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**URBANIZATION AND THE LOST OF RIVER ACTIVITY ON  
MALAY HUMAN SETTLEMENT  
Julaihi Wahid<sup>1</sup> & Azli Abdullah<sup>2\*</sup>**

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**ABSTRACT**

Malaysia, as any other country, is constantly evolving in all facets of life, including architecture, economy, and culture. Despite that, the Malay settlement on the River's fringe remains an early settlement due to the Malays' strong connections to agriculture and socio-culture. The Malay's brilliance in establishing settlements on the river's fringe is among the leading reasons for this community's glorious history in the maritime world. However, today's shift in river activity has eroded the strong bond in Malay settlement. Therefore, affecting the Malay settlements, which have a significant impact on their economic growth. The research methodology employs previous researchers' exploratory techniques focusing on the effects of urbanization, as well as socioeconomic data from 350 local respondents collected during the field survey in April 2019, and observation analysis information commonly used by architects to evaluate the context of the discussion. These include physical, social, cultural, and public amenities, and the data gathered then was amalgamated using IBM SPSS V26, supplemented by interview techniques and pictorial documentation. Mapping techniques are being used to generate existing settlements patterns by utilizing the Google Earth software. Finally, AutoCAD 2018 software is used to demonstrate the current settlement pattern in the case study situation. According to the results of the study, the pace of urbanization is speeding up and creeping into the Malay settlements. The destruction of river activities encouraged in order to change Malay settlement patterns and force them to follow or reject the current trend of urbanization.

**Keywords:** River Activity, Human Settlement, Kota Bharu

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## **INTRODUCTION**

It is important to study the total range of human settlements from the most rudimentary to the most sophisticated in order to understand the villages, towns and cities that we live in. Our subject, the entire gamut of human settlements, is a highly complex system made up of five elements: nature, man, society, shells (that is, buildings), and networks. It is a complex system of natural, social, and man-made components that can be observed in various ways, including economic, social, political, technological, and cultural. As a consequence, we can grasp the widest possible viewpoint. In this article, the researcher attempts to demonstrate the necessity for, and the significance of, a vast expanse of knowledge that man is seeking to recapture and develop systematically through a few situations. Even if it is often viewed as technology and art, this discipline is a science without the scientific foundations - a mistake for which we have paid a high price. Since there is lacking presenting the entire case in a short article, several points were selected to demonstrate the truth of the initial statements and the practical relevance of the effort to investigate the influence of the loss of river activity on Malay human settlements.

## **A SHORT SYNOPSIS OF HUMAN SETTLEMENT**

Human life is essential and not dependent in the broadest sense on human settlement. Settlements have existed following the advancement of social progression for as long as humans live. Traditionally, human settlements are considered exclusively concerned with physical characteristics. Generally, human settlement is the science of the surface of the earth. According to Doxiadis (1974) and Wu (2001), it is more than only static objects and physically built-up areas, which is a process and a system that has evolved from various perspectives such as geography, topography, growing populations, technological transition, changing conditions in the natural environment, and successive social, political, and cultural attributes. It includes all elements of human life on Earth. The natural environment, as well as social, political, and cultural phenomena, influence on them exist. Human settlement is a subject of dynamic, metamorphic entities that cannot be grasped in fractions. A wide range of subjects and methodologies involving geography, urban planning, and related disciplines is required in conducting human settlement research (Ma et al, 2016). Humans do not survive alone but are connected to other living things by ideas, feelings, or environmental elements (Seamon, 2018). It is necessary to evaluate its overall structure because it involves the link between the previously explained aspects. Doxiadis and co-founded (together with Jacqueline Tyrwhitt) an EKISTIC theory on human settlement. His hypothesis explored human settlement challenges by employing dynamic and evolutionary processes (Bromley, 2003).

According to Fookes (2000), Doxiadis (1962&1972), Mitarachi (1973), Alexander (1987), Gottman (1976), and Farizkha et al (2019), ekistics has amassed a multi-disciplinary body of knowledge from various disciplines such as science, methodology, or philosophy. However, ekistics is a science that naturally develops human understanding to maintain the expansion of human existence generally. This is due to the necessity for humans to deal with the future crisis is faced by modern civilization. Heywood (1969), Middleton (2009), and Silva (2019) described ekistics as a discipline that focuses on metamorphic processes and requires an analytical set of scales based on dynamic morphology. This demands investigation on the evolutionary nature of settlements and the natural stages of their expansion.

### **THE PRINCIPLE OF HUMAN SETTLEMENT**

According to Mumford (1946), the evolution of the city starts with the development of the family. He further said that the village, which became the centre of human civilization, spread into the city. Then, it evolved into a town, a city, a metropolis, and a megapolis. In reality, no comprehensive overview of human settlement, beginning with the existence of village, town, and city until the entire fabricated system in life is investigated. This man-made system was tightly linked to each human settlement depending on the location of the area. The history of human settlements represented human existence from the beginning of the early age to modern development. Human settlement is a complicated issue, and the elements are divided into five categories Doxiadis (1974):

1. **Nature:** The whole environment as the foundation for the formation of the settlement and the functionality of the surrounding context
2. **Man / Anthropos:** The inhabitant, as an individual
3. **Society:** The interaction system between people
4. **Shell/ Buildings:** The structures that shelter, people, their function and activities.
5. **Networks (road and telecommunications):** Roads, water supply, sewerage system, electricity supply, facilities, communication facilities, economic policies, educational, legal, and political systems are examples of natural man-made systems that are used for settlement.

