and an understanding of the conservation issues involved - condition assessment, conservation materials and their properties, preservation requirements, and treatment methodologies. This list is the foundation on which a program could be based.

CREATING THE PROGRAM'S FRAMEWORK

Envisioning this program, the list of skills, competencies and concepts had to be sorted both by subject, those which could be naturally grouped together, and by hierarchies of importance, those of greater importance and more general applicability receiving greater attention and emphasis. A decision also had to be made about the time available for instruction. The time had to be enough so that a solid foundation of knowledge could be built, but realistic in terms of the constraints students would be likely to face.

One significant advantage in having a conservation program directed specifically towards Islamic manuscript conservation is that many general topics could be referenced only through this specific focus, which would condense instructional time. Still, the authors felt that a two-year program is the minimum for imparting the basic knowledge a starting conservator would need. The first year would be directed towards acquisition of theoretical information and learning basic practical techniques. Activities would be closely guided in this year so that student mastery of the techniques could be monitored but also because this might be the period in which they would need to be weaned from inappropriate techniques they had been practicing before.

The first year is divided into seven modules, each four weeks in length. Each module builds sequentially on the ones preceding it. Starting from Ethics and Documentation, the program then moves on, in order, to Paper, Binding Materials and Adhesives, Codicological Aspects of Islamic Manuscripts, Preservation, and two units of Conservation Techniques and Materials. Each module is then broken down into a hierarchical outline in which the key concepts are enumerated.

The curriculum model imposes no restrictions as to the instructional style the teacher will use to impart theoretical concepts. Lectures, individual and/or small-group activities, discovery-based learning or any combination of these or other approaches can be used, as appropriate or as preferred. However, in every

module, theoretical learning is always reinforced by practical work so that the students can develop and use their hand skills. Suggestions are made in each module for activities that students can undertake to apply the theoretical knowledge they have acquired. This also provides the means to assess whether the concepts have been sufficiently mastered since desired student outcomes are specified and matched to each assessment activity.

The second year is divided into five units. In each of these, the students undertake a specific project which draws on all of the theoretical knowledge they learned in the first year and necessitates their choosing and applying a variety of treatment methods. These projects include treatments of textblocks and bindings, and a project on preservation/exhibition of manuscripts.

The curriculum model is further augmented with a discussion of the type of problems that could be anticipated during implementation and the expectations that would apply to participating students and institutions. Additionally, an extensive bibliography is supplied, and the articles have been scanned so that they can be made available to students in pdf format in locations where research libraries may be weak or nonexistent. Finally, the equipment and supplies needed to apply the curriculum in a laboratory setting are supplied, along with the prices at the time the model was written. These prices will generally go up as time passes, but they still give at least a rough idea of the costs involved in supplying the materiel with which the curriculum can be implemented.

RESULTS AND PROJECT INNOVATIONS

This is the first published attempt to think about what an Islamic manuscript conservator does and, therefore, to specify what this individual needs to know to be able to work effectively. Regardless of whether the particular program being suggested is used or not, the list of competencies, skills and concepts needed by an Islamic manuscript conservator can be a resource for any future efforts to develop conservation education.

The program does not advocate a cookbook approach to conservation education. Modules are ordered in a way that made sense to the authors, but concepts can be moved and given different emphasis according to the experiences and opinions of an instructor. Similarly, the authors have intentionally resisted trying to make a one-size-fits-all type of curriculum. Indeed, in developing specific lesson plans and instructional materials, effective teachers will certainly want to refer to the treatments and objects they are familiar with in their own work that will be relevant to the place where they teach. With so many unknown variables to be faced, the authors are keenly aware that actual implementation of the curriculum will, of necessity, require hard choices being made. Given the manuscripts in a particular collection—as mentioned before, for example, the presence of many parchment leaves—it might be appropriate for topics related to parchment conservation to be given greater attention. But inevitably, other topics

will then have to be taught in less depth: the time available for instruction imposes certain fixed constraints.

Two innovative ways are identified in this model for getting conservation education to the intended audience. The first is to have the total program available in a location in the Islamic world, such as at the International Islamic University Malaysia, which can be more easily assessed by potential conservators in developing Islamic countries. They would not face the restrictive visa requirements that now often block their going to conservation programs in the US and Europe. Additionally, costs for attending the program would be significantly lower than at a Western university. And the program would specifically focus on the very objects - Islamic manuscripts - that these individuals expect to work with when they graduate. So they can get training more efficiently and with direct and immediate relevance to their work.

The second way is to teach the program as a series of linked but independent modules. A module could be taken to a particular institution and taught to its staff in a relatively short amount of time. Then as time and means become available, subsequent modules can be taught sequentially but spaced out over a longer period so that students do not have to leave their homes or jobs to get the training they need.

Although it would be ideal to have an instructor present throughout a module, the associated costs may be prohibitive and experienced instructors may not always be available. So the model also exploits the potential for affordable long-distance supervision and support provided by such technological advances on the Internet as Skype and Whatsapp.

The curriculum model builds consciously on the network of social relations in which conservators work. For proper training, access to collections is imperative. So the model seeks to engage collection-holding institutions as stake-holders who benefit directly by investing in conservation education.

Finally, this model has important potential applications to other branches of conservation. Islamic manuscript conservation is not the only area which gets little attention in Western education programs but which is the focus of work done by conservators in the developing world. Ivory conservation, rug conservation, conservation to accompany digitization, and exhibition conservation are just a few other areas that might benefit from the development of a training program along the lines proposed by this model.

CONCLUSION

Parts of the modules in this curriculum model have been implemented in manuscript-holding institutions in Turkey, Algeria, Egypt, Saudi Arabia and Malaysia. Feedback from the students has been enthusiastic and they are immediately able to demonstrate an understanding of the concepts and techniques they are learning.

The proposed model curriculum for educating conservators of Islamic manuscripts is rigorous and comprehensive. At the same time it is realistic in its goals and design. It has to be cost-effective, since both the time and money available to support education is limited. Still, it directly addresses the challenge that the potential conservators who need training are often not in locations where it is available. This curriculum model advocates bringing focused education to the people who would most use it.

Islamic manuscripts and manuscript collections vary greatly, as do the conservators that work with them. Consequently, the model is flexible and adaptable so that it can be tailored to meet different needs. Students have expectations to meet and assessment tools are specified by which their progress can be measured. They engage in a wide variety of activities and undertake different kinds of projects in different settings, so that they become familiar with the many roles of a conservator. They get both theoretical and practical knowledge and apply it to real treatment and preservation situations.

The preservation of cultural heritage depends increasingly on using available resources wisely. The conservators in developing countries who deal directly with irreplaceable collections and objects are a human resource who deserve support and encouragement. This curriculum design more effectively helps them get what they need and empowers them to be more effective in their work.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 123 – 134

A DISCOURSE ON THE PERSIAN CHAHĀR-BĀGH AS AN ISLAMIC GARDEN

Zainab Abdul Latiff[1], Mohd Yazid Mohd Yunos[2], & Maheran Mohd Yaman[3]

[1,2] *Faculty of Design and Architecture*
UNIVERSITI PUTRA MALAYSIA
[3]*Kulliyyah of Architecture and Environmental Design*
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

Abstract

The ancient garden plan, the Chahār-Bāgh, was originally put onto ground for the purpose of organizing garden in an arid landscape of Persia besides a symbol of political territory. This quadripartite plan of garden was found as early as 600 BC during Achaemenid era. Therefore, claims made in various scholarships that referred Chahār-Bāgh as an Islamic garden basic pattern is apparently deceiving the true meaning of Islam, which came into the world in seventh century. The method of content analysis and library search that emphasized on the theories and principles of Persian garden have been adopted in this study. To conclude, Chahār-Bāgh pattern preceded Islam therefore, assigning it as the basic pattern of Islamic garden planning and design is irrelevant.

Keyword: Persian garden, Chahār-Bāgh, Islamic garden, contemporary garden, planning and design

Date Received: 1st November 2016
Date of Acceptance: 21st October 2017

[1] Researcher at Universiti Putra Malaysia. Email: zal4241@yahoo.com

INTRODUCTION

Most of Iran is predominantly located at an altitude of more than one thousand metres (The Board of Persian, 2010; Kohi, 2012). Strategically located, Iran was in contact with and absorbed a variety of cultural influences from Achaemenids and the Sassanian dynasty from Fars that once ruled the country. Conversion to Islam followed the Arab conquest in the 7th century, and the country was subsequently ruled by Abbasids, Seljuks, Mongols and Timurids (Kohi, 2012). Its major area is located in the eastern Mediterranean with desert-like climate (English, 1968; Khosravi, 2014) that hinders tree planting, thus gardens were regarded as a supreme value (Turner, 2005). Though Persia was dominated by various foreign rulers, its garden survived and was adopted by successive invaders, hence the tradition became diffused throughout the world (Mahdizadeh, 2015).

THEORIES AND PRINCIPLES OF PERSIAN GARDEN

Iran's Persian gardens have become known as UNESCO World Heritage Sites. The gardens include nine gardens in the province (Wilber, 1962). "They exemplify the diversity of Persian garden designs that adapted to different climate conditions while retaining principles that have their roots in the times of Cyrus the Great in the 6th century BC" (Wilber, 1962).

The tradition of constructing gardens and designing open-air spaces in Iran has a long history (Asif et al., 2015; Hensel & Gharleghi, 2012; Rostami et al., 2014; Shakiba & Kamali, 2012). It may date back as far as 4000 BCE (Daneshdoust, 1986; English, 1968), the decorated pottery of that time displays the typical cross plan of the Persian garden that was constructed in Mesopotamia. "It was once believed that the Achaemenids modelled their gardens after those of Mesopotamia" (Shakiba & Kamali, 2012).

The physical pottery evidence shows the world represented by a plaque or bowl-appears symmetrically divided into four zones by two axes forming a cross; at the point of intersection a pool is depicted as the focal point of the world (Daneshdoust, 1986; Farroukh, n.d.) This plan was found in the Sassanian period (AD 224-641) in the hunting park (Turner, 2005). The concept of privacy is the most important concept of Persian gardens (Behbahani, Irani & Khosravi, 2006). Several methods of garden designing have existed both in the ancient Egyptian and Mesopotamian civilization under the reign of Nebuchadnezzar II (604-562 BC) (Seddigh, Karimiazari & Ghanaati, 2014). The influence of Maghreb and Mesopotamian (Ibn Balkhi, 1921) gardening techniques and concepts in the renowned 'Hanging Gardens' of Babylon is furthermore evident in the culture of Persia (Seddigh, Karimiazari & Ghanaati, 2014) due to the near vicinity of the two civilizations and the geographical similarities between the three civilizations of Persia, Maghreb and Mesopotamia (English, 1968).

The Iranian garden, as a faultless structure, has been always

demonstrated a close relationship between its cultural and natural basis (Asif et al., 2015; Daneshdoust,1986; Koshravi, 2014; Ruggles; 2008). This tradition of respecting the environment of trees and green areas was continued by the Achaemenid (550-330 BCE), the first Persian empire, and continued in the Parthian and Sassanid eras. Consequently, the Achaemenian became the novice in actualizing the concept of four-garden or Chahār-Bāgh (Seddigh, Karimiazari & Ghanaati, 2014) and the innovation of dry-land irrigation called 'qanat'.

The concept of fourfold-garden or Chahār-Bāgh started in the Achaemenid era when Cyrus the Great (6th century BC) built a royal city (Asif et al., 2015; Lehrman,1980; Lincoln, 2003). Pasargadae with a rectangular garden bed opposite the throne hall with symmetric streets and trees (Ibn Balkhi,1921). Cyrus the Great has undoubtedly employed methods inherited from Assyria and Babylon in order to deliver political messages through the architecture of Royal Gardens (English, 1968). This fourfold-garden became a quintessential structure through many centuries of later Persian garden design. This form of Chahār-Bāgh was also introduced into India in the 16th century by the first Mughal emperor, Babur (Mahdizadeh, 2015).

Pasargadae was the place where the "Persian Gardens" were formed (Mahdizadeh, 2015). Persian gardens usually made use of pools and axial canals and especially pavilions. In the royal garden of Pasargadae which appears to have been divided into four equal plots by a watercourse and a path, later became known as a Chahār-Bāgh may have contributed further to the design of earthly garden crossed by canals to imitate four rivers in the paradise (Bennis, 2006).

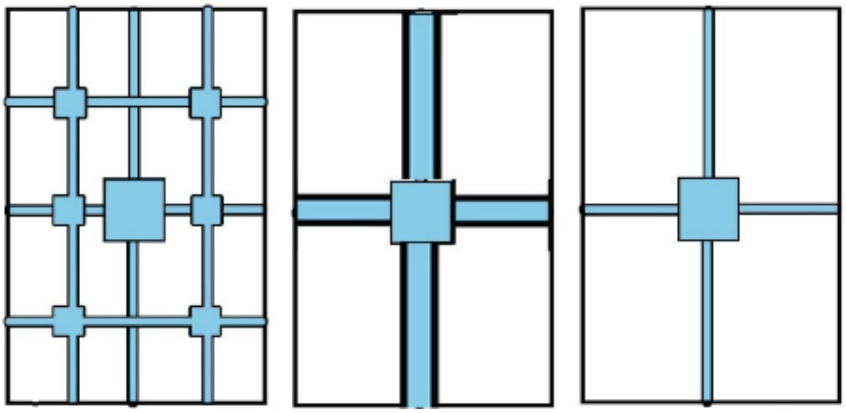

Figure 1 The Chahār-Bāgh water system in Islamic gardens

This is also the point where the application of symmetry, the Chahār-Bāgh and use of defining water courses, avenues, and the closure of vistas, terraces and kiosks originated (Kohi, 2012). "In Chahār-Bāghs, terraces symbolize the cosmic mountains, the creation of the edifice or throne at the

highest level represents the position of God. A great pool is placed in front of the edifice representing the cosmic ocean as the source of allwaters which can irrigate the whole garden. Thepresence of trees, flowers and animals around theedifice complement the figure of the universe" (Farahani, Motamed & Jamei, 2016). The gardens of the ancient world lived on in various forms and were sources of motivation for other cultures in the centuries after the end of antiquity and later, been found in Achaemenid dwellings and Parthian and Sassanian palaces (Khademi, Kabiri & Khan, 2013; Pour, Rad & Pishe, 2012; Shakiba & Kamali, 2012).

The classical Persian Chahār-Bāgh layout was found in the ancient royal garden of Achaemenid, the Pasargadae (Mahdizadeh & Sara, 2015), as one of the oldest example of fourfold prestigious garden (Pour, Rad & Pishe, 2012). "This classical layout of thegarden is the ideal model of the blissful paradise, a garden of perpetual spring, promised as a reward in the afterlife" (Mahdizadeh, 2015). Thisquadripartite (Chahār-Bāgh or four-part plan) layout is found on the land of Pasargadae, which further defines the plan of a rectilinear orchard, with pavilions that open through loggias on four sides (Shakiba & Kamali, 2012). The walled orchard, water channels, basins, fruits and shady trees, pavilions, baths and towers certainly lead us to conclude that there was some continuity in the idea of a garden through the centuries. It is necessary to define the features of the royal garden type in each period in order to retrace its evolution (Alemi, 1997). As a consequence, the concept of a walled, quadripartite garden containing a pavilion was established (Stronach, 1994).

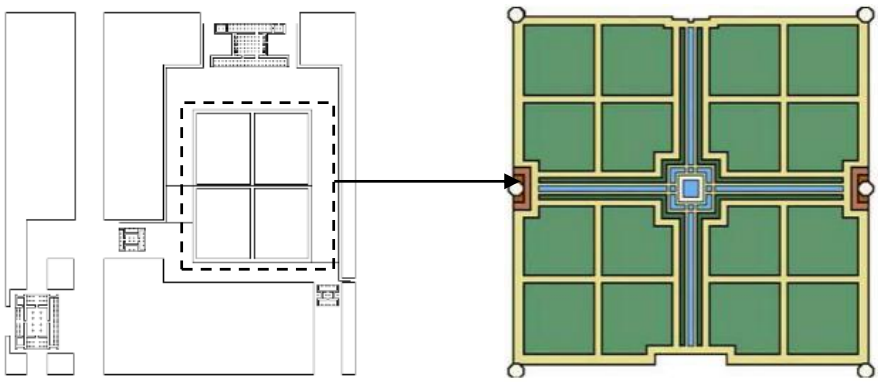

Figure 2 The plan of the Royal City of Pasargadae (Koshravi, 2014) (left) has become the basic pattern of Persian gardens (Halsted, 2014) (right)

The enclosed Persian garden became the prototype for the Islamic garden and the gardens of Mughal India. When adopted by nature loving nomadic central Asians, the gardens became royal encampments (Mahdizadeh, 2003). There is a consensus among scholars that the Chahār-Bāgh is a rectangular walled garden

layout, crossed by two main walkways (Rostami et al., 2014) or streams lined with trees and plants on their banks, intersecting at right angles (Pour, Rad & Pishe, 2012) with a kiosk or pavilion and a square basin (Kohi, 2014; Pour, Rad & Pishe, 2012), open to four views at the cross section which eventually a four-part garden is created (Rostami et al., 2014). Its major components are the kiosk, alleys, waterways, pools and planted parterres (Habashi, 2000). "It is planted with tall cypresses cast shade over most of the garden, and grass grows in place of the shrub. Roses pomegranates, jasmine, lilac and spring flowering bulbs are grown originally" (Kohi, 2014). There are four plots each with a single species of fruit tree and planted round with clover. Meanwhile, cucumbers and mulberries are planted around the base of the pavilion, apples on its south side where they are shaded by the south wall of the garden and vines on its north side where they are sheltered from the wind (Pour, Rad & Pishe, 2012).

The Chahār-Bāgh appears just like a simple manual for gardeners, as a good way of mapping out land in order to obtain an ideal garden (Habashi, 2000). "The Chahār-Bāgh is a symbol of political territory, to organize gardens, highly structured geometrical scheme. Historians believed that the term Chahār-Bāgh referred literally to a garden divided into four parts, or a multiple of four. There is no evidence to assign an Islamic identity to this garden type because the concept of quadripartite planning preceded Islam; versions of it appeared in both Mediterranean and Persian history".

The Chahār-Bāgh concept blended into Islamic gardens design through the Arabs conquest in Persia in 651. They applied Persian garden tradition at their earliest capitals at Baghdad and Samarra in the 8th and 9th centuries (Asif et al., 2015)."This quadripartite order of Pasargadae gardens has been transferred to Timurid gardens in Samarkand, gardens that were created and shaped in India during Mongol empire and Andalusian gardens in Spain" (Asif et al., 2015). Another factor is due to the incorporation of Mesopotamian and Persian tradition into the Islamic world thus the concept being carried to Syria, Egypt, Maghribi (Pour, Rad & Pishe, 2012). Spain and Kashmir (Rostami et al., 2014). Later, the Mongol empire (l286 - l353) conquest Persia then carried the Persian garden tradition to their empire to India. Accordingly, Babur introduced the Persian Garden to India in Ram Bagh garden in Agra consequently to Taj Mahal (English, 1968).

The second achievement is the innovation of qanats (Tajaddini, 2011), which became one of the most important methods of dryland irrigation during the pre-Islamic era constructed by the Achaemenid. Qanats are gently sloping tunnels dug nearly horizontally into an alluvial fan until the water table is pierced. Once constructed, ground water filters into the channel, runs down its gentle slope, and emerges at the surface as a stream (Dickie, 1976; The Board of Persian Garden, 2010; Turner, 2005). These tunnel-wells that consist of a series of wells linked up at a considerable distance (Wescoat, 1999) are widely used in the deserts for

several causes. First, qanats require no power source other than gravity to maintain flow. Second, water can be moved substantial distances in these underground conduits with least evaporation losses and little danger of pollution. Third, the flow of water in qanats is balanced to the available supply in the aquifer, and, if properly maintained, these infiltration channels yield a dependable supply of water for centuries (Dickie, 1976; Koshravi, 2014). Most of the times, these underground networks were constructed before building the actual physical structure of the cities and gardens and are widely used even in modern gardening styles (Khademi, Kabiri & Khan 2013; Khosravi, 2014).

Later, during the reign of Sassanids (3rd to 7th century CE), under the influence of Zoroastrianism, four element theory preceded. The theory was founded by Zarathustra (600-583) or also known as Zoroaster by the Greeks (Faghih & Sadeghy, 2012). Zoroastrianism was the religion of pre-Islamic Persia (The Board of the Persian, 2010). The religion set a high value for nature especially admiring and respecting the water, its mythical role has had a great influence on palace-gardens of this era. Most of the gardens in this era were founded next to springs and ponds. The figure square and number four are considered as holy. The number four shows four cardinal points (North, south, East, and west), mankind's special body features (front, back, left, and right), four basic existence elements (water, wind, soil and fire) (Akhgar & Soheilipour, 2010; Ibn Balkhi, 1921), the year seasons (spring, summer, autumn, and winter) and the number of square sides and angles. Square is also a figure having symmetry, balance, and equilibrium (Ibn Balkhi, 1921).

Zoroastrianism remained one of the most influential in the Middle East until the advent of Islam. Its followers praised trees, plants, flowers and rivers as blessed elements and they are strongly encouraged to paint and cultivate. Meanwhile, the wind, stars, the moon, the sun, springs, rivers, lands and plants are called holy creatures. Water, fire and plants are elements to be worshipped. They worship the goods and best waters (Lincoln, 2003).

During the Sasanid era, gardening and garden-making have grown and developed widely. Sasanian kings preferred to construct and built their own palaces in a place that was dominated by big pools that were filled with natural springs and fountains. Probably these natural pools and ponds have inspired the pools in the Islamic gardens. Geometrical variety is the most distinctive characteristic of the gardens of this age and the axial, central and quadripartite order and organization have been improved during this era.

Later the invasion of large parts of the Sassanid and Byzantine empires by recently converted Muslim Arabs after the seventh century CE resulted in the diffusion of the concept of the Persian garden in the Middle East. While the tradition of hunting parks declined after the advent of Islam, the design of pleasure gardens, which represented the Qur'anic paradise, was pursued by both the political authorities and the wealthy. During this period, the underground

irrigation system of qanat allowed the construction of gardens in remote areas despite climatic difficulties (Faghih & Sadeghy, 2012).

OBJECTIVE OF THE STUDY

The main objective of the study is to revisit the assignment of Chahār-Bāgh plan as an Islamic garden design pattern whereas the plan was long adopted in the past, in the organization of agricultural land of ancient Mesopotamia, Achaemenid and Sassanid.

METHODOLOGY OF THE STUDY

The following methods have been carried out in this study:

1. A close examination on written documents and plans of Pasargadae and Chahār-Bāgh; and
2. Constant comparison analysis (Onwuegbuzie, Nancy & Kathleen, 2012) on the physical features of Persian garden by grouping the texts to codes, then themes to become the key points to be discussed in each paragraph in the article.

PERSIAN GARDEN CONCEPT

Among the terms referred to garden by the Persians are rose garden (bustan, bostan, gulistan), flower gardens (Gulshan and Gulzar), pleasure ground (gulghasht), flower bed (gulkari), a nosegay (guldasta), garden of tulips (lalehzar) and the most common one is bagh. Due to a great interest in gardening among the Persians, they named their garden as 'pearadeasa', which mean 'surrounding the fort (building)', or, as they called it, 'dis'. The word 'dis' means building, and the person who constructed it is known as 'disa'. The Persian word 'pairidaeza' was derived from pairi (around) and daeza (wall), which means 'enclosed space' (Subtelny, 1997) or accumulating and fencing, which on the whole means planting trees and flowers around the building as described by Dehkhoda. This term, 'pairidaeza' is what Cyrus the Great called his garden (Ruggles, 2008) and it has been applied twice in the Zoroaster's religious book (Ibn Balkhi, 1921).

Persian gardens are always behind a wall (Chardin, 1335; Ibn Balkhi, 1921; Khademi, Kabiri & Khan, 2013), that is made up of clay, to mark the garden's boundary and as a border between the dry land outside and shady and cooling area inside (English, 1968). This wall made with no ornaments so as to create both a resting place and a secured place (Chardin, 1335; Ibn Balkhi, 1921). The walls also can be simple or carved and decorated producing a private place for relaxation and also serves as a safety protection. Wall in itself gives out a mystery and the symbol of the third dimension of the space, the wall is considered as a living spatial thing. It is a man-made ecological environment, especially its water and terrain element. Persian garden isusually referred to as having a quadripartite layout to maximize and highlight the role of geometry in the garden.

What is actually meant by symmetry in Persian gardens, however, is visual symmetry in the position and viewpoint of the onlooker from certain spots of the place in the garden (Pinder-Wilson, 1976; Titley, 1979).

A Persian garden always employs the concept of order and symmetry, owns the respect and privacy, lacks the uselessness and extremism, and is suitable for economy and resistance (Ruggles, 2008). Straight lines were used to design the garden to reduce water wastages, while at the same time divided the garden into geometrical shapes (Chardin, 1335; Stronach, 1989) of four parts, which were mostly square, or square-like rectangles that were divided into four other squares. This division continues according to the total area of the land (Chardin, 1335; Ibn Balkhi, 1921).

Persian garden is linked with water as the main source of life and abundance (Lincoln, 2003). Due to the process of irrigation, which is directly dependent on the land type, gardens were usually constructed on a steep hill with a natural slope so that natural flux could therefore create natural waterfalls (Stronach, 1989). The irrigating system of Chahār-Bāgh was used so that water comes again from the upper level to the lower one and gardener irrigates respectively each one of the four pieces by building temporary dams (Chardin, 1335; Ibn Balkhi, 1921). Water was used for irrigation and ornamentation (Khademi, Kabiri & Khan, 2013). Drowning was another irrigation scheme where all plants of a certain patch were watered by drowning of its whole area. For ornamentation purpose, centrally-placed pools (Kohi, 2012), fountains and waterways were used. Rounded pools, which later were replaced by square or rectangular shape or basins, which were sometimes shallower, were placed opposite of the garden (Stronach, 1989). From the pool, clearly defined canals stretched out along the garden's length, and often across it (Kohi, 2012).

There was also a big pond in the middle of each garden and there was a water map that run in the middle of the complex into a large pond with water view or at least a fountain, whose floors have been covered with white stones (sometimes carved to make the attractive noise of water movement possible), or glazed turquoise tiles (Chardin, 1335; Ibn Balkhi, 1921). The main waterways were lined by shady trees to maximize the functionality of water in both mythological and ornamental, besides cooling and moistening the air. Waterfalls and fountains were made wherever the natural slope allowed (Chardin, 1335; Ibn Balkhi, 1921; Subtelny, 1997) in order to produce a more interesting watercourse so that staircase could be built in the middle for the water crossing for a pleasurable sound (Chardin, 1335; Ibn Balkhi, 1921). Water features worked to increase the evaporation, and consequently to make the garden cooler and more pleasant.

Short plants were planted in half waterways; the agricultural fruit gardens were formed in geometrical separation. Evergreen and long acarpous trees were planted based on their medicinal, food and other similar qualities along with

aesthetic factors were considered (Hensel & Gharleghi, 2012). The plants were coordinated with water resources to make shadows and shades as much as possible (Moynihan,1980). Fruit trees were more common due to their usefulness. Every part of the garden was allocated to one type of fruit and good smelling flowers such as rose and damask roses were planted beside the water paths (Kohi, 2012; Shakiba & Kamali, 2012).

Vegetation includes a range of trees (Chardin, 1335; Ibn Balkhi, 1921; Khademi, Kabiri & Khan, 2013) and other plants of diverse types and functions, with or without flowers and lawn. Trees were planted according to its medicinal, food, aestheticism or any other purposeful causes (Carroll, 2003), which mainly were of three types; evergreens such as cedar, deciduous such as pine, and fruit trees (Halsted, 2014; Ibn Balkhi, 1921). Trees provided shades (Chardin, 1335; Ibn Balkhi, 1921; Khademi, Kabiri & Khan, 2013) to this arid and rainless climate to make the environment pleasant, and protected it from the intense sunlight. More fruit trees were planted in direct lines as the area of the land increases. Irrigating the trees was done by brooks and regular streams which prevented wastage of water. Because of this, most of the Persian gardens were of the same shape including a square (Arianpoor, 1365).

The soothing sound was created by the trickling water of fountains and the song of birds, as well as by conversation and song accompanied by stringed instruments (Kohi, 2012). Also present were small buildings, castles, pavilions, kiosk and other structures (Chardin, 1335; Ibn Balkhi, 1921). The garden offered passer-bys a series of spaces ideally suited for solitary meditation, while pleasing the senses. It offered the warmth of the sun and the freshness of its shade, the whispering of breezes in the leaves and the murmur of running water in the channels, the song of birds, the perfume of flowers, and the bursts of colour (Subtelny, 1997).

CONCLUSION

This article presented the origin of the ancient Persian garden's plan, the Chahār-Bāgh which was highly influenced by Zoroastrianism, and how it has influenced the Persian and Mughal gardens in later periods. It is also evident that the plan has been alleged as an Islamic garden layout plan that emulates the description of the paradise in the Qur'an. However, the Chāhār Bāgh was an irrigation plan that had already been used to irrigate Achaemenid gardens that had existed long before Islam. Since interpretations are unavoidable, therefore, contemporary Islamic garden design should cater the current needs and culture of local Muslim society and address the climate change, rather than imitating quadripartite plan in the garden's planning and design.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 135 – 146

TRANSFORMING HERITAGE BUILDING FOR COMMERCIALISATION

Prihatmanti Rani[1], Cantika Putri[2], & Adeline Devina[3]

[1,2,3]*Interior Architecture Department*
CIPUTRA UNIVERSITY, SURABAYA, INDONESIA

Abstract
Adaptive reuse is known as one of the conservation methods to prevent the building from being abandoned, dilapidated, as well as to halt further deterioration of the fabrics, both in interior and exterior. Surabaya has a number of Dutch colonial buildings as evidence of the Dutch settlements for 350 years. The aesthetic value, location and the historical significance of the buildings have made the proprietors conserving those buildings and reusing them as commercial spaces. In this research, two prominent Dutch-colonial mansions have been chosen as the research objects. Those buildings have been transformed into an upscale dining place in Surabaya, Indonesia. Based on the local regulation for heritage building conservation, the designated buildings have adhered to the conservation regulations. However, in some parts, alterations were still discovered and not according to the original of the building. These changes were purposely done in order to accommodate the business owners' need. Therefore, this paper aims to review the transformation of heritage building and the compliance to the regulation.

Keyword: Adaptive reuse, heritage building, commercialisation, transformation

Date Received: 1st November 2016
Date of Acceptance: 21st October 2017

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INTRODUCTION

Heritage building is a witness of the past that deserved to be kept to retain the memories. It is also a legacy from the past and should be preserved for our next generation. Besides, the unique building form has distinct characters from the past architectural styles. The aesthetic value embedded in the building has made heritage building interest many people. According to a study by Armitage and Irons (2013), there is a certain pleasure such as a sense of place, belonging or connection that someone could find from the aesthetic quality of heritage buildings. It is widely known from the previous research that physical quality of the building, including the layout, lighting, interior fixture and furnishings, ambience, as well as the air quality are significantly known to affect the customers' emotional response. Therefore, it could create a memorable experience to the customers, provide dining satisfactions as well as their behavioural intentions (Song, 2010; Heung & Gu, 2012); Chen, Peng & Hung, 2015). These positive impacts are significantly affecting the patrons' intention to return, spreading positive word-of-mouth, and they are also willingly to pay more (Song, 2010; Chen, Peng & Hung, 2015).

Thus, there are more and more business owners locate their restaurant in a heritage building in order to capture the patrons' experience in dining. There are five key experience design principles for designing a memorable experience, those are theme the experience, harmonise impressions with positive cues, eliminate negative cues, mix in memorabilia, and engage all the five senses (Pine & Gilmore, 1999)

This phenomenon also occurred in Surabaya where several heritage buildings are being adaptively reused into restaurants and commercial spaces. However, there are limited discussion among scholars on the transformation of the heritage building, particularly in Surabaya. Previous research studied the ventilation system in tropical-humid architecture (Prianto et al., 2000), the morphological framework of the Chinese and the European districts in Surabaya (Kwanda, 2011), the spatial planning of the Chinese architecture in Surabaya, and the environmental and heritage building conservation on the north of Surabaya (Danardi, Antariksa & Hariyani, 2010). Therefore, this research focuses on the transformation of the physical aspects of the heritage buildings that have been adaptively reused into commercial spaces.

Surabaya, the second oldest and biggest city in Indonesia, has a number of heritage buildings that have been left by the Dutch during their colonization from the year 1870 until 1940. These buildings currently became evidence of the past memories, a reference, and a legacy for the next generation. The architecture in Surabaya was developed rapidly after the year 1900 when the professional architects came from the Netherland to work in Indonesia including Surabaya. The town planning system, as well as the architectural style created by the Dutch, are still depicted in Surabaya until today. The common architectural style

commonly found in Surabaya is the Empire Style or known as The Dutch Colonial style.

The Dutch Colonial style is influenced by the neo-classical style that occurred in the Europe. however due to the high temperature and heavy rainfall, the buildings that were built in the East Indies, were made to be adaptable to the local climate and using the local materials (Handinoto, 1996). The main building are characterised by symmetrical layout and building mass, 1-2 story building with hip roof, terrace in the front part of the house, Greek-style columns that support the canopy/cantilever as a shade. In terms of the building appearance in accordance with the ventilation system, Colonial Dutch buildings are generally high in ceiling (more than 3.5 meters) and equipped with ventilation mesh, wall full of openings, tall doors and windows, hollowed attic, high roof, path around the buildings as a form of circulation, and a tower that functions as a wind catcher (Prianto et al., 2000)

ADAPTIVE REUSING HERITAGE BUILDING

UNESCO (1972) has stated that heritage is a legacy and witness from the past of the man-made environment that represents the cultural history and cannot be duplicated or replaced once lost. Moreover, it is also a source of life and inspiration for the next generation. One method for conserving heritage building is by adaptive reusing it. As stated in the Burra Charter, adaptive reuse is rehabilitating or renovating heritage buildings or structures for any uses other than the present uses (Australian ICOMOS, 1999). It involves no change to the culturally significant fabric, changes that are significantly reversible, or changes with minimal impact.

According to Rypkema (2008), there are several positive impacts in adaptive reusing heritage buildings. By adaptive reusing, it could help to reuse the existing public infrastructure. Therefore, it would be cost effective, energy conserving, as well as time saving, compare to constructing new building. Moreover, properly managed and maintained historical buildings could reduce the number of vacant buildings; create viable business districts and employment, as well as could attract visitors.

New uses of adaptive reused heritage buildings are classified into two categories, the active and the passive use. Active use can be defined as a new activity that generates sufficient income to cover restoration and maintenance costs in the adaptive reuse programme, such as hospitality (restaurants, hotels) and commercial (shops and other retails) business. While the passive use does not generate significant income to cover restoration as well as the maintenance cost. However, passive use will bring social benefits to the community such as libraries, museums, welfare housing, etc. (Pimonsathean, 2002)

The Surabaya City government has established the local regulation on heritage building classifications. There are four categories of heritage buildings

in Surabaya.

A. Building that must be maintained its original characters and fabrics where minimum intervention of the conservation methods are required;
B. Building that can be conserved in order to maintain the original characters and fabrics by restoring/rehabilitating or reconstructing;
C. Buildings that are conserved by adaptively reusing it but the building façade must be retained as it was. Alteration is only allowed on the internal parts and must suit the original design of the building;
D. Buildings that are under-utilised and in a risk of demolition. These buildings are legally allowed to be demolished and must be rebuilt as it was.

However, there is a lack of information on the category of the listed heritage buildings in Surabaya. It is compulsory to identify the category of the listed buildings before doing any conservation works.

METHODOLOGY

To obtain the objective, this research employed a qualitative descriptive method, mainly observation, and interview. This study begins with the literature review on government documents, academic journals, media publication on adaptive reuse of the designated research objects in Surabaya. An observation was conducted to obtain data on the physical aspects of the buildings studied that includes the building fabric, furniture, and furnishings, interior layout, ambience as well as the exterior condition. Interview with the proprietor of each building was also conducted in order to gain deeper data regarding the transformation of functions and form of the buildings. A descriptive analysis was used to describe the differences of the buildings before and after the alteration.

Selection of the Case Study

The buildings studied were two restaurants of more than 50 years of age, heritage listed buildings, and categorised as B class. According to the heritage regulation and UNESCO (1972), a building can be considered as heritage if it is believed to be more than 50 years of age. The studied buildings are located in the center of Surabaya where the Dutch settlement was located during their occupancy in Surabaya. Those buildings are:

The 1914 Restaurant

This restaurant is located in the Darmokali 10 street and was built by a Dutch architect named Fritz Joseph Pinedo (assisted by J. van Dongen) in 1913. Previously this building was a resident of a wealthy Chinese descent, Tan Hie Sioe. A few years later, this building was occupied by a Dutch family before it was handed over to the locals (Handinoto, 1996). In 1967, this building was managed by the French Government and converted into a French Cultural Center

(*Centre Culturel et de Cooperation Linguistique*) as well as the representative office of French Consulate General Surabaya (CCCL Surabaya) until 2012. On the same year, this building was officially gazetted by the Surabaya City government as a heritage listed building. After gazetted, it was then renovated and converted into a high-end restaurant in 2013, named The 1914 Restaurant. This restaurant is a multi-concept destination for food and beverage, entertainment, socialising, as well as for private dining. It offers a variety of Western, Mexican and Asian food, live music lounge, cigar bar, wine cellar and lounge, private function rooms and outdoor garden piazza.