The above-mentioned aspects evolved in response to the economic, social, political, technological, and cultural factors. The history of human settlement need to examine for understanding since the future is unpredictable and the current situation is too restricted to analyze (Sirakov, et.al 2010; Smith, 2014 & Doxiadis, 1974). The origins, ideas, and principles that humankind has been developing and evolving over the past two million years should be learned from human experience.

Do we have a comprehensive understanding of the history of human settlement? Doxiadis (1968, 1974, and 2005) had described their 40-year investigation of human settlement. The chronology and location of early human settlements shifted dramatically over time. Each new archaeological findings changed the history of all past human settlement discoveries. This complicates the history of human settlement (Papaioannou, 2005).

### **THE EXISTENCE OF HUMAN SETTLEMENT**

We have no idea how long it will take to build a settlement. The type of settlement can be guessed from the structure's remnants. Individual shelters are the smallest, with mid-size for small families and large volumes for prominent families. These settlements were established in various ways through trial and error regardless of the limited experience and information gained from past mistakes. Christaller (1966) and (Brian & Chauncy, 1970), a Bavarian geographer and researcher, described this as the connection of acts, events, circumstances, and experiences triggered by persons or groups that comprise the building. Whether it is for living, working, pleasure, conducting business, or any other reason. In this circumstance, however, the building will support the lifeworld it shelters in connection to other lifeworlds and spatially intertwined with the environment (Seamon, 2018).

### **THE RIVER'S IMPORTANCE**

The River is the fundamental source of human life as people have access to water sources to sustain their lives (Leakey & Lewin, 1979; Kuentzel & McDonald, 1992; Wohl et.al., 2015; Alam, 2021). Humans either stay nomadic or permanently in one place (Mumford, 1961). Therefore, the River not only serves as a source of water for a human settlement, but it is also the supply of food, transport, communication and cultural formation. The River is also the ground for a better experience in comparison with other locations (Mumford, 1961; Choomgrant & Sukharomana, 2017). Ibrahim et al (2018) said the majority of the existing settlements are located on the river banks. Most people in the area have significant socioeconomic activities in farming and fisheries (Adji Syahputra, 2018; Ismail & Hasan, 2018). Furthermore, the traditional design of a house adapts to the wet soil, tropics and flood crises, alongside settlements in the arid landscapes. Therefore, the human settlement in many Asian countries started to establish along rivers. The Mekong River serves as the link between the various groups in places where tough areas form waterways (Mossop, 2018; Vadillo & Kallio, 2020). In the past, it has been considered easier than roadways. The variety of various ethnologies in language through the same linguistic family, similar lifestyles, established their settlement easily according to Hudson & Shaw (2003). This phenomenon occurred due to different beliefs and cultures in the River. Water is one of the four elements

of ancient cosmography, is considered fundamental to physical and organic life. According to Thaitakoo & McGrath (2008), the Chao Phraya River is also an important river system in Indochina since its basin defined the provinces of Central and Northern Thailand. The Upper Basin has rice fields and forests, while the Lower Chao Phraya River delta spreads across the urban agricultural market dominated by the orchards to the west, rice fields to the east, coastal shrimp farms, and lowlands fish farms. The geographical structure of the Chao Phraya River Basin influenced the architectural design and settlement as the natural environment determines the design. In Thai Environment and Culture, the "Good Old Days" of Siam (Wichiencharoen, 1993), which portrays Thai cultural patterns resembling nature, is remembered. Coastal communities are important in understanding the significance and impact of tradition in the daily lives of amphibious cultures. The community has been established to prevent and respond to annual high tide floods since predominantly populated along the River (Loucks , 2019; Panin, 1999). The traffic rafts and boathouses in the commercial zone were utilized as shophouses for convenient transportation and trading along the River. This practice has persisted since the era of Rattanakosin. Unfortunately, this Thai cultural utopia panorama has since vanished. The traditional patterns of the villages in Malaysia are classified into three groups, namely rural village, water village and a mix of the settlements, according to Hassan and Ku Hassan (2001). The geography of the riverside banks forms the basis for the land villages and the water villages. The land village is the village that first lines the bank of the River goes to the land, while the water village that began on the river develops gradually in front of the water. The local community's socioeconomic activities are fishing (Shari, 1992). The settlement pattern was shaped by the topography factors of the river basins and the development of Malay craftsmen. People build dwellings on a high-quality jetty or shelters to keep their houses by building a stable jetty throughout time. This village was called the water village (Zanuri et.al, 2020). There is also a bridge linking every dwelling in the village. The integrated pattern of the village is a mixture of two morphological forms that are hard to identify since the habitat exceeds the water and the surrounding area.