In order to accommodate the concept of this restaurant, this building has undergone several major renovations in some parts of the buildings, both exterior and interior. Since this building is categorised as the B class, any restoration, rehabilitation or reconstruction works are acceptable in order to maintain the original characters of the buildings. The façade of this building is still similar although there are some effects of the alterations can be seen (refer to Fig. 1 and 2).

Figure 1 The Façade of CCCL Surabaya
Source: http://rooang.com/wp-content/uploads/2015/06/Gedung-CCCL1.jpg

Figure 2 The Current Façade of the 1914 Restaurant
Source: https://www.instagram.com/ theconsulatesurabaya/

de Soematra Function House 1910 Surabaya

This building is currently a restaurant housed in an elegantly sumptuous colonial mansion which was built in 1910. In the past, this building was occupied by the AIA Architect Bureau (*Algemeen Ingenieurs en Architecten Bureau*), a famous architectural and engineering firm during the Dutch period who produced many local landmarks in Surabaya. The location of this building (Sumatera Street/Sumatrastraat No. 75, Surabaya) is known for its luxurious heritage mansions where the Dutch lived. Along this road, there are several upscale restaurants that are occupying the heritage mansions. However, based on the observation, de Soematra is the only building with the least alteration on the architectural elements along this road (see Fig. 3 and 4). After being converted into a restaurant, this place offers five elegantly furnished halls: Indigo Room, Library Room, The Bar Room, The Dining Room, and Function Room with four lounges with a baby piano as Foyer Room, and two lounges. Nevertheless, due to the limitation of the permission in taking photographs, there are only a few images from few areas of the studied building that could be captured for this research. Fig. 3 and 4 show the similarity of the façade, before and after alterations.

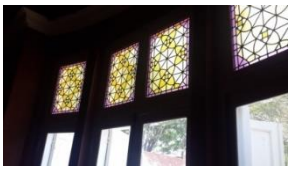
Figure 3 The Building Façade in the Past

Figure 4 The Current Building Façade
Source: http://www.de-soematra.com

RESULTS AND DISCUSSION

Since this research is focusing on the qualitative data of both buildings, observation, interview and documentation have been conducted during the data collecting period to answer the objective. The result of each building is described and tabulated in Table 1 and 2. A brief conclusion regarding the description of each building was written at the end of each table.

Table 1 The Transformation of The 1914 Restaurant

No.	Current Condition	Observation Result
1.		- The landscape and the garden feature are still maintained as it was. New plants were added to enhance the aesthetic value. - The form of the garden feature is still the same, however, the material was replaced with a different one. Previously it was made from terracotta; currently, from stone.
2.	 	- The façade is still the same, no significant alteration. - The decorative elements on the façade are well-kept as they were. - The building facade is painted in white, typical colonial building colour in Surabaya. - The stained glass is original and being carefully maintained.
3.	 	- Glass canopy is an additional feature that was added after renovation. - The 4 existing columns are kept, but 2 columns were added to support the glass canopy. - Pendant lights were added on the glass canopy to provide lighting at night.
4.	 	- The ceiling pattern is well-maintained and still in the original form. - The chandelier was replaced with the new design. - The ceiling pattern on the right image is still the same as the original building.

5.	 	- Additional railings made from wrought iron was added (left image). - The material on the column and the ornamentation (lotus motif) are maintained as they were. Lotus or *padma* (in Sanskrit) means strength, durability, passion and purity.
6.		- The position of the plants is still in the same location to filter the dust, reduce the noise and to maintain visual privacy - The wooden door panels are still maintained as they were. Restaining the wood is regularly conducted.

According to the observation result in Table 1, there are changes on the interior and architectural parts of this building. In the main building, the renovation work was fully conducted on the interior of this building. Additional features, such as glass canopy on the façade, were added to provide shelter during rain. Iron railings were also added at the main entrance. Since this building is categorised as the B class heritage building, the façade is maintained on its original characteristics as well as the building fabrics. There are additional building that was built recently in the backyard in order to accommodate the needs based on the business model of this restaurant. The materials and the structure used to renovate this heritage building were not specific for heritage building but only using ordinary building materials. This restaurant, however, does not fully comply the local regulation due to the changes on the whole building.

Table 2 The Transformation of the deSoematra Building

No.	Current Condition	Observation Result
1.		- The landscape is maintained as it was, but some plants were added to enhance the aesthetic value of this area. - The garden patio was also included in the original building.
2.		- There are no changes on the building façade, including the columns, window panes, door panels, air vents and the roof. - Decorative lightings were added to add the dramatic ambience of the façade.
3.		- The wall is decorated with old pictures of the building to retain the past memories. - The double swing doors are still maintained in their original form, only repainted to suit the overall ambience.
4.	 	- The furniture is newly made but the design and the materials selected were made to suit the overall heritage yet elegant ambience.

5.	  	- There are no changes on the architectural elements, including the room layout, throughout the building such as the air vents, fascia board, floor tiles, ceiling pattern, and many others. - Additional elements such as chandeliers, partitions, drapes, furniture, wall and table accessories were added to enhance the elegant ambience of this fine dining restaurant. - Drop ceiling was added to emphasise certain area on this building. Cove and hidden lighting was also added to create a dramatic atmosphere.

Table 2 shows the studied building already adheres to the principles of conservation as well as the conservation regulation. Despite the changes on the interior, the architectural elements including the layout as well as the façade are still maintained as they were. The conservation work was done according to the original design of the building and maintained regularly until today. The interior design, including the furniture and the embellishments, were well-furnished to perform the elegance of this building. This building is one of the good examples of heritage building conservation in Surabaya.

CONCLUSION

This research has highlighted the compliance of the heritage building conservation in Surabaya. Two heritage buildings that have been adaptively reused into high-end restaurant were chosen as the research objects. Both buildings were built more than 50 years ago and listed as the national heritage building based on the Surabaya City regulation. According to the regulations, alterations are strictly prohibited on the façade of the buildings to maintain the cultural significance of the building. The local government should be more aware of the heritage listed buildings that are being conserved. They have to ensure that any conservation work must comply with the standards, and are according to the classification of the building. The buildings which are listed must be updated regularly as well as the category of the buildings. The main purpose is to

safeguard heritage buildings and to prevent any conservation work that might jeopardise the heritage value of the buildings.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 147 – 158

A REVIEW ON OCCUPANTS' SATISFACTION AND WELLNESS LEVEL IN LOW-COST HOUSING IN MALAYSIA

Alice Sabrina Ismail[1], Hazrina Haja Bava Mohidin[2], & Muhammad Muhaimi Daud[3]

[1,2,3]*Department of Architecture*
UNIVERSITI TEKNOLOGI MALAYSIA

Abstract
The purpose of this study is to ascertain how architecture could impede stress level among low-cost housing occupants in Malaysia based on design implementations. The home environment is one of the main contributing factors for the occurrence of stress among occupants as much of individuals' lives are spent indoor. Based on this, architecture plays a major role in minimizing the stress level among occupants of a building. This research analyses the wellness of low-cost housing owners and occupants through observation and questionnaires that were distributed to low-cost housing residents. This study found that there are four key factors that contributed to stress among occupants. It is, therefore, hoped that the findings of this paper help designers to design better low-cost houses in order to provide a better living environment to the occupants.

Keyword: Low-cost housing in Malaysia; low-cost spatial design; occupants wellness; low-cost housing occupants

Date Received: 1st November 2016
Date of Acceptance: 21st October 2017

[1]Assistant Professor at International Islamic University Malaysia. Email: aida_kesuma@iium.edu.my

INTRODUCTION

Low-cost housing projects in Malaysia have been one of the solution to cater the housing needs of urban B40. However, the poor design quality of these low-cost houses is becoming more apparent due to low prices and short construction period (Economic Planning Unit, 2010). Low-cost houses have also become less sensitive towards regional climate and residents' satisfaction and comfort.

Past researches on low-cost housing have touched on the safety and satisfaction of the residents and its sustainable adaptations. However, none of these discussed on the architectural design aspects especially in observing the spatial planning of a low-cost housing design and its influence on the wellness of the occupants.

This study, firstly, highlights the possible factors that cause disturbance and stress among residents of some of the existing low-cost housing. Later, design solutions that could maximize users satisfaction in living comfortably in a low-cost house are proposed.

LOW-COST HOUSING IN MALAYSIA

In Malaysia, a low-cost house must have a built-up of not less than 60 meter^2 and with a price range of RM25, 000.00- RM42, 000.00 per unit depending on the land cost. Low-cost houses are usually reserved for the lower income category or also known as the B40 household group (bottom 40% of the total Malaysian population). In a housing development project, the local planning authority may impose that 30% of the total unit of houses must be low-cost houses.

Low-cost houses are usually built on cheaper lands and designed to the minium standard of the Construction Industry Standard (CIS). In areas where land are scarce, such as Kuala Lumpur, low-cost houses are built vertically in stacks or also known as low-cost flats. In other areas where land is cheaper, low-cost houses may be built as landed properties.

A typical low-cost housing unit has very limited space that for only necessary functions at minimum standards suitable for human dwelling (Zaid & Graham, 2011). A low-cost house usually comes with 2-3 bedrooms, 1-2 bathroom(s), a single unit of a kitchen, living room and dining area. Most of the low-cost houses have simple layout design. The spatial arrangement in a typical low-cost house usually begins with the entrance or doorway, which will then lead to the kitchen, living room, and bedrooms. Occupants would be connected to the toilet and dining area from these points onwards. The zonings in a low-cost house design comprise public and private areas. For the public area, most of the social interaction spaces such as the living room and dining area could be freely accessed by visitors, while the private areas such as the bedrooms, toilet and kitchen are spaces mainly for the residents.

LOW-COST HOUSING DESIGN AND ITS INFLUENCE TOWARDS OCCUPANTS' WELLNESS

A healthy environment for a living starts from home. One of the most common problems that people are facing at home is stress. There are several factors that contribute to this problem. The first being the ergonomics of design layout and spatial arrangements in a house, insufficient green areas including landscaping and recreational area, compromised indoor comfort, and improper services and facilities area. As low-cost houses are built on a small budget, this affects the design, planning and construction of the houses. These four aspects have been discussed consistently but not simultaneously in all the Malaysian Plans even as early as during Tunku Abdul Rahman's era (Zaid & Graham, 2011).

The Ergonomics of Design and Spatial Arrangement in a Low-Cost House

The term ergonomics in design often consider users' individual differences and their different characteristics, such as gender, age, and physical and mental conditions (Soares & Rebelo, 2012). Architects, as the intermediary persons between clients and craftsmen, have the ultimate say in design decision-making process. They are, therefore, required to know who will be using the particular living space. As Rasdi et al. (2005) points out, house planning and design should consider the activity and functions to be held in the house. In planning and designing a house on a limited budget, architects must take note of the main spaces with regards to privacy, functions, and adaptability. Therefore, a good house should have a proper demarcation between the private and public, feminine and masculine and other internal boundaries (Munro & Madigan, 1999). There should be an intermediate interface space that draws a line between these areas. The interface area should act as a link between private and public areas. Effective zoning could ensure the privacy of the occupants. It also gives an illusion of the termination of a public area to hinder visitors from entering into the private area.

A house designed for a family should also prioritize function and adaptability of a house, especially in a limited confined space. According to Munro & Madigan (1999), a family home could turn out to be a prison and the locus of oppression, that frustrates home dwellers resulting in increase household complications such as an increase in divorce rate, depression among children and stressful lifestyle.

As put forth by Rasdi (2005), the open-plan concept, with various forms of physical and symbolic barriers are necessary for a house. This could be achieved by segregating guest zone in the front and family zone at the rear of the house whenever there are visitors. This type of zoning can be defined by space planning as well as creating different floor levels according to the function of the space (Rasdi et al., 2005). Apart from having spaces planned in such a manner, colors too play a significant role in decreasing the presence of household complications. Colors are known to lift up the mood of the occupants, thus

resulting in a better family wellness (Herneoja, 2008).

Compromised Indoor Comfort

Indoor comfort is affected by openings and materials. There are three main roles of an opening. The first is to allow air into the building, second, it allows daylighting to penetrate into the house and, lastly, it frames the view.

An effective opening promotes air flow and air change rate (Lim, 2013). This is to avoid hot air from being trapped inside the house and cause thermal discomfort among occupants of the building. As Malaysia is a country with hot and humid climate, adequate placement of openings throughout the house is seen crucial to maintaining a comfortable living among low-cost housing residents (Lim, 2013).

Openings also could avoid the usage of artificial lighting during the day. The size, placement and shading device applied on the opening control the amount of necessary day lighting penetrating the interior spaces (Lim, 2013; Zain-Ahmed et al., 2002). As Malaysia is blessed with abundance of sunshine throughout the day, maximizing daylighting as a source of natural lighting is seen as a great way in promoting sustainability. However, excessive day lighting especially caused by bad window placement could cause glare and this would cause discomfort to the dwellers (Lim, 2013). Designers are taught to minimize openings on the east and west-facing walls to avoid glare into the building. Adequate day lighting is important in the well-being of the occupant as too little and too much daylighting could cause stress and discomfort (Lim, 2013).

Windows frame exterior views. However, window design is crucial in a low-cost house as the houses are usually designed back-to-back to increase land use. Today's low-cost houses designers have ignored the importance of windows in promoting comfortable living space. Its placements should not be parallel with the ones that are being placed on the opposite house unit (Rasdi et al., 2005). Designers should design windows with regards to users privacy as improperly placed windows could invite intrusion of neighbours' view into private boundaries.

Materials used for house construction is also important. The right choice of materials could avoid the building wall from gaining heat (Muhammad Azzam & Fahanim, 2011). This results in a milder indoor environment. Muhammad Azzam and Fahanim (2011) suggest that using natural building material obtained indegeniously could promote to better indoor comfort among home dwellers. However, this is seen impractical as natural material such as timber, bamboo or mud are far-reaching and their use in construction need skilled craftsmen. Since low-cost housing has a cost constraint, natural building material has never become an option for the developers.

Good quality building material is also required in order to ensure long lasting façade. This is important as low-quality material are more susceptible to

damage, and this leads to cracks and increases dampness in walls especially in Malaysia's hot and humid climate (Wahab, Khamidi & Ismail, 2013). Damp and mouldy walls expose residents to sick building syndrome and cause discomfort to them.

Insufficient Green Areas, Landscaping and Recreational Area

Landscape is seen crucial in promoting healthy living (Bedimo-Rung, Mowen & Cohen, 2005). Apart from providing comfortable living at home, the surrounding environment at the housing area is also important in promoting family wellness. Low-cost housing with limited land can take the initiative of turning the small unused land into pocket green spaces. These green spaces can provide recreational area especially for children around the low-cost neighbourhood apart from being the best place to ease stress (Godbey, 2009). A family could also spend more time outdoor at these pocket green parks doing recreational activities together to strengthen their family bond.

Improper Service Area

A properly managed housing area will not only sufficiently provide a waste-dumping area, but it will also need to think of the best place to locate it (Subhan, Abdul Ghani & Joarder, 2014). It is important that waste-dumping area cannot be left unattended as it could cause tremendous health concerns due to pests and vectors. The dumping area can also be an eye-sore if placed at prime location in the housing area. Thus, it is best kept far from the main entry point of the housing area. It should, however, be accessible to all residents. The best place to provide waste-dumping area would be at the rear of the housing are plot. This would ensure that the waste-dumping area is kept hidden, away from public view while accessible by waste collecting trucks. This is to ensure a better living environment for the nearby residents (Abu Eusuf et al., 2011)

METHODOLOGY

This research will be using multiple case study method where observation and dichotomous close-ended questionnaire with the residents will be done in parallel. Interpretivism paradigm was chosen as the research method as it involves researchers and the residents to interpret elements. It is, therefore, encouraging human involvement into the study of interpretation. Semiotic is paired with interpretivism as it involves the study of meaning and sign (Mohidin & Ismail, 2015). This proposed methodological framework is considered as an important contribution as it introduces new ways of looking at low-cost houses as a system of 'sign' as well as proposing various indicators in order to investigate this matter in depth. This study builds upon the theories and concepts outlined by Saussure on sign relations, Barthes on levels of signification, and Gottdiener on reading the material culture as reliable ways for analysing and understanding the

residential building (Ismail, 2008).

FINDINGS

For this study, Taman Dagang Jaya Flats was chosen as the case study. Taman Dagang Jaya Flats is a low-cost flat located in Ampang, Selangor. The area was developed over 25 years ago. Units were sold at RM25,000 when they were first opened to the public. Now, the value of Taman Dagang Jaya Flat has doubled. Due to its strategic location and easily accessible by Light Rail Transit (LRT), it has been one of the fastest selling low-cost flat in Selangor.

Design and Spatial Arrangements

Taman Dagang Jaya Flats is a cluster of a ten blocks of low-cost flats. All the blocks are four storey walk-up flats. Each unit of the house is made up of 650 sqft of floor area, comprising two bedrooms, one shared toilet, a kitchen, a living room, and a dining area. Units on the ground floor have an alternative entrance that is directly connected to the the corridor from the kitchen. Meanwhile, for units on the upper floors, this space is reserved for laundry activities and has no direct access from the corridor to ensure safety and security.

Based on observation of the design layout, the spaces are zoned accordingly with a guest zone in front and family zone at the rear of the house whenever there are visitors to the house. However, the toilet is placed too far away from the bedroom and home dwellers need to by-pass the living room and kitchen to utilize the toilet. This is seen as a very stressful design feature as the toilet is not freely accessible and spaces are not demarcated based on comfort and gemder boundaries. The corridor is also too narrow, making it an uncomfortable for the homeowners to open their doors as the main entrances are too close to one another at only approximately 1.2 meters apart.

Indoor Comfort

As for the indoor comfort, all of the rooms have louvered window panes that can be tilted according to the needs of day lighting and air flow into the house. It is also noticeable that the kitchen has ample openings to ensure sufficient natural ventilation. As Taman Dagang Jaya Flat is a low-cost housing, it is unavoidable to see the usage of modern construction materials especially on the envelope of the building as natural material is impossible due to its cost and maintenance.

Green Areas, Landscaping and Recreational Area

Green areas and recreational areas are provided at the flats. Although the landscape area may not be properly designed, at least the residents still have ample outdoor space for recreational purposes. Additionally, children's playground and a football field were also provided. In the afternoon, these areas are flocked by children and youths from the flats for outdoor recreation.

Service Area

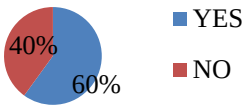
From observation, it was apparent that the placement of the waste-dumping site is taken for granted. In a recent report, the residents of Taman Dagang Jaya Flat expressed their concern towards health and cleanliness of their housing area, and demanded the local authority to take action for a change. The residents also feel that waste-dumping facilities need upgrading to help improve the living condition in the flats.

Residents Satisfaction Level

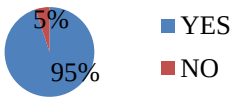
60 respondents at Taman Dagang Jaya Flats were selected as sample for the perception survey to gauge residents satisfaction level of their housing area and how it affects their family wellbeing. The respondents were asked based on the four categories; design and space arrangements, indoor comfort, green areas, landscape and recreational area and service area. The results of the questionnaire are outlined as below:

a. Design and space arrangements

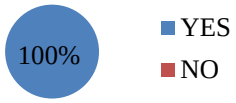
1. Do you feel stress at home?



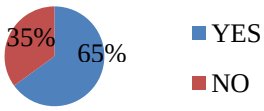
2. When at home, do the spaces contribute to the level of your stress?



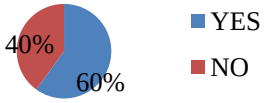
3. Do you feel that the spaces provided in the house a little cramped and inadequate in its size?



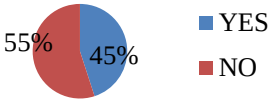
4. Does your unit have openings that are exposed to unpleasant views?



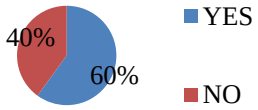
5. Does your unit have openings that are too close to your neighbour?



6. Does the presence of neighbors contribute to the level of your stress?

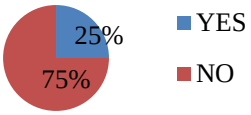


7. Do you think the color of the building is dull and causing stress among residents?

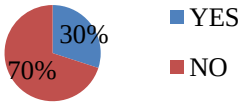


b. Indoor comfort

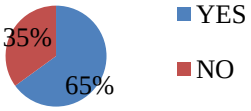
1. Is your house naturally lit during the day?



2. Is there sufficient air flow that cools the house?

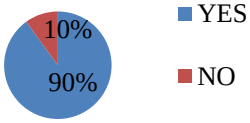


3. Are there any serious cracks on your walls that lead to dampness and moulds?

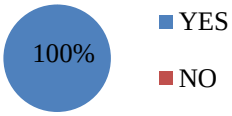


c. Green areas, landscape and recreational areas

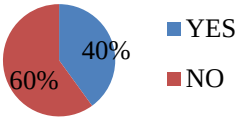
1. Are there ample green areas for recreational purposes?



2. Is there a playground provided for the children?

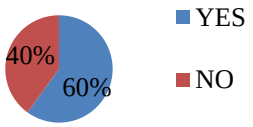


3. Do you think that the living environment you are currently in is affecting your health and stress level?

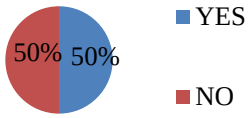


d. Service area

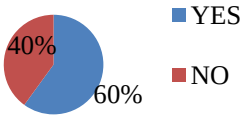
1. Are the services provided at your residential area sufficient?



2. Is the waste-dumping area located appropriately?



3. Do you think an upgrade to some of the services is needed to ensure healthier and cleaner lifestyle?



DISCUSSION

With reference to the above analysis, most residents felt that the interior spaces of their home were insufficient. The lack of personal space meant that most of the time residents have to share their spaces with everyone in the household. Apart from that, the intrusion of neighbours' view into the house has led to serious privacy issue, which in turn, caused most homeowners to avoid opening their main door at most of the time. This led to lack of indoor comfort as they could not make full use of the openings in order to have effective ventilation and adequate natural day lighting.

More than 50% of the residents had noticed the formation of moulds on walls. This could be due the use of lower quality construction materials. The presence of dampness and moulds could lead to serious health problems and uncomfortable living.

The residents were also aware of their surrounding condition as much as they are concern with their personal housing units. This was because it has become more and more apparent that the surrounding living environment needed attention and upgrade by the local authority. This was due to insufficient dumping bins, and dirty waste-dumping facility.

The residents were satisfied with the green areas and recreational areas provided for them. The residents were aware of the importance of properly managed, healthy and clean living environment as the key factor to a good family wellbeing.

RECOMMENDATIONS

Based on the findings from the observation and survey conducted, below are some guidelines in promoting wellness level while decreasing stress level:

i. To increase the percentage of personal space which can be turned into multi-functional spaces or flexible space – this is to avoid wastage of space while having sufficient personal space for individual wellness;
ii. To introduce the usage of sustainable and long lasting materials that are harmless to the environment; and
iii. To increase green spaces including designs of courtyards and stairwells for natural ventilations to increase air flow and maximize daylighting.

CONCLUSION

From the above study, it is clearly noted that all of the categories except green, landscape, and recreational areas, contributed to the level of stress and wellbeing of the residents at Taman Dagang Jaya Ampang. Design and spatial arrangement of the houses were found to be the main reasons. Insufficient space was provided in the unit and there was no special area in the unit that promotes personal space due to space requirement constraint. These two elements should be given attention by the government and the designers of low-cost houses so that residents of low-cost houses can enjoy a more stress-free living environment.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 159 – 170

GIS APPLICATION IN COASTAL MANAGEMENT: THE PERSPECTIVES OF GOVERNMENT AGENCIES IN SELANGOR

Tuminah Paiman,[1] & M. Zainora Asmawi[2]

Kulliyyah of Architecture and Environmental Design
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

Abstract

The coastal area is highly considered as one of the most complex areas to be handled by the traditional planning system. In managing coastal areas, there must be integrated coastal management between various related agencies, technically and physically. The management of the coastal area depends on the coastal manager's ability to recognize and comprehend the complexity of natural coastal processes. Thus, this paper addresses how GIS tool is embedded in the coastal management system from the perspectives of government agencies in Selangor. The objectives of this research are: to identify the present integration between coastal management and GIS at government agencies in Selangor coastal districts; and to study the application of GIS and related spatial information technologies to local government officials. Data were gathered through survey. The findings show positive relationship between coastal management and GIS in Selangor. Government agencies indeed has actively been using GIS as part of the management tool of the coastal area in Selangor This may eventually lead to GIS application being recognised as a significant tool to be used in coastal management.

Keyword: coastal management, government agencies, GIS implementation

Date Received: 31st May 2017
Date of Acceptance: 21st October 2017

[1]Ph.D candidate at International Islamic University Malaysia. Email: tuminah01@gmail.com

INTRODUCTION

The coastal area is considered one of the most complex areas to be handled through traditional planning system. In managing coastal areas, there must be integrated coastal management between various related agencies, technically and physically (Sousa et al., 2016). Nowadays, Geographic Information System (GIS) is becoming a utility for analysing the dynamics of the coastal areas. Among the frequent users of GIS whose works relate to the coastal areas are town planners, engineers and land managers, who are concerned with the spatial and time distribution of coastal changes like landslides and sediment drift, whilst identifying possible causes and consequences.

To record coastal behaviour, a multi-temporal study where large quantity of data in various types and from various sources are collected for a better description of the coastal behaviour. Therefore, a reliable inventory describing the type of activities in coastal area is needed before any analysis takes place (Martínez-Harms & Balvanera, 2012). What needs to be noted is that management of coastal area depends on the coastal manager's ability to acknowledge and comprehend the complexity of natural coastal processes.

Modelling natural coastal processes requires the ability to combine both spatial and non-spatial information from multiple datasets. GIS could integrate physical, ecological, socio-economic and hazards information, which makes it among the best assessment tools to support management efforts in coastal area. Through GIS' practises, coastal managers are able to model vulnerability to coastal erosion, sea-level rise and other threats so that decision makers have the necessary information to protect local communities and effectively manage coastal natural resources (Templer et al., 2016). Thus, this study explore the application of GIS in coastal management in Selangor coastal districts.

GEOGRAPHICAL INFORMATION SYSTEM (GIS) IN COASTAL MANAGEMENT

Globally, coastlines are undergoing rapid development, and therefore firm management policies have to be established. However, for any coastal management to be effective, the policies need to be based on informed decision-making. This in turn requires ready access to appropriate, reliable and timely data and information in a suitable form for the task at hand.

Since much of these information and data is likely to have spatial components, GIS can contribute significantly to coastal management in a number of ways: it can handle much larger databases, and integrate and synthesize data from a much wider range of relevant criteria than might be achieved through manual methods. GIS encourages the development and use of standards for coastal data definition, collection and storage, which promotes compatibility of data and processing techniques between projects and between departments, as

well as ensuring consistency of approach at any one site over time (Bartlett & Celliers, 2016).

The coastal area is highly dynamic, and scientists or managers increasingly require access to technologies that can represent these dynamics, particularly to evaluate and deal appropriately with changes in the geometry of the shore. Two main divisions of coastal change analysis may be recognized: monitoring and simulation modelling. GIS has been applied to coastlines planning, management and monitoring in order to keep track of a wide range of natural and human-induced changes. While monitoring can help to identify and evaluate changes that are taking place on the shore, effective management of the coastal area occasionally requires intervention and manipulation of the processes, controls, feedback and inter-relationships at work along, within and across the shore, in order to arrive at more desirable results (Islam & Sugianto, 2007).

Modelling and simulation of coastal phenomena are extremely valuable techniques for assessing the effectiveness and likely impacts of such intervention. By combining rapid data retrieval with analytical and modelling functions, GIS can respond rapidly and flexibly to ad hoc "what if" questions. Thus, a well-designed coastal area information system could be a significant decision support tool to aid the development of integrated and sustainable coastal resource management strategies (Eldrandaly & Naguib. 2013). The use of maps and spatial information in natural resource management and land-use planning is essential to improving the sustainable and equitable use of land and natural resources through participatory community and local level planning and investment.

GIS can be used for any number of coastal management applications, like improving the administration and enforcement of zoning ordinances. It can measure distances and areas, and thus determine a minimum lot width of 100 ft. and minimum lot size of 20,000 sq. ft. as often mandated in subdivision regulations. Alternatively, GIS can also be used to generate buffers around lines or designated areas.

The benefits of application of GIS approach to coastal management include:

1. The ability to model, test and compare alternative scenarios - before the proposed strategy is imposed on the real world;
2. The ability to handle much larger databases, and to integrate and synthesize data. This leads to a more holistic and coordinated management strategies; and
3. Enhanced capacity for data exchange.

There are few successful GIS tools that have been used in managing coastal area. These are listed in Table 1.

Table 1 Example of GIS application used in coastal management

Component of coastal management	Application/Tools	Country
Huge databases and models	Geographical Information Infrastructure (GII) Monitoring the Netherlands' coastal zone. Risk management 'Eagle Suite.'	Rijkswaterstaat (RWS) / Ministry of Transport, Public Works and Water Management, Netherland
Management strategies	The COSMO (Coastal zone Simulation Model) Coastal Zone Management Centre, the Netherlands.	(SAMPAK – Thailand) (COMA – West Africa) (CORAL – Maldives) (DSMOZ – Mozambique)
Policy alternatives	RamCo (Rapid Assessment Module for Coastal Zones) Policymakers: climate change, demographic growth or changing economic demand.	Research Institute for Knowledge Systems (RIKS), the Netherlands
Coastline Management	SHO-MAN (the SHOreline MANagement tool): assessing the impact of management actions on the development of the coastline.	National Institute for Coastal and Marine Management, The Netherlands

Research Methodology

This study employed multi-methods for data collection. These include questionnaire survey, interviews and literature review. Thus, these data were triangulated to establish the findings (Thurmond, 2001; Olsen, 2004).

The selected respondents for the questionnaire survey and interviews were those who were well-versed in the field and have experience on the implementation and practice of planning and coastal initiatives. They were selected as respondents because:

i. they are the officers involved in coastal management in Selangor;
ii. they are aware of the current scenario of coastal management planning; and
iii. the questionnaire requires professional perspective of those who have dealt with coastal management planning.

Data were analysed for mean and standard deviation in order to observe the central tendency of the variables and also to measure the average score for the participants on the given study. Individual and average values for mean and standard deviation were also shown in order to demonstrate the consistency of the data.

The Kruskal-Wallis test was also employed for multivariate analysis. It is a nonparametric (distribution free) test, and is used when the assumptions of ANOVA are not met. The test is used to identify significant differences on a continuous dependent variable by grouping independent variables (with three or more groups) (Kruskal & Wallis, 1952). The test is represented by the following formula:

$$H = \frac{12}{n\,(n+1)} \sum_{i-1}^{\kappa} \frac{R_i^{\,2}}{} - 3\,(n+1)$$

Where,
H = Kruskal-Wallis Test statistic
N = total number of observations in ail samples
T_i = Sum of the ranks assigned

The Kruskal-Wallis test statistic is approximately a chi-square distribution, where k-1 should be greater than 5. If the degree of freedom where the m calculated value of the Kruskal-Wallis test is less than the critical chi-square value, then the null hypothesis cannot be rejected. If the calculated value of the Kruskal-Wallis test is greater than the critical chi-square value, then the null hypothesis can be rejected and it can be concluded that the sample comes from a different population.

Assessing the significance of H depends on the number of participants and the number of groups. If there are more than three groups with more than five participants per group, then H shall be treated as Chi-Square. H is statistically significant if it is equal to or larger than the critical value of Chi-Square for a particular degree of freedom. Therefore, Kruskall-Wallis test was chosen because there were more than 3 samples of population for this research that need to be analysed.

THE PERSPECTIVES OF GOVERNMENT AGENCIES IN SELANGOR

In determining whether GIS application in coastal management has impacted agencies' variation in the benefits of GIS, the mean difference between the benefits reaped by agencies was tested for One-Way ANOVA Kruskal Wallis analysis measurement. Based on Table 2 below, at 9 degree of freedom, with a calculation where $\chi 2\ (9) = 16.919$, $p = 0.\ 000 < 0.05$, has led to the rejection of difference in means for perception on the usage of GIS application in coastal management. This is supported by the significant value 0.000 which is less than 0.05.

Table 2 GIS Application

Department/Agencies	**YES**	**NO**
Lembaga Urus Air Selangor (LUAS)	49.21	50.54
Department of Drainage and Irrigation (DID)	62.18	56.11
Malaysia Geospatial Data Infrastructure (MyGDI)	11.00	11.00
PLANMalaysia	11.00	11.00
Department of Forestry	56.60	51.10
Majlis Daerah Kuala Langat (MDKL)	39.50	51.00
Majlis Perbandaran Sepang (MPSp)	39.50	43.95
Majlis Perbandaran Klang (MPK)	39.50	45.13
Majlis Daerah Kuala Selangor (MDKS)	39.50	63.00
Majlis Daerah Sabak Bernam (MDSB)	49.00	43.17
Test Statistics[a,b]		
Chi-Square	56.887	13.593
df	9	9
Asymp. Sig.	.000	.138
a. Kruskal Wallis Test		
b. Grouping Variable: Department/Agencies		

Generally, coastal management is well-known in Selangor but this may not be the case for GIS. However, GIS application has nevertheless become a medium of information widely used in planning related sectors nowadays. Official websites of government offices such as PLANMalaysia and local authorities use GIS application for local communities, developers and others to seek and find information related to their land using the GIS tool which are embedded into the websites.

Officer from MyGDI also affirmed that their department is working hard in providing information directly and allowing it to be easily accessed by various parties using GIS tools. MyGDI has launched MyGDI programme, which is an initiative by the federal government to develop Geospatial Data Infrastructure sharing platform. The program was developed to raise the awareness of government agencies and local people about the availability of data. Planner from Majlis Daerah Kuala Selangor also revealed that GIS can be accessed by local people. The Kuala Selangor municipal council have prepared GIS counters and portable computer-operated machines that can be found at the entrance of the municipal building. Local people have two choices: either to ask for assistance with GIS at the counter or personally check it using the provided machines.

Usage of GIS in Coastal Management

Kruskal Wallis is a one way ANOVA test, ascertaining the differences of any means value between any groups is influenced by any intervention χ factor. It was assumed that the dependent variable had an ordinal scaled data and selective sampling group. For this study, the hypothesis to be tested was the significant

differences of mean of coastal management issues should be resolved using GIS application between different agencies and departments.

Table 3 Kruskal Wallis Descriptive for Mean Differences of Resolving coastal management issues by using GIS application

Department	Integrated management and sustainable development of coastal and marine areas	Marine environment	Sustainable use and conservation of marine living resources	Addressing critical uncertainties for the management of the coastal area
LUAS	51.50	37.00	37.61	63.71
DID	39.14	44.55	48.95	35.41
MyGDI	39.14	44.55	48.95	31.05
PLANMalaysia	32.38	47.38	41.88	37.25
Forestry	31.50	45.30	36.70	33.60
MDKL	77.00	37.00	16.00	55.50
MPSp	38.50	41.15	48.80	35.90
MPK	19.25	37.00	31.13	46.38
MDKS	28.00	37.00	50.50	37.25
MDSB	77.00	37.00	16.00	55.50
Test Statistics[a,b]				
Chi-Square	31.523	6.397	15.884	23.234
df	9	9	9	9
Asymp. Sig.	.000	.700	0.69	.006

a. Kruskal Wallis Test
b. Grouping Variable: Department/Agencies

In determining whether GIS application in coastal management has impacted agencies' variation in benefiting GIS, the means difference between the benefits reaped by agencies have been tested for One-Way ANOVA Kruskal Wallis analysis measurement. Based on Table 3 above, at 9 degree of freedom, with a calculation where $\chi 2$ (9) = 16.919, p = 0. 006 < 0.05, the mean rank of 31.523 (integrated management and sustainable development of coastal and marine areas) and 23.234 (addressing critical uncertainties for the management of the coastal area) has led to the rejection of difference in means for whether agencies in areas of GIS application is useful in coastal management. This is supported by the significant value 0.000 which is less than 0.05. Hence, human activities involving various land use activities sometimes place demands on coastal ecosystems that often results in resource-use conflicts. Hence, a proper balance between the different demands must be achieved and resolved by informed decision making. Integrated management and the sustainable

development of coastal and marine areas enables these decisions to be made, implemented and monitored using GIS in order to promote sustainable coastal development.

The engineer from the Department of Irrigation and Drainage has addressed the issue on the maintenance of coastal physical development, especially where erosion of the beach has worsened due to human activities such as tourist and recreational activities. Addressing critical uncertainties for the management of the coastal area has been pointed out since there are various legislation and policies related to coastal areas. NGO worker from Malaysian Nature Society has pointed out that local authorities normally control coastal areas using local plans or special area plans. However, respondents are concerned with the effectiveness of the implementation of local plans and special area plans in managing the coastal area and its surrounding eco system. Respondents hope that the usage of GIS can increase the effectiveness of local plan implementation in Selangor.

Weaknesses in the application of GIS application

An "H" score assumed as a Chi-Square value is calculated using the sums of the ranks of each group. The test statistic for a Kruskal-Wallis test is given below.

Table 4 Kruskal Wallis Descriptive for Mean Differences of Reason on GIS Tools is not been used

Department	Lack of manpower	No GIS expertise	Financial constraint	Poor level of awareness of GIS application
LUAS	19.71	42.61	56.93	58.82
DID	52.09	36.91	30.41	31.00
MyGDI	44.05	38.86	39.41	31.50
PLANMalaysia	55.38	48.06	38.06	46.00
Forestry	46.30	36.10	47.70	42.70
MDKL	26.50	53.50	70.50	62.50
MPSp	49.10	47.65	26.90	35.00
MPK	21.75	42.63	61.00	48.75
MDKS	70.75	31.75	18.50	35.00
MDSB	26.50	53.50	70.00	62.50
Test Statistics[a,b]				
Chi-Square	33.220	6.305	38.880	23.199
df	9	9	9	9
Asymp. Sig.	.000	.709	.000	.006

a. Kruskal Wallis Test
b. Grouping Variable: Department/Agencies

Where N is the total amount of participants so N = 83 and n is the amount of participants in each group so n1 = n2 = n3 = n4 = 83. The H value of 1.384 is lower compared to the critical value of 16.919. This critical value is calculated by selecting the appropriate size of group's value and p value. In this case there are 83 participants in each group and the appropriate p value is 0.05, as a 5%

significance level is required. It can be concluded that each department has a similar opinion on the weaknesses of GIS application in managing coastal areas in Selangor. Subsequently, treating this result as though it were a value of chi-square, distribution of chi-square with df = 9, 16.919. The means rank of 38.880 (Financial constraint), 33.220 (Lack of manpower) and 23.199 (Poor level of awareness of GIS application) is higher than 6.305 (No GIS expertise) and the difference is significant. This highlights that participants considered financial constraint and lack of man power as the highest concern with regards to using GIS application in coastal management for Selangor coastal districts. It suggests that GIS application is important in coastal management. However, due to several factors, the capability of GIS application is not being fully utilised. This is in line with the findings by Bhatta (2013) on GIS limitation, which are:

i. GIS data are relatively expensive than traditional data;
ii. Learning time on GIS software and systems can be long, because it easily becomes the objective of the study rather than just a tools; and
iii. Privacy and security issues can sometimes limit distribution of data.

Engineer from Lembaga Urus Air Selangor and Planner from Majlis Daerah Kuala Selangor had agreed that financial constraint is the main reason why GIS application has not been used in their departments and agencies. According to the respondents, allocation for GIS management and improvement is being specifically provided in the agencies' budget.

The poor level of awareness on the GIS application is also connected with the issue of financial constraint. Despite the agencies sending their staff for training on GIS application, the agencies did not procure GIS software due to limited budget.

Ironically, lack of manpower is also associated with financial constraint. According to Planner from Majlis Daerah Kuala Selangor. Typically, every staff in local authority performs multiple functions. Local authorities that were involved in this study have yet to have staff specially assigned to GIS. Aside from this, IT Officer from MyGDI also mentioned that even though the GIS application is available, some of the agencies did not fully utilise the programme. Moreover, it is possible that there are also agencies that do not realise and are not aware of the existence of MyGDI (or MacGDI).

FINDINGS

Government agencies has actively used GIS as part of the coastal management

From the above finding, there is a relationship between coastal management and GIS application. This may eventually lead to the GIS application being recognised as a significant tool to be used in coastal management. MyGDI is formed with the connexions of several components, which are clearinghouse/geoportal, metadata, geodata, framework and standard by partnership and collaboration between numerous agencies. Partnership is the main key in MyGDI components since partnership holds all components together. Coastal management is included within the Built Environment framework. Therefore, other MyGDI frameworks are also applicable in coastal management of Selangor coastal districts. In this respect, the use of GIS application is significant in the coastal management of Selangor's coastal districts.

Coastal management implementation has considered GIS as tools of development for coastal area in Selangor

This undoubtedly strengthens the GIS application's capability, and shows that it can be used by any sectors and studies. GIS application allowing on-line access to geospatial data is pertinent in the planning and development of coastal areas in Selangor. Using GIS may circumvent the duplication of geospatial data during data collection processes, which supported by a variety of GIS value-added products can increase the levels of operation and awareness of geospatial data. GIS application can help to spur coastal management in Selangor. At the same time, it may increase the awareness of local geospatial data industry in Selangor. All these prove that GIS is an important tool for coastal management implementation in Selangor.

Use of spatial information in coastal management

Uncontrolled/unplanned land use is taking place throughout developing countries and the tsunami-affected coastal areas are no different; rather, it is worse in some places where accelerated development has been taking place. Thus, forest or land clearing and degradation is an ongoing process and the speed of clearing is increasing. For example, there is a strong link between road improvement, waterways and forest clearance. Such development has an enormous impact on the quality of the remaining natural resources (land, forest, fishery, agriculture), particularly where these resources are related to each other. Therefore, such conditions also affect the livelihoods of many communities; their dependencies on these resources remain strong. Secure and sufficient access to land and resources is crucial to raise income and provide livelihood options for those who depend on them on a daily basis, especially where alternative options are very

limited or do not exist. When adopting the multilevel stakeholder approach to sustainable land management, the various dimensions of sustainability have to be weighed against one another in a negotiated, i.e. participatory, approach that does not discriminate against or favour particular actor categories. For example, scientific information must be coupled with indigenous knowledge to offer a better basis for decision-making in the negotiation processes. Here, GIS and maps may serve as appropriate tools to facilitate communication in the negotiation processes. It can also be noted that besides the use of participatory rural appraisal data/information, created and available maps are a valuable source of information.

CONCLUSION

This study has found that GIS has the potential to be used widely in coastal management in Selangor. However, existing constraints like limited budget, has to, firstly, be overcome. The usage of GIS in coastal management can be increased by accelerating the execution of electronic government and knowledge economy, especially at the local authority level. Other GIS associated applications such as remote sensing and other imagery resources can be used in order to increase the quality and usage of GIS application in coastal management. In order to increase the performance of coastal management and GIS application, there should be a clear division of work between coastal management and GIS should be emphasized by experts on Coastal management & GIS, who should be present in every department. Additionally, the solidification of the agencies and the departments' capability in producing knowledge-strong workers through human resource development programs especially related with GIS and coastal management in Selangor is also important.

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Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 170 – 178

DETERMINING BARRIERS IN SUSTAINABLE REFURBISHMENT PROJECTS: COMMERCIAL BUILDING OWNER PERSPECTIVES

Md Asrul Nasid Masrom[1], Mohd Hilmi Izwan Abd Rahim[2], Siow Chan Ann[3], Sulzakimin Mohamed[4], Kai Chen Goh[5], & Azlina Md Yassin[6]

[1,2,3,4,5,6]*Faculty of Technology Management and Business*
UNIVERSITI TUN HUSSEIN ONN MALAYSIA

Abstract
Existing commercial buildings in Malaysia account for one third of the total electricity consumption. They present a great opportunity for refurbishment to reduce carbon dioxide. However, sustainably refurbished commercial buildings that is Green Building Index (GBI) certified is still low. This study aims to investigate barriers that impede commercial building owners to implement sustainable refurbishment and explore ways to increase numbers of sustainable refurbishment implementation. Qualitative data were collected through semi-structured interviews. The respondents were commercial building owners' representative, who were mainly building managers. The findings indicated that higher cost of sustainable refurbishment than conventional method and lacking of sustainability awareness among Malaysian were the main barriers of sustainable refurbishment. This study will be useful in helping building owners and developers to enhance economic, social and environmental benefits of sustainable refurbishment.

Keyword: Sustainable refurbishment, commercial building, Malaysia, sustainability, barriers

Date Received: 1st November 2016
Date of Acceptance: 21st October 2017

INTRODUCTION

Building refurbishment becomes more significant with several 1960s and 1970s buildings now become less efficient and ready to be reconstructed. Besides, sustainable refurbishment plays an important role in the global fight against climate change. In the year 2009, Malaysia launched the National Green Technology policy with one of the main objectives was to minimize growth of energy consumption while enhancing economic development (Bruce et al., 2015). In spite of the efforts that have done by the government, Malaysia commercial buildings are still accounted for 39 terawatt hour (10^{12} Wh) of electricity, which also equivalent to one third of the total electricity consumption in Malaysia (CIDB, 2015). This high consumption of electricity contributed to climate change in the form of carbon dioxide emission at power generating facilities. Therefore, sustainable refurbishment (Energy Commission, 2013) could increase efficiency of these old buildings, hence reduce electricity consumption and impact to the environment.

However, the current sustainable building movement only focuses on developing new green building but not sustainable refurbishment on the existing buildings. Things were made worse when refurbishment of existing building, despite being undertaken, did not take into account the need for sustainability. Although there were at least 1,000 refurbishment projects each year for the last 3 years (Green Building Index Organization, 2015), only 9 existing buildings that are GBI certified after being sustainably refurbished (Energy Commission, 2013).

Although the benefits of the sustainable refurbishment have been mentioned widely in terms of reducing operating cost, reducing CO_2 emissions and so on, commercial building owners remain unfavourable to sustainably refurbish their buildings. Therefore, this study aims to identify the barriers that impede commercial building owners to implement sustainable refurbishment by using qualitative approach.

RESEARCH GAP- CURRENT SCENARIO OF SUSTAINABLE REFURBISHMENT

This section discusses on sustainable refurbishment of commercial building and barriers of sustainable refurbishment.

Refurbishment

Haeyeon (2014) defines refurbishment as extending the usefulness of existing building through the adaptation of their basic forms to provide a new or updated version of the original structure. Similarly, Keivani et al. (2005) state that refurbishment as the extensive renewal or modification of secondary elements of a building that may be required to adapt the structure to new purpose. Other terms that are commonly used to define refurbishment include conversion, retrofit, rehabilitation, adaptation, renovation and restoration.

Existing Commercial Building in Malaysia

According to Bruce et al. (2015), Malaysia currently possesses an existing commercial buildings stock of more than 5,000 buildings, which consists of 904 buildings of shopping complex, more than 2,400 buildings of purpose-built offices and around 2,800 hotels. These huge amount of commercial building stocks are one of the key elements for reducing carbon dioxide emissions.

Barriers of Sustainable Refurbishment

Although each and every year there have been a considerable number of refurbishment projects in Malaysia, there are only few projects that can be classified as sustainable refurbishment of buildings. Scholars have identified several significant barriers that impede commercial building owners from implementing sustainable refurbishment, which include aspects of financial, technical and social, as well as regulation on sustainable development.

Table 1 Barriers of sustainable refurbishment

Authors, Year (Location)	Barriers
Leench & Onwiegbuzie, 2007. (Australia)	• More expensive to retrofit and always contain various hidden costs. • Recent development building code in the area of fire safety and disability access, prevent a lot of buildings from ever being re-used. • Lack of awareness and expertise with regard to best use of property. • Long payback period.
Miller & Buys, 2008. (Finland)	• Limitation of the transformation of the space. • Relatively small budget and short time frame of refurbishment projects than new construction. • The condition of existing building is difficult to evaluate.
NAPIC, 2014. (Australia)	• Sustainable retrofit or technology upgrade requires the cooperation and participation of a wide range of stakeholders.
NAPIC, 2012. (Malaysia)	• Lack of awareness among the client on the long-term financial benefit of building green. • Most of the stakeholders mainly priorities on economic issues rather than taking a balanced approach to economic, environment and social sustainability.
Prodomou, 2010. (United Kingdom)	• High upfront costs discourages sustainable refurbishment. • Disconnection between costs and benefits where owner bear the costs and lower energy costs accrue only to tenants. • Lack of knowledge and experienced workforce

RESEARCH METHODOLOGY

The targeted respondents were commercial building managers located in Kuala Lumpur. This research was conducted to collect the qualitative data through interview with existing commercial building managers who had managed the implementation of building refurbishment. A pilot test was conducted to detect

weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample (Riley & Cotgrave, 2005). The interview questions were then asked to commercial building managers, of which two of them have had managed GBI certified sustainable refurbishment of their buildings and another two without experience of sustainable refurbishment. Data from the interviews were analysed using content analysis to identify underlying themes presented through the data (Sunil, 2012).

DATA ANALYSIS AND RESULTS

Respondents Background

Respondents that were selected for the interview in this study were managerial employees from four different commercial office buildings in Kuala Lumpur. Table 2 shows the profiles of the four selected respondents of this study.

Table 2: Respondents Detail's

Respondent	**GBI Certified (NREB)**	**Working Experience**	**Position**	**Department**
1	Yes	20 years	Senior Project and Building Manager	Building Management Department
2	Yes	20 years plus	Building Executive	Building Maintenance Department
3	No	10 years plus	Facility Manager	Building Management Department
4	No	15 years	Assistant Building Manger	Building Management Department

Barriers that Impede Commercial Building Owners to Implement Sustainable Refurbishment

Table 3 shows that the main issues highlighted by the respondents that need to be considered in the decision making process with regard to building refurbishment. All the respondents agreed that the cost of refurbishment is one of the main issues to be considered. Other issues that need consideration include building age and condition, and tenants' requirements.

Table 3 Decision Making Issues for Building Refurbishment

	Issues
1	• Market condition, requirements of tenants • Age of the building system • Cost, the return of investment

2	• Cost, return of investment • Impact to the building
3	• Requirements of tenants • Budget/Cost
4	• Budget/Cost • The condition of the building

Respondents Opinion Towards Sustainable Practice

All of the respondents agreed that it is important for commercial buildings to implement sustainable practice. In addition, Respondent 1 and Respondent 2 added that implementation of sustainable practices may reduce the operation cost and avoid unnecessary wastage.

"It is important because each building produces more waste than it can be handled. It produces a lot of waste, and Malaysia has no dedicated recycling program at the moment, which in result all that (waste produced) is going to the landfill and that is just unsustainable" (Respondent 1)

However, Respondent 3 and Respondent 4 both pointed out that implementation of sustainable practices should be focusing more on the new development because older buildings are not equipped and designed for practices, and will require huge amount of capital if they were to be implemented.

"For the old building, it is difficult to convert into sustainable building as the building was not equipped with that type of design. If for new building or new development then it is important. Especially like the TRX (Tun Razak Exchange) project, they are developing one whole new area and hence they should implement sustainable aspect into the project." (Respondent 3)

This indicates that respondents were aware of the importance of sustainable practices. However, they felt that implementation of sustainable refurbishment on existing commercial buildings would require huge commitment from all the parties involved and hence some respondent pointed that sustainable practices should focus on new development.

Cost of Sustainable Refurbishment

All the respondents agreed that cost is a significant barrier that impede commercial building owners to implement sustainable refurbishment. Respondents mentioned that the cost of implementing sustainable refurbishment is huge and companies normally do not have the financial resources to do so. Respondent 1 pointed out that one of the reasons the company implemented sustainable refurbishment despite the cost was due to requirements by their tenants. Whereas for Respondent 2, it was because the company's corporate social responsibility program requires it.

Respondents 1 and 2, who have had the experience of sustainable refurbishment, both agreed that sustainable refurbishment will have a long payback period. However, Respondent 3 and 4 mentioned that it is a risky

investment because in order to recover the investment, the company has to raise the rent and it will risk losing the existing tenants.

Government Initiative on Sustainable Refurbishment

"I do not see them (government) set the sustainable practice as one of the government project criteria. For instance, government supposed to set all the new government buildings from 2015 onwards must be GBI certificated as an example for the market to follow." (Respondent 2)

The majority of the respondents commented that the government should put more efforts in promoting sustainable building. Lack of effort by the government indicate lack of seriousness on the government side to promote sustainable building practices. This, in turn, makes sustainable refurbishment insignificant in the eyes of building owners.

Expertise in Sustainable Refurbishment

"No, you can take example of me. Before this I do not know anything about GBI. When I join this company and they want to implement this. Then only I started to learn from there." (Respondent 2)

"Actually, our consultants are all fully aware of GBI. They are all qualified to do this. But the developers do not want to implement this (GBI)." (Respondent 3).

The interview results also indicate that respondents do not feel that lack of expertise is a main barrier that impede the implementation of sustainable refurbishment. As pointed out by Respondent 3, expertise on GBI and, hence, sustainable refurbishment are available. Thus, implementation is up to the building owners.

Similarly, majority of the respondents agreed that the industry is equipped with enough knowledge on sustainable refurbishment. The lack of related knowledge is not a significant barrier that impede sustainable refurbishment implementation.

"It is not easy to change the mindset of people; we tend to follow what our senior did. Hence, even you have the knowledge, but the mindset still the same, then it just needed time." (Respondent 4)

Sustainability Awareness

"Normally owner will only respond to the tenant or the market trend so it depends on the tenants in the building. If they do not have the awareness and it is not really important to them then the owner will not respond. Building owner will not just be going sustainable voluntary, the tenant has to be pushed." (Respondent 1)

All of the respondents agreed that lack of awareness among Malaysians is one of the barriers that impede sustainable refurbishment. This is because building owners tend to only respond to requirements by tenants. If tenant did not feel, or unaware of, the benefits of sustainable refurbishment, building owners

would most likely not refurbish the building sustainably.

DISCUSSION

Figure 1 depicts the difference in respondent insights towards barriers that impede implementation sustainable refurbishment for commercial building in Malaysia. It can be determined that the main barriers that impede sustainable refurbishment of commercial building in Kuala Lumpur are the cost of sustainable refurbishment and the lack of awareness among Malaysian. This is in line with the findings by NAPIC (2012), in which they found that there is a wide gap in terms of awareness on sustainable building practices in Malaysia. Hence, the authorities should focus their efforts on raising the awareness among Malaysian, particularly those who are not directly involved in construction industry. For instance, GBI team should be introduced to the public. On the same note, Leech and Onwuegbuzie (2007) also suggest that the lack of awareness among the owners of building and the costs associated with the sustainable upgrades are the barriers to refurbishment of existing buildings.

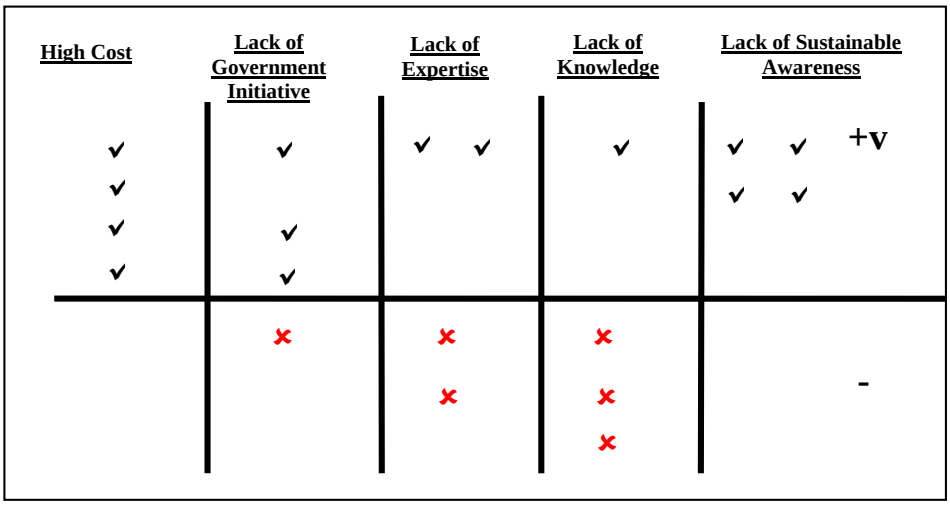

Figure 1 Comparison of Insights of Respondents

CONCLUSION

The purpose of this study is to investigate the challenges in implementing sustainable refurbishment of commercial buildings. The results obtained from interviews showed that the main barriers that impede commercial owners to implement sustainable refurbishment were cost of sustainable refurbishment and the lack of sustainable awareness among Malaysian. These barriers need to be overcome in order to increase the number of sustainable refurbishment practise in Malaysia. Government must play their roles in promoting sustainable building

practices. Clients, building owners and building managers must also plan for the refurbishment of their buildings by taking into consideration the economic, social and environmental factors equally.

ACKNOWLEDGMENTS

The authors would like to thank the Ministry of Education (MOE), Registrar of Universiti Tun Hussein Onn Malaysia, and Department of Construction Management, Faculty of Technology Management and Business, UTHM, for supporting this research.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 179 – 192

PREFERENCE FOR PURPOSE BUILT RETIREMENT NEIGHBOURHOOD AMONG THE CHINESE ELDERLY IN SMALL TOWNS IN MALAYSIA

Norhaslina Hassan[1], & Tan Jiaqi[2]

[1,2]*Department of Geography, Faculty of Arts and Social Sciences*
UNIVERSITY OF MALAYA.

Abstract

The popularity of retirement villages in many developed countries provides a potential market in Malaysia, which is rapidly facing an ageing society. However, little is known about the purpose-built retirement neighbourhood especially its desirability among the local elderly and niche in smaller towns which are poised to reap economic benefits from their locational advantage trending the retirement industry in the region. This study aims to firstly, explore the desirability of retirement neighbourhood among the Chinese elderly in Segamat using semi-structured interviews and secondly, identify the niche market of such neighbourhood and its potential contribution to support development strategy of the town. The preference for retirement neighbourhood as an alternative living arrangement among the Chinese elderly in Segamat indicates its good potential as a new source of economic growth but requires that public planning facilitates efficient land development process and increase amenity and services for all especially the elderly.

Keyword: Chinese elderly, local economic development, Malaysia, retirement neighbourhood, small towns

Date Received: 9th May 2017
Date of Acceptance: 28th September 2017

INTRODUCTION

According to the Department of Statistics Malaysia, the elderly population in the country in 2000 has reached 1.4 million, which accounted to 5.0% of the total population. The trend is expected to increase to 10.4% in 2035. It is projected that Malaysia will become an aging society in less than 25 years. Data regarding fertility rate and household size in Malaysia further reveals that the number of small families and old age dependency ratio in Malaysia are expected to increase rapidly (Department of Statistics Malaysia, 2010). In view of the current demographic trend of increasingly smaller family units and higher participation in the labour force among women as urbanization progresses, the younger generation with double income family will result in a high possibility of their elderly parents being sent to the nursing home (Lim, Noralfishah & Baldry, 2013). While many nursing homes and care centres have been provided by both the public and private sectors, these are dreaded as retirement places for most elderly. They cite poor quality of care, erosion of personal autonomy, loss of meaning and sense of belonging staying in nursing homes (Wong, 2011; Chan 2011; Lim, Noralfishah & Baldry, 2013). Prosperity, however, are transforming traditional family practices and ways of meeting obligations are being "renegotiated and constructed" within the prevailing socioeconomic structures and policies (Phillipson, 2010). Retirement institutions now emerge as privileged destinations where paying the high cost of professional care is viewed as a powerful expression of filial piety among the eastern societies (Izuhara, 2010).

As the phenomenon that the elderly need to be independent becomes pervasive in Malaysia, alternative retirement lifestyles such as retirement neighbourhoods provide a realistic option in order to provide them much convenience in many aspects. Retirement village benefits include community living, security, independence and communality, and increased quality of life (Stimson & McCrea, 2004; Crisp et al., 2013). Planned retirement communities designed to attract in-migration of retirees have long been advocated as an economic development strategy for non-metropolitan areas which are facing challenges of population ageing and slow economic development (Glasgow, 1990; Fagan & Longino, 1993; Stallman & Jones, 1995). Retirement communities may also atrract older migrants that tend to have steady incomes that are not vulnerable to economic cycles (Stallmann & Siegel, 1995). It is for similar reason that the real estate industry was particularly keen on the rapidly growing retirement industry in Southeast Asia especially during the economic crisis and pursued as national development strategy by the states (Toyota & Xiang, 2012). Seen from this perspective, the "Silver Tsunami" of Asia and particularly of Singapore presents an economic possibility for the neighbouring Johor Bahru metropolitan area (Ormond, 2014) as well as the small towns in its vicinity such as Segamat. The issue is to what extent are the non-metropolitan local authorities able to facilitate private sector investment in the purposely built

retirement neighbourhood in their resource rich areas; firstly to stimulate local economic development and, secondly, to expand the choice of retirement lifestyles for quality in place ageing?

This study aims to explore the desirability of retirement neighbourhood as an alternative retirement lifestyle among the Chinese elderly in Segamat. This study further explore the niche market in the elderly housing sector in the area focusing on the government's role in increasing amenity and services through public sector planning, while at the same time facilitating private sector initiatives for the development of the purposely built retirement neighbourhood.

DEMOGRAPHIC TREND ON AGEING IN MALAYSIA

According to the Department of Statistics Malaysia (2010), the annual growth rate of the population would decline from 1.8% in 2010 to 0.6%, but the elderly people aged 60 and above will increase drastically, from 5.0% of the population in 2010 to 6.8% in 2020 and to 10.4% in 2035. One major reason contributing to the ageing population, especially of small towns, is the out migration of the younger generation. Although the net impact of migration on population ageing at the national level is usually minimal (United Nation, 2013), its effect on localities is profound as internal movements are more prevalent at this scale. The migrants, who are younger, tend to leave their hometown to seek better prospects in the larger cities in the states of Selangor, Melaka and Pulau Pinang. The big cities in Malaysia continue to benefit from in-migration of talents and resources at the expense of the smaller hometowns, a threat which Segamat is facing.

Segamat is a small town and a district located in the north of the state of Johor in Malaysia. It is located approximately 172 kilometers from Johor Bahru, and about 179 kilometers from Singapore. The Johor Structure Plan 2020 estimated the population of the district to increase to 218,313 people in 2020 with an average population growth rate of between 0.44% and 0.95% per year (Department of Town and Country Planning (DTCP), 2010). In 2010, it was recorded that out of 183,985 Segamat residents, 21,034 were elderly aged 60 and above, which accounted to 11.5% of the total Segamat population (Department of Statistics Malaysia, 2000; 2010) qualifying it as an ageing society. Apart from outmigration, other factors such as low fertility rate, longevity, decreasing family size and inadequate job opportunities also contributed to the ageing society in Segamat (Tan, 2014).

ELDERLY LIVING ARRANGEMENT

Living arrangements and familial support are intricately linked, given that the traditional way to deliver care to elders in terms of emotional, financial, physical and intergenerational relationship was facilitated by co-residence (Izuhara, 2010). Unfortunately, co-residence may not be sustainable in the foreseeable future as the current trends of urbanization, modernization and migration for work have

resulted in the young adults to leave their elderly parents at home and living apart. The double-income and smaller families of today find that taking care of their elderly parents becomes increasingly challenging due to the ties of works and other social engagements (Lim, Noralfishah & Baldry, 2013). As their children are less able to support them, nursing homes care centres and other elderly type of settlements thus, become an option for the elderly living arrangement.

Retirement Neighbourhood as an Alternative Elderly Lifestyle

The concept of nursing cares has undergone changes, shifting to include a wider concept of retirement communities, villages and neighbourhoods. A retirement neighbourhood in essence, is a housing complex designed for older adults who are generally able to care for themselves. Hunt et al. (1984) identify the three main elements of retirement communities consisting of housing, services and residents, and that they are "aggregations of housing units and at least a minimal level of services planned for older people who are predominantly healthy and retired" (pp. 4–5). Retirement communities and villages nowadays are described as planned, low-density, age-segregated development, constructed by private capital, offering extensive recreational services and relatively low-cost housing for the elderly (Reynolds & Beamish, 2003).

Besides assistance from homecare agencies, opportunities for activities and socialization are well provided in the retirement neighbourhood. Services such as shops, hospitals and entertainment facilities could be serviced by young people making such retirement neighbourhoods inclusive of the outside world. Retirement neighbourhoods thus are not merely an elderly town, but also environments that encourage social interaction between old and young generations (Bernard et al., 2011).

METHODS

Preference for retirement neighbourhood among Chinese elderly in the Segamat small town in this study was facilitated by semi-structured face-to-face interviews with a sample of 98 Chinese elderly respondents conducted in 2014. This number goes well beyond the minimum "saturation point" that occurs around 15 participants (Latham, 2013) where additional participants does not provide any additional insights. The respondents were conveniently selected either in their own homes or in public places to aid the exploratory analysis with each interview session lasting roughly one hour. A questionnaire consisting of 3 sections relating to personal background, present living arrangements and medical condition of the respondents; questions relating to life satisfaction of the personal, family and social life of the respondents and lastly, their preference for retirement neighbourhood over nursing home. Responses were based on a scale of 1-5, with 1 being "strongly dissatisfied" and 5 being "strongly satisfied". The Likert summated scale was then constructed and aggregated scores of life satisfaction

were reclassified into 4 main sub-scales for satisfaction levels as "very satisfied", "fairly satisfied", "dissatisfied" and "very dissatisfied". Descriptive statistical analysis using cross tabulations and Chi-square tests were employed to identify relationships between life satisfaction and demographic characteristics of the elderly respondents, as well as their preference for retirement neighbourhood. Significant value ($p<0.05$) in Chi-square test was used as an important value judgment of the relationship between studied variables.

RESULTS AND DISCUSSION

The elderly respondents who were interviewed consisted of 55% males and 45% females; 32% in the age group of 55 to 59 (early retiree), about more than half in the age group 60 to 79 years old (retiree), while those over 80 years old (older retiree) accounted to only 7%. More than half of the respondents were locals and had been staying in Segamat for about 60 years. 41% of the respondents had either nil or primary education, while those who had secondary education accounted to almost half of the sample (49%); whereas 10% of the respondents had tertiary education. In their living arrangements, the majority of the elderly respondents (54%) were found to live with their spouse only. 25% of the elderly respondents live with their children and 7% live with their relatives. A surprisingly large proportion of the elderly respondents, i.e. 14% live alone.

More than half of the elderly respondents interviewed (57%) were still earning their own income, 38% receive allowance from either their children or relatives, while the rest (5%) receive income from the government welfare scheme or other organizations. 41% of the respondents were economically inactive. Most of the elderly respondents who were still working or partially working accounted to 23% and 33% respectively. In the sample, 63% of the elderly respondents can still walk unaided, 14% of them were unable to walk unaided, while 23% of the elderly respondents walk unaided occasionally. In their self-evaluation of own health conditions, more than half of the elderly respondents considered themselves to be in 'excellent' or 'good health'. Those who assessed their health to be 'fair' and 'poor' accounted to 29% and 1% respectively. The majority of the elderly respondents indicated that they were fairly satisfied with their life with the reported mean of 3.14 and 0.51 standard deviation.

96% of the elderly respondents interviewed preferred retirement neighbourhood than nursing home as their alternative options of retirement life (Table 1). The overwhelming attraction of the new concept of retirement lifestyle was unmistakably due to the infrastructure, facilities and services to support modern elderly lifestyle, but the widespread negative perception regarding the nursing homes could not be denied. Most of the respondents viewed that nursing homes were unable to fulfil the needs of the elderly and depersonalizing despite

the professional medical health care. According to the elderly respondents, staying in nursing homes was "a shame" as they have children and wealth.

Table 1 Preference for Retirement Neighbourhoods among the Elderly Respondents

Variables	**Significant Levels**	**Total (%)**	**Retirement Neighbourhoods (%)**	**Nursing Homes (%)**
Total		**100.0**	**96.0**	**4.0**
Age Groups	*0.000			
55-59 (early retiree)		32.0	33.3	0.0
60-79 (retiree)		61.0	62.5	25.0
> 80 (older retiree)		7.0	4.2	75.0
Gender	*0.038			
Male		55.0	57.3	0.0
Female		45.0	42.7	100.0
Source of income	*0.000			
Relatives or Children		38.0	39.6	0.0
Own Income		57.0	58.3	25.0
Others		5.0	2.1	75.0
Satisfaction levels	*0.002			
Very dissatisfied		0.0	0.0	0.0
Dissatisfied		7.0	5.2	50.0
Fairly satisfied		72.0	72.9	50.0
Very satisfied		21.0	21.9	0.0

*Significant Value of the Chi-Square, p = (<0.05);
Source: Field Study, 2014

Only four variables showed significant differences in the preference for retirement neighbourhoods among the elderly; these being age group, gender, source of income and levels of satisfaction. In other words, the preference for retirement neighbourhood concept is pervasive among the elderly respondents regardless of education levels, birth place, length of stay in the locality, income, living arrangement, working status, mobility or even medical conditions. Table 1 shows that 62.5% of the respondents in the age group 60-79 tended to be more receptive to the idea of retirement neighbourhoods than the early retiree (33.3%), whereas only 4.2% of the older retiree (>80 years) would even entertain the new idea. Preference for the alternative retirement settlement also tended to be associated with elderly males (57.3%) compared to females (42.7%). Respondents who reported to have own income (58.3%) and received allowance from family or relatives (39.6%) tended to also prefer retirement neighbourhoods to nursing homes compared to elderly respondents who depended on other sources of income (2.1%). It is interesting to note that preference for retirement neighbourhood among different sources of income received by the elderly is

mediated by age; since the younger elderly (50-59 and 60-79) tended to be associated with having own income or transfers from children or relatives whereas the older respondents >80 with other source of income; the difference in the observable preference for retirement neighbourhood can be traced to age instead of income source as initially suggested. Similarly, the tendency for more male respondents to have own income or receive transfers from either children or relatives would make them more agreeable to the retirement neighbourhood idea. Examination of partial tables for both male and female elderly respondents shows that there was a significant difference among female elderly which influenced their preference for retirement neighbourhood. There were more females with own income (53.7%) and recipient of income from children and relatives (43.9%) who prefer retirement neighbourhood compared to female elderly reporting income from other sources (2.4%).

Preference for retirement neighbourhood nonetheless, remains significantly different among the different satisfaction levels; 72.9% among the satisfied elderly, followed by 21.9% among the very satisfied elderly and only 5.2% dissatisfied elderly. Using the chi-square tests for three-way tables, pegged at a significant level of 0.05 ($p<0.05$), the study also found that working status and medical condition among the satisfied elderly respondents tended to be associated with the preference for retirement neighbourhood. In general, the retired elderly who recorded satisfaction with life tend to prefer retirement neighbourhood (95.1% compared to 33.0% elderly with similar working status and life satisfaction who chose nursing home). Similarly, the majority of the elderly (95.8%) who reported good medical condition and also reported satisfaction with life tended to be associated with the preference for retirement neighbourhood compared to none of those elderly with the same characteristics who prefers nursing homes. In other words, Chinese elderly who are male, moderately old, and generally satisfied with life tend to prefer retirement neighbourhood as an alternative living arrangement to spend their retirement life. The findings of this study indicated that being retired and in good medical condition increase the elderly's satisfaction to life, which in turn influence their positive perception of retirement neighbourhood compared to nursing home.

Increased exposure to the new concept which was further explained in the interview session tend to influence the decision among younger retirees indicating a strong desire to live an independent and modern lifestyles afforded by retirement neighbourhood. The appeal of retirement neighbourhood becomes more apparent when they were explained about the functions of retirement neighbourhood as its concept takes into consideration every aspect of needs of the elderly people and provides a dignified life for the residents. Being retired means more leisure, and good medical condition means they can fully take part in the retirement neighbourhood social activities. The attractiveness of retirement neighbourhood also lies in its integrated infrastructure, facilities and services to

cater for the needs of the elderly with much flexibility in housing types. The older respondents (> 80 years) in the sample, however, tend to prefer the more familiar nursing home because of limited exposure to the newer retirement neighbourhood concept. Most of the older respondents were also associated with lower life satisfaction and unreliable source of income, which present realistic limitation to their ability to even entertain the idea of living in retirement neighbourhood. The other reason was related to their limited physical movement, as most of them were unable to move actively, rendering social activities as promoted in retirement neighbourhood unattractive to them.

PROMOTING RETIREMENT NEIGHBOURHOOD AS A DEVELOPMENT STRATEGY IN SMALL TOWNS

Developers in Malaysia were quick to respond to the increasing awareness that nursing homes cannot provide satisfactory and comprehensive retirement life for the elderly in spite of the advanced medical health care. Already, major developments in the third-age retirement housing market have been constructed in Johor Bahru metropolitan area which include Platinum Residences in Lakehill Resort City and Leisure Farm Resort, located near a Columbia Asia hospital which boast multigenerational living opportunities. Other prominent providers in the fourth-age residential care market in Johor Bahru include a 200-bed facility by ECON Healthcare with in-home care, day care, rehabilitation, nursing home and acute care facilities; and Jeta Care, an 80-bed assisted-living facility and nursing home boasting a combined Western residential care concept with Confucian values (Ormond, 2014).

Coulson and Kim (2000) reiterate that the impact of real estate investments including elderly settlements on income to localities is much more significant than non-residential investments. The effect is through employment, savings, total investment and labour productivity (Harris & Arku, 2006). This is in addition to the basic assumption that the importation of wealth afforded by amenity-seeking retirees into non-metropolitan areas would increase local economic activity through demand for locally provided services. The economic effects result from activities such as construction of infrastructure, property sales, operation and maintenance of the retirement neighbourhood, and expenditures by residents and visitors for more “urban” services that provide jobs and income for the locals. The fiscal effects result from changes in local government revenues from taxes, and changes in costs for providing public goods and services to residents of the retirement communities (Stallmann & Jones, 1995). Purposely built retirement neighbourhood in small towns are not only targeting for amenity seeking retirees who are normally attracted to the environmental amenities in the rural areas but are also providing an alternative for local elderly who are blessed to receive financial support from their working children or earning their own income but having to live independently.

It has been well established that older adults prefer to remain in their own homes, if at all possible (Leith, 2006; Keenan, 2010). Based on the interviews, it was found that the majority of the elderly respondents (96%) insisted on staying in Segamat even though their family or children have requested them to move in with them to other areas where they were currently making a living. Many of the elderly respondents pointed that Segamat was their birth place and they were so used to its surroundings. Earlier findings showed that the average length of stay in Segamat for the sampled elderly was 60 years, which explains the emotional and psychological attachment to the place. In recognition of this pervasive desire to age in place, attention to ways to facilitate the elderly to be able to stay in their homes, such as providing services, both home- and community-based and new smart home technologies will be the way to go (Glass & Skinner, 2013). Nonetheless, the overwhelming preference for retirement neighbourhood as revealed above increases the feasibility of planning for this type of elderly living arrangement in the Segamat.

Planning for Retirement Neighbourhoods: The Case of Segamat

While retirement townships that are provided by the private sector are envisaged to further stimulate local economic development, there is a significant role to be assumed by the local authority in order to ensure a well-functioning real estate market. The Segamat District Council, in regulating the physical development in its area and in line with its own objectives, performs duties such as facilitating land development by processing all applications for planning permission in accordance with the current planning standard requirements and development strategies as stipulated in the Local Plan. A retirement neighbourhood would support very much the overall development strategy of the local planning authority as much of its efforts is focused on promoting economic growth by attracting people to Segamat whether as residents, tourists, visitors or investors. A series of planning strategies, contained in the Local Plan for the Segamat District that is aimed to boost the local economy include new projects and development in business, agriculture, tourism and physical infrastructure (DTCP, 2010). A more complete transportation and road networks system was also proposed in the Plan. The Plan also seeks to tap the benefits of the double tracking railway project that runs from Seremban to Tanjung Pagar in Singapore as Segamat is situated at the middle between Kuala Lumpur and Singapore. The project would reduce travel time between Singapore and Kuala Lumpur from approximately 6 hours to about only 90 minutes.

Primarily, owing to its rich natural resources endowment, Segamat is planned as an agricultural and eco-tourism dominant area (DTPC, 2010). A number of scholarly articles have also discussed the ways in which natural amenities, especially public lands and other protected areas, stimulate economic

growth by attracting individuals, small businesses, and retirees with non-earnings income, contributing to a variety of multiplier effects (Nelson 2006; Serow 2003; Chen & Weber, 2014). Seen from this light, the planning efforts by the local planning authority to improve the general amenity of the area as well as facilitating efficient land development process that is in congruence with its development strategy will further increase the attractiveness of private sector investment in the elderly housing market in Segamat.

The economic opportunity presented by the increasingly mobile Asian retirees especially Singaporeans would be enhanced by the railway double tracking project, which would make Segamat more accessible from both north and south. It was reported that from 2002 to 2012, some 883 Singaporeans of a total 12,000 have taken advantage of the Malaysia My Second Home (MM2H) program, which is targeted at foreign retirees (Wong & Ghazali, 2014). Cheaper retirement care in Johor, which ranges from USD480-630/month, as compared to facilities in Singapore (USD 700-3,500/month), would be a factor to attract foreign retirees to Johor (Ormond, 2014). Furthermore, given that the Johor Bahru metropolitan area is increasingly congested and highly priced, partly due to Singaporean induced demand, development of a more affordable retirement neighbourhood in Segamat is viable because of the lower cost of land compared to other districts especially Johor Bahru. This would enable Segamat to carve out its own retirement housing market in the lower and upper middle-income section whereas Johor Bahru would retain its position in major developments of retirement care facilities catering for the high-income market.

CONCLUSION

Malaysia will face the reality of an ageing population in less than 25 years. Many of its smaller towns such as Segamat have started to age due to the general trend of low fertility rate, longevity and specifically the migration of the young generation to the big cities for education or job opportunities, leaving their elderly parents behind in the small towns. Other demographic trends also raise the possibility that the younger generation, double income and smaller households may increase the demand for retirement neighbourhoods to support their elderly parents. This is also in cognizant of the undesirability of nursing homes as a place to spend their retirement life especially among the Chinese elderly. A seemingly new concept in Malaysia, retirement neighbourhoods have long been experimented with measurable success in countries such as United States, Australia and China. Retirement neighbourhood is a purpose built physical infrastructure, facilities and support services designed for independent living and active ageing with continuous care for the elderly. From the perspective views of current living arrangement, life satisfaction and its widespread acceptance as revealed in the study, retirement neighbourhood can become an alternative living option for the elderly in the future particularly in smaller towns such as Segamat.

Despite the pervasive desire to age in place, the local Chinese elderly find retirement neighbourhood an attractive option if built in Segamat as it involves short distance relocation and a definite option if they had to choose between nursing home and another alternatives.

It is feasible for the planning of the retirement neighbourhoods in Segamat as a means of capturing the advantages of this new elderly lifestyle preference. The promotion of purposely built retirement communities has a long history in rural economic development which focuses on rural amenity in order to attract retirees. Investment in retirement neighbourhoods in Segamat is expected to promote multiplier effects throughout the local economy via demand of its upstream and downstream industries. The local economic development would be triggered by opening up the elderly housing market in Segamat which enjoys competitive advantage based on several observable factors. Apart from its ageing population and receptive attitude towards the new retirement neighbourhood concept, its strategic location coupled with enhanced accessibility, the lower cost of land, as well as current and planned developments by the local planning authority contributes significantly toward increasing the viability of a retirement neighbourhood in Segamat. The serenity associated with the rural characteristic with minimal pollution, also makes Segamat a good living environment for retirees. While the increasing number of older people is viewed as a blight for rural areas in Britain (Butler, Morris & Wright, 2003), this study see it as an opportunity that can support the overall development strategy of small towns in Malaysia.

Finally, since this study is limited on Chinese elderly only, studies that focus on other races are needed given that Malaysia is a multiracial society comprising of three main races; Malay, Chinese and Indian. As these races greatly differ in many aspects such as beliefs, culture and religious teachings, it is expected that there would be differences in terms of living requirements when taking care of their elderly parents.

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PLANNING MALAYSIA:
Journal of the Malaysian Institute of Planners
VOLUME 15 ISSUE 3 (2017), Page 179 – 192

AN ANALYSIS OF REGIONAL IMBALANCES IN IRAN: A CASE STUDY OF NORTH COASTAL AREAS

Masoud Taghvaei[1], Sirous Shafaghi[2], & Mohammadreza Ghaderi[3]

Faculty of Geographical Sciences and Planning
UNIVERSITY OF ISFAHAN

Abstract

In countries such as Iran, which cover a large geographical area, the issue of inequality and regional differences provide a substantial challenge in the effort to achieve balanced development. In this study, data were collected using documentary and survey methods as well as Delphi techniques, and analysis was carried out by combining qualitative and quantitative models. In the second step of the Delphi technique, a study of the impact of the factors on each other, and on the regional inequalities of the North coastal area, was made using the cross-impact method. In the final step, the effective factors contributing to the inequalities of the North coastal region were studied using analytical techniques and MicMac software. After analyzing the impact rate of the effective factors on regional imbalances, the key factors were identified and, finally, solutions to reduce the regional imbalances of the North coastal area were proposed.

Keyword: Inequality, Region, Regional balance, North Coastal Area

Date Received: 12th April 2017
Date of Acceptance: 11th August 2017

INTRODUCTION

Disparities in the provision of goods and services have been the concern of various regional development proponents. Among the issues that need to be addressed by regional initiatives and policies are accessibility and mobility levels between urban and rural populations (Ponrahono et al., 2015).

Despite the wealth of human and natural resources, Iran still suffers from high levels of inequality and poverty, and is one of the developing countries where there are still significant differences between regions. While poverty has decreased in the cities, in the rural areas poverty, unemployment, and inequality are growing. Such regions are increasingly being marginalized from national development. For more than two decades, therefore, policy-makers, urban planners and experts have been focusing on spatial and land use planning, economic development, and growth policies as means to alleviate poverty and minimize inequalities between regions (Ramezani, 1997).

Knowledge of the spatial organization of a region and the factors that cause regional inequalities can lead to an understanding of the policies needed to make development in that region possible. In this study, the capabilities and limitations of the North coastal region in Iran have been identified by studying the spatial organization of this region. After considering the factors that underlie the imbalances, suggestions are proposed as to how these imbalances could be reduced.

RESEARCH BACKGROUND

Regional imbalances, or regional inequalities, are one of the main problems for policy-makers in many parts of the world, Hence for policy makers, reducing regional disparity may be part of a more general social objective to reduce overall inequality, and in particular inequality between individuals (Dupont, 2007). The problems, which include distribution of income and economic opportunities and activities at both the national and international levels, have continued despite globalization and the ensuing economic growth over the seven decades since the end of World War II. Despite overall growth throughout the world, inequalities still exist, with many areas in underdeveloped countries still suffering from regional imbalances (Petrakos & Saratsis, 2000). There are a number of perspectives on regional planning, such as the Perroux growth pole theory, which suggests that development is not uniform, or balanced, over an entire region but tends to cluster around a central area or pole. The proponent of this theory believed that macro investments in large urban areas cause the growth of the central areas (Weeler & Muller, 1986).

In contrast to the growth pole theory, Friedmann divides the spatial system into environment–centre, defining development as a discontinuous and inventive process. Central areas are considered to be organized systems with high developmental capacity while environmental areas are subsystems with any

development determined by, and dependent on, the central areas (Friedmann, 1972). In other words, in this theory, the centre is considered as the development hub (Clark, 2000). Regional disparities may engender redistributive conflicts, which crowd out good government, but regional and intra-regional disparities are often driven by processes well beyond the responsibility and control of individual regions. Regional disparities may be enhanced by institutions of good governance (e.g. fiscal decentralization) and efficiency-enhancing policies (e.g. trade liberalization), while they may also be amplified by positive outcomes at different spatial scales, such as processes of agglomeration (López-Bazo, Monastiriotis & Ramos, 2014).

Experiences of regional development vary between countries. For example, in South Korea, regional development problems include urban unilateralism, forgotten rural areas, urban and rural imbalances, uncontrolled migration to urban areas, resource concentration in some areas, urban growth issues, persistent poverty, the entry of multi-national companies, and new colonialism. In China, some of its regional development issues include more participation needed during decision-making processes at the local level of planning, more regional autonomy, and problems in the development process due to international forces (Misra & Bhooshan, 1981). Also in China, regional differences exist in gross domestic product (GDP), and household real per capita income between urban and rural populations, as well as spatial differences in capital distribution and production efficiency and in human resources (Zhao, 2000). In Scandinavian countries, regional development formed against a backdrop of quick industrial growth in some cities. Whereas, in the Netherlands, there are strong regional differences in productivity between industrial cities, the famous ports and other regions (Eshkevari, 2003).

In Iran, the economy is characterized by development that has led to an uneven spatial pattern of economic activities. The history of regional imbalances in Iran can be traced back to national development plans. The Islamic Revolution in 1979 revealed that the development programs had not been positive for all provinces so that conditions deteriorated in some areas.

Development plans in Iran have frequently been social and economic plans according to higher rules and unfortunately because of the structure of region programs (physical), the spatial program of the plans had no opportunity to be executed. Thus, despite the investments made, the provinces and regions in recent years have not undergone significant changes, resulting in deepening gap between provinces. For example, in two provinces (Sistan Baloochestan and Charmahal Bakhtiari) conditions were worse by the end of the first development program (1989-1993). This was also the case for 15 provinces (East Azerbaijan, West Azerbaijan, Ilam, Tehran, Charmahal Bakhtiari, Khuzestan, Zanjan, Semnan, Qom, Kurdistan, Kerman, Kermanshah, Kohgiluyeh va Boyer-Ahmad, Lorestan, Gilan, Hormozgan, and Hamedan) by the end of the second program

(1995-1999), and 17 provinces (West Azerbaijan, Isfahan, Ilam, Tehran, Khorasan, Khuzestan, Zanjan, Semnan, Qom, Kurdistan, Kerman, Kermanshah, Kohgiluyeh va Boyer-Ahmad, Lorestan, Gilan, Hormozgan, and Hamedan) by the end of the third program (2000-2004) (Ahmadipour et al., 2007). Thus, the 4th plan, after the revolution (2005 onwards) has shifted its emphasis towards spatial development, and the strengthening of regional and provincial programs in order to reduce regional imbalances.

In the fourth development program, the gap in the development process between the provinces, and its undesirable impacts, forced the government to pay attention to regional imbalances. This led to the creation of executive decentralized institutions and local decision-making in provinces, as well as large-scale investment in industrial and agricultural growth poles in those provinces and regions with sufficient resources. The central provinces of Tehran, Isfahan and Khorasan, and the second rank provinces of Gilan and Kermanshah were considered.

The fifth program also considered regional differences. The new policy for regional development paid more attention to agriculture and investment in undeveloped areas. However, it should be noted that policies for tackling regional differences, in what was an extreme centralist system, were not necessarily successful (Eshkevari, 2003). After taking into consideration the importance of the issue, in this study the factors contributing to the regional imbalances in the North coastal area are identified and analysed, and solutions to reduce the imbalances are proposed.

RESEARCH APPROACH

Applied developmental research is the method used in the study, and a combination of documentary and survey methods were utilized. Data were gathered through questionnaires and the Delphi technique was used to analyse the data. Questionnaires were completed in two stages by 50 planning and development experts who were in charge of developmental issues. The aim of the research is to recognize and analyse the factors contributing to the imbalances in the North coastal area of Iran. The cross-impact matrix method was then used to analyse data in order to evaluate the impact of factors on each other, and through the use of MICMAC software, the key factors in the creation of regional imbalances were recognized. After enumerating software output and studying matrix compatibility, the obtained variables were considered the most effective factors in this study and the definitive optimal answer to the problem, as well as a basis for evaluating multi-criteria decision-making methods. It should be noted that the direct impact of the key factors has been extracted from the matrix output, as shown in Figure 1 (Godet, Meunier & Roubel, 2003).

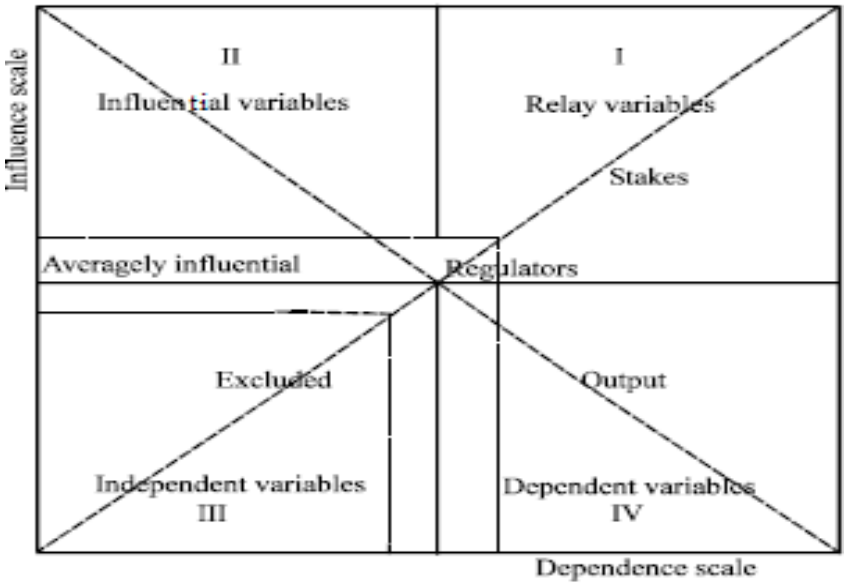
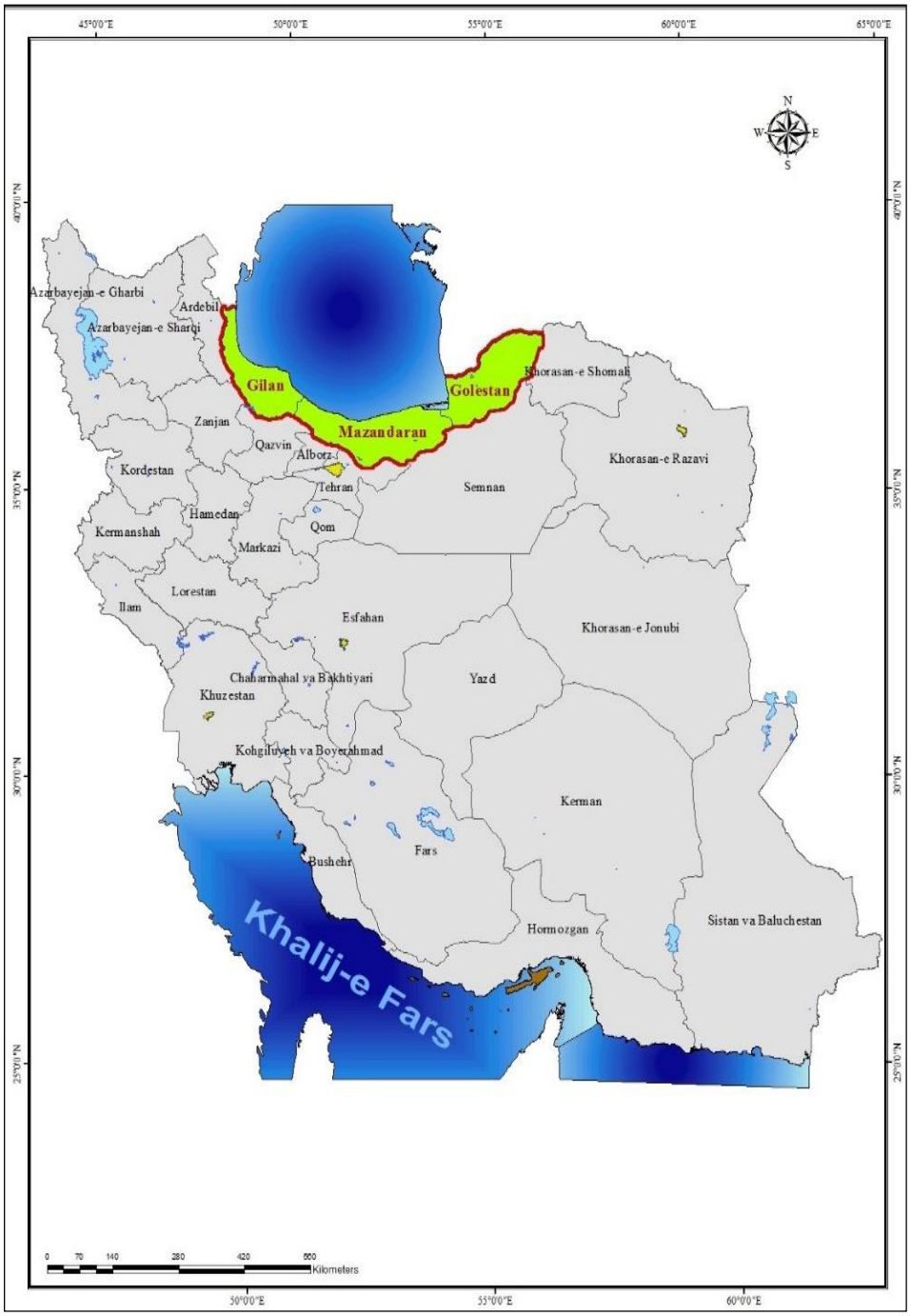


Figure 1 The Status and Conditions of Risk Variables (Key Factors) in the MICMAC Analysis
Source: Hsiu-Yuan Hu, 2009

Background of Study Area

The study region is located in the North coastal area of the country. This region leads to Turkmenistan from Golestan province. In the south it leads to Semnan, Tehran, Alborz, Qazvin and Zanjan. In the east to North Khorasan, and in the west to the Caspian Sea and Ardabil province. The northern areas are at lower than sea level, and there is an increase in altitude from the east to the south. The position of the North coastal macro-region can be seen in Map 1. The country is divided into nine macro-regions which include 31 provinces. The first macro-region includes North coastal provinces Golestan, Mazandaran and Gilan.



Map 1 The Study Area

ANALYSIS AND FINDINGS

The North coastal area is one of Iran most unique regions, as in contradictions and contrasts are not as wide as in the other provinces and regions. This region, however, has its own significant imbalances and inequalities, which should be carefully considered due to its importance, sensitivity and roles.

Based the results from the Delphi technique and depending on the type of factors identified in the region, effective factors that are able to address differences, inequalities, and imbalances have been classified as follows.

Environmental and physical indicators: One of the distinguishing characteristics of the North coastal area is that almost all cities, especially the large cities, are located on the coastal plains, and so have easy access to the sea. The proximity (land and sea borders) of the North coastal area to four foreign countries, within 450 kilometres of its coastal borders with the Caspian Sea, has made it possible for this area to have a significant role in commercial transactions, as well as a significant fishing industry. Easy accessibility to the sea has also been an important factor with regard to the area's status as a tourist destination. Therefore, the geographic advantages of the area have likely contributed much to its economic success. However, the natural structure and geography of the area are not without problems - the plains, seashores, and foothills make for an imbalanced settlement system, and also contribute to problems with national and infra-national communication networks (National Physical Planning Studies, 2009).

Social, cultural, and human indicators: Analysis of the distribution of residential centres and industrial activities in the North coastal region shows that unplanned growth impacts many valuable environmental zones. The degradation of natural resources and encroachment into protected environmental areas have been well documented, and include issues with agricultural land and forests. Unplanned spatial development and the proximity of the main centres lead to sprawl. This phenomenon, accompanied with overuse, and inefficient use, of land has jeopardized the development of the area (National Physical Planning Studies, 2009).

Management and planning indicators: Instability in the decision-making system, including ongoing changes of decision-makers, lack of foresight and inefficient routines are among the most important reasons for uncertainties in these provinces, and which are hindering North coastal region development.

Economic indicators: The rise in spatial inequalities, increasing opportunities in the central regions, and reforms to farmlands have provided the economic motivation for migration of labour. Disparities, on the one hand, and migration, on the other, have caused increased imbalances between central Iran and the surrounding regions. Based on the surveys and available background information, the causes for these regional imbalances were found to originate from 49 factors, which have been categorized into four groups, as in Table 1.

Table 1 Classification of effective indicators in regional imbalances

GROUP	INDICATORS	CLASSIFICATION
1	Environmental and physical indicators	Field proportionality (1), direct access to the sea (2), settlement patterns (3), land use (4), sensitive and valuable ecosystems (5), land constraints (6), physical model of the spatial organization (7), spatial interaction of plains and mountain areas (8), distribution of activities in space (9), activities' adaptability to the capabilities of the environment (10), environmental capabilities (11), topographic diversity (12)
2	Social, cultural, and human indicators	the effects of population density on land resources (13), urbanization rate (14), level of services in cities (15), ethnic and cultural diversity (16), human development (17), the rate of public participation (18), social welfare (19), immigration (20)
3	Management and planning indicators	Integrated management development (21), sectoral view on planning (22), resources allocation (23), project-orientedness (24), personal and momentary views on regional development (25), dependence on basic resources (26), polar planning and type of policy planning (27), views on drought and security in peripheral regions (28), borders and peripheral regions (29), policy effects of outreach documents (30), dependence on oil (31), center-orientedness of services (32), subject-oriented planning (33), spatial sharing (34), relying on balanced resources (35), ethnic convergence and divergence (36), centralization (37), growth poles (38), single urban system (first city) (39), geographical distribution of resources (40), spatial one-dimensional development (41), segregation of sections (42), industrial trends (43) National policies (44)
4	Economic indicators	Employment range (45), (network economy) interactive relations between areas (46), accumulation of physical investment (47), competitive advantages (48), interaction of economic operations beyond peripheral regions (49)

Source: The researcher classification.

DATA ANALYSIS BY MICMAC SOFTWARE

The factors listed in Table 1 have been identified as the factors contributing to regional imbalances and have been extracted and analysed using MICMAC software. The matrix dimensions are 49×49, arranged into four groups (Table 1).

The matrix 49×49 filling degree was 88.5, which shows that the selected factors have a high and disperse impact on each other, and that the system presents an unstable situation.

In Figure 2, the existence of factors with a high degree of effectiveness is low in the top-left of the diagram, since this location has variables in stable systems. Nevertheless, there are several factors near this area which show their considerable impact on the whole system. These variables include "the topographic diversity of the region, dependency on oil through governmental investment, constant and personalized attitudes toward regional development, endogeneity, and reliance on balancing sources". These variables are the most important effective factors in regional imbalances, which play a much higher role in making regional balances or imbalances.

Risk variables are located near the diameter of the south-east area of the diagram and have a very high probability of becoming key system actors. These variables include “sectoral view on planning, polar planning and type of policy planning, center-orientedness of services, policy effects of outreach documents, growth poles, geographical distribution of resources, spatial one-dimensional development, industrial trends”. Risk variables can mainly be considered as the variables related to planning and managerial factors.

Target variables are located under the north-east diameter of the plane. These variables are related to how the system could evolve in the future, and indicate the possible targets of a system. By making some changes to these variables, system evolution will be achieved according to plans and targets. The target variables mainly involve the economic variables. It should be noted that the purpose behind promoting the economic variables is to reduce regional imbalances in the North coastal macro-region. These variables include “distribution of activities in space, environmental capabilities, resources allocation, dependence on basic resources, views on drought and security in peripheral regions, Employment range, network economy, accumulation of physical investment, interaction of economic operations beyond peripheral regions”. Social issues are given less consideration. In other words, in development planning, the main targets are economic issues, and system efficiency can be achieved through an analysis of the economic issues and by identifying the strength and weakness points.

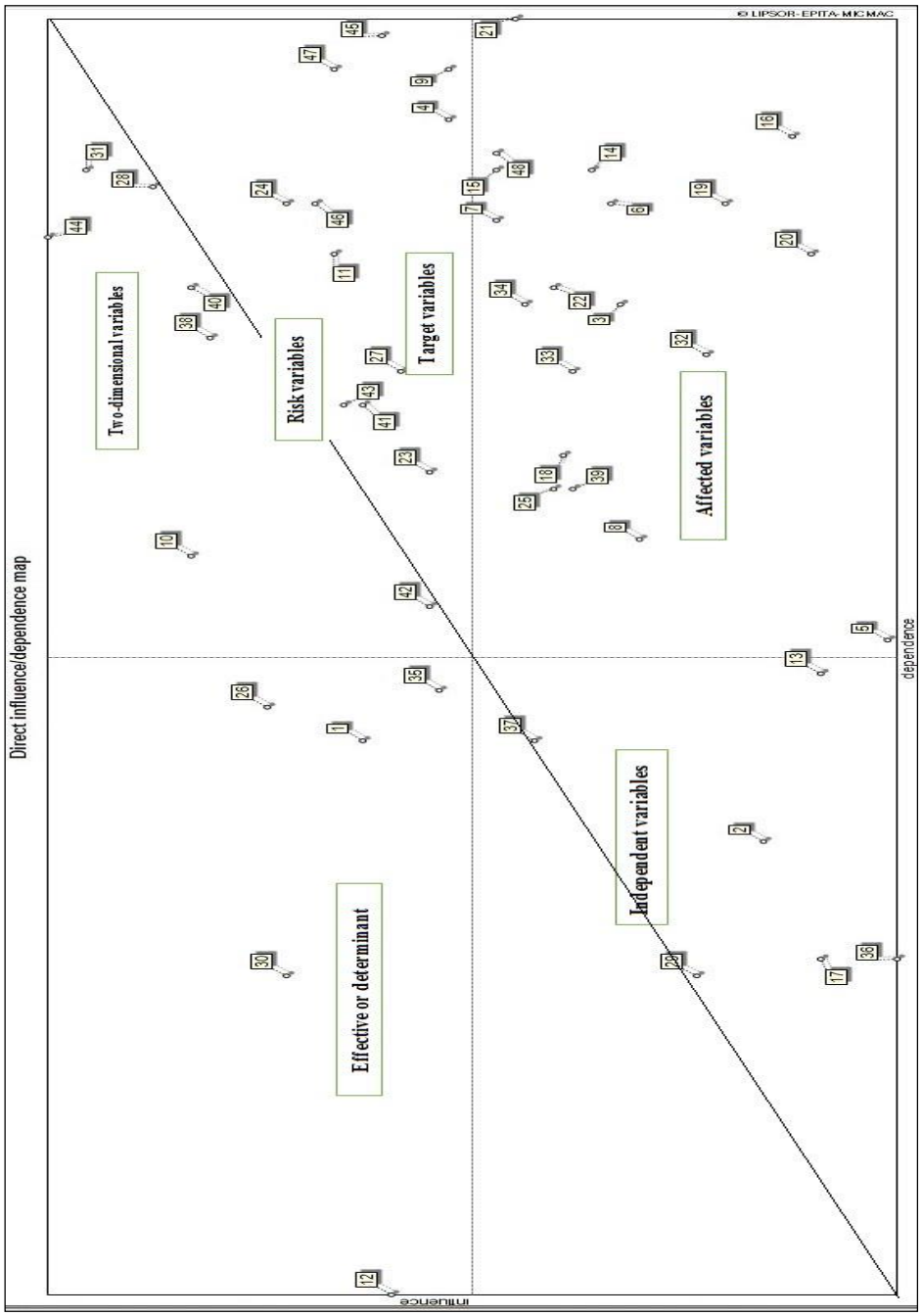


Figure 2. Variable distribution matrix and their locations on the effectiveness-impression axis in the North coastal area
Source: MICMAC analysis output.

The affected variables are located in the south-east area of the diagram and can be called result variables. These variables are strongly affected by the system but have a low-degree of impact on the system. These variables include "center-orientedness of services, field proportionality, settlement patterns, physical model of the spatial organization, spatial interaction of plains and mountain areas, the effects of population density on land resources, level of services in cities, human development, the rate of public participation , social welfare, immigration, integrated management development, project-orientedness, center-orientedness of services, subject-oriented planning, single urban system (first city), competitive advantages".

These indicators are related to improvement of the social situation, social communication, and promotion of the quality of life, which are dimensions on the quality of life index.

Independent variables have low effectiveness and impression. They are located in the south-west of the diagram. Due to the unstable nature of the system, it appears that some of these variables have a system output nature and should be called independent output variables. These variables include "ethnic and cultural diversity, direct access to the sea, sensitive and valuable ecosystems, land constraints, borders and peripheral regions, ethnic convergence and divergence, centralization". Independent variables can be divided into two groups, which are variables independent of the system and variables independent of the system results. The variables of the first group include social and cultural factors and the variables of the second group include environmental issues specific to the North coastal area, such as access to the sea and regional ecosystems plus security issues in the border provinces.

The graph of direct relationships between the variables in Figure 3 show that there are strong relationships between the factors. In overall, the results of the analyses show that risk variables and target variables are the most important factors.

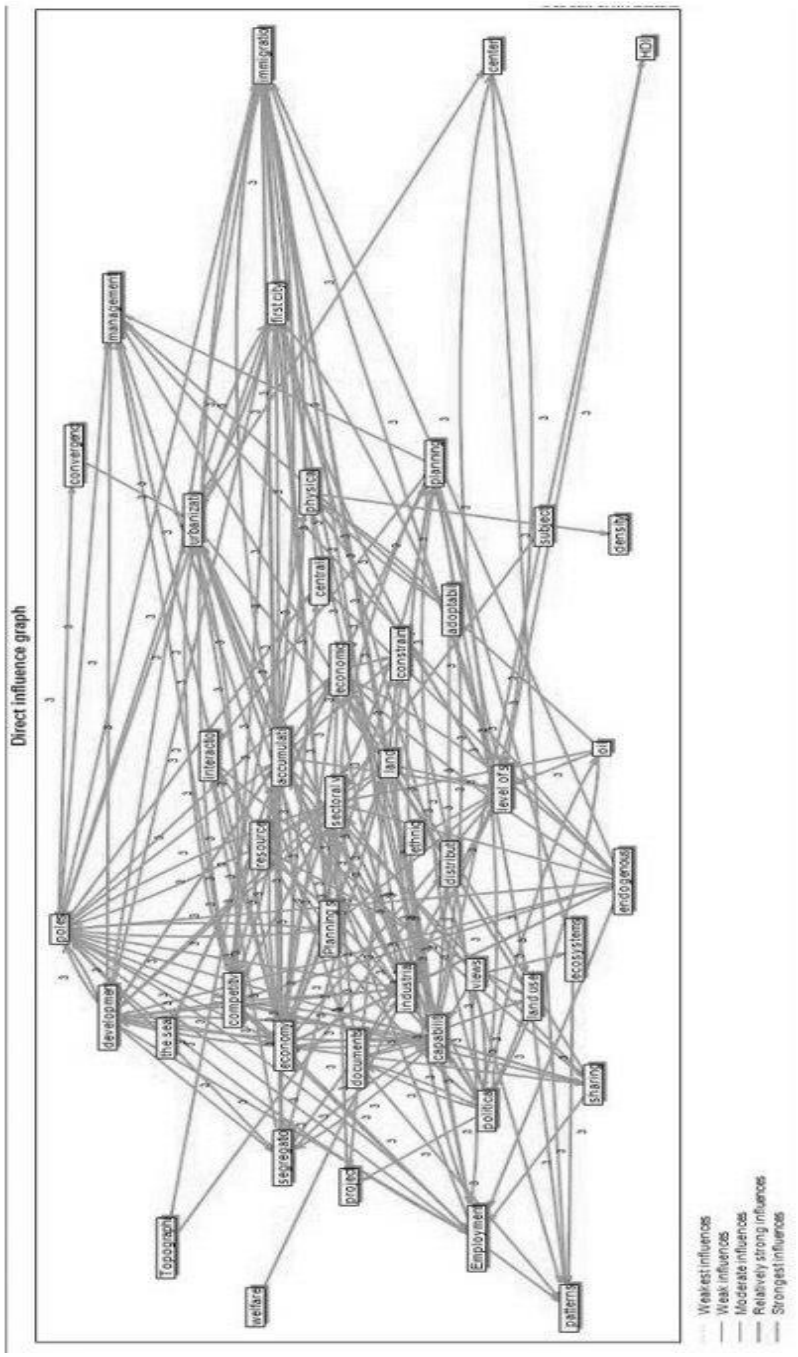


Figure 3. Direct relationships between the variables, the North coastal area
Source: MICMAC analysis output.

DISCUSSION

The combination of MICMAC output and the Delphi technique revealed the five main factors that contribute to regional imbalances in the study area. These factors are:

Lack of attention to national documents: preparation and implementation of economic development programs, based on sectoral approach and regional attitudes, without considering national documents on the North coastal macro-region, have led to the occurrence and intensification of regional imbalances, the marginalization of some regions, loss of resources and regional capabilities, and land inequalities.

Non-compliance in spatial planning with sectoral planning: as the administrative system in Iran is a sectoral system, the administrative focus has led to most activities being located around the administrative centres, where population density is very high. In addition, sectoral decisions have had uncoordinated land consequences.

The existence of the growth poles: the growth poles of the region have serious problems in terms of resource supplies, environmental protection and efficiency, and continuity of the current development process will lead to further instability and the creation of new imbalances.

The geographical resource distribution system: the budget and distribution of resources in Iran have been based on a sectoral approach and this has had a significant impact on development and in intensifying the regional imbalances between provinces.

Reliance on underground resources: dependency on oil revenue has had the consequence of economic centralization with regard to national income and spending.

Compatibility of activities with the capabilities of the environment: incompatibility between development activities in the North coastal region and the environment is one of the most substantial and important factors with regard to the North coastal region. Environmental capabilities are a potential advantage for the region.

CONCLUSION

The history of regional planning shows that many challenges need to be overcome in order to achieve desirable regional development. The results of this study demonstrate that current policies and the continuation of existing plans in the North coastal region in Iran will only intensify destruction of the environment, thus increasing imbalances and threatening disorder not only within the region but throughout the whole country. Despite the wide range of investments and financial injections made by the government throughout Iran thus far, including in the North coastal region, it has not been possible to remove the imbalances, mainly because existing agencies in the region are unable to manage the

developmental mechanisms necessary to resolve the enormous issues that currently exist there. The system demands shrewd management and tools, which do not exist in the structure of the region as it is at present. Thus, to reduce regional imbalances, this study suggests that regional planning in Iran should:

- avoid concentrating development in one centre to the detriment of other areas.
- strengthen international corridors or making new corridors in order to promote the national and trans-national role of regions.
- adopt enhancement and promotion of the spatial development of mountainous areas, using an environmental approach, especially in the western and central regions.
- integrate production systems under experienced management in industry, tourism and business.
- strengthen the functional scale of the regional centres, through commercial performance and accessibility to international corridors.

ACKNOWLEDGEMENTS

The authors would like to thank the Professors of Geography and Regional Planning who contributed to the data analysis software MICMAC and for their responses to this study's questionnaire in the development of regional strategies.

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