### **THE PAST EXPERIENCE: THE RIVER OF LIFE**

There has been much discourse on the role and contribution in human life of rivers. His importance in the development and participation (Pula, 2019; Isa & Samsudin, 2020) and social life had been established for centuries. There are extremely dominating links between the location of the city and the River. The River and sea served as the main transport route before the arrival of the Colonial. Elephants may also be used for transport (Mohd Faiz,

2019). However, elephants are of very little interest, unlike in Thailand (Andaya & Andaya, 1992). Human settlements such as villages were developed along the river banks and the seaside (Ibrahim, 2018). The River offers a wide range of advantages for natural transportation as the people use water as their domestic business. Through this, the community can benefit financially (Kuentzel & McDonald, 1992; Lamb, 2018). Rivers serve as important method of transportation, source of water and source of livelihood represented by the culture of life. The River is the people's choice to move inland to the island's egress (Mentayani, 2019). He referred to the villages along the banks of the River as a "station", where one village is connected to another. As in the Kelantan River, the lush delta was formed, and many agricultural activities were carried out. Kota Bharu city has fertile soil, is in good geographical condition due to the lush delta; the area has attracted the attention of locals, accommodating a large population, sustaining a dense population, and promoting urban growth. Now, with the pace of urbanization, the river is the only unnoticed natural heritage. Many rivers that flow through urban areas are polluted, eroded, and sedimented to the point of no longer be used for domestic purposes. This occurrence happened due to the formation of settlement concentration with a settlement pattern along the river banks, as mentioned by Saleh (1986). The River is important by providing for life, transport and mobility, economic, social, cultural and political interests and are beneficial for residents living on the riverbank. The river culture originated from the population concentration and its connection with the river. According to Wahid (1996), the houses stand on poles, all facing the River, using wooden sticks on each structure (bridges). However, currently, the city's rivers have now transformed for garbage and hazardous waste disposal. Consequently, this leads to the loss of a valuable natural endowment (Mohamad et al, 2005)

### **THE MALAYS OPPORTUNITIES ON THE WATERWAYS**

The Malays are very skillful in making boats, allowing them to be ancient seafarers. The Malays could be in the advantage of using this skill as they could cruise globally and trade with countries abroad (Evers & Hornidge, 2007; Evers, 2017; Evers, 2013). They originally started operations in the coastal areas before expanding to a global enterprise. They also cooperate in West and East China with traders from India (Fahimudin , 2020). Malay traders also believed that since the early centuries AD, they came to southern China and Funan. This business was responsible for transforming this community from river fringe settlers to international traders.



## **THE DEMISE OF THE RIVER ACTIVITY AND MALAY CULTURE**

Early settlements in Malaysia were discovered near rivers and coastal lines like other settlements worldwide. These settlements were not confined to the topography and location of the river during the British colonial age. Today, there are many colonial cities in Malaysia, of which the majority have no connection or contact with the river. Rather, the city was designed based on its economic importance, including maritime trade, natural resources, import and export activities (Mohamad, Toriman, Aiyub & Jaafar, 2005). Roads and railways were established in the British economic centres under the Colonial administration of 1920 mainly to exploit our natural resources. The major cities serve as hubs for agricultural resources with the roads connecting them. As a result, the development of towns in the area has been encouraged (Kiroh & De Silve, 2018). Finally, the River is no longer an important element in determining the location of cities. The phenomenon also arises in the post-independence era. Private developers established new urbanization programs during the NEP that consider the River at the back of the houses. Almost all of the new towns are located far from the River. Due to the Industrial Revolution, the River was no longer the major transportation system. The city thrived and developed as a mining centre, collecting and distribution centre for rubber products. Later, George Town, Kuching, Kota Kinabalu, Taiping, Ipoh, Seremban and Kuantan, and the largest town of all Kuala Lumpur, became the capital city. After independence, all these major towns were connected to roads, and the towns expanded swiftly for economic and development purposes (Idrus et al, 2011). As a consequence, the River's role as a communication waterway is diminishing. The community's river connections are a future loss (Hartanto & Ruly, 2020; Wicaksono, 2018). After independence, the new metropolis included a new business centre and modern housing (Awang Besar et.al, 2012). According to Sendut (1962), the discovery of economic minerals, especially tin, was a major development in the late nineteenth century. As a result of this prosperity, traders established numerous mining centres, including Taiping, Ipoh, Kuala Lumpur, and Seremban (Sendut, 1962). It was planned following a modern plan that was only marginally compatible with the Chinese. Colonial City was established at the time to promote Chinese migrants' urbanization processes. The invaders are apprehensive about the Malays' potential to survive in the city. According to Ever (2016), most urban spaces in Malaysia were constructed by colonists to sustain urban areas considered appropriate exclusively for Chinese citizens. The character of Chinese 'closed space' differs significantly from that of Malay centrifugal space. The formation of the colonial city resulted through urbanization, was not based on their geographical, social, or religious characteristics. These

cities have the same character as colonial cities but differ slightly in their administration. The new settlement is unaffected by the river operations. However, some cities developed and remained near the River during the colonial era. The Chinese have adapted to the urban system because they've always treasured the entire city image and city life in their mental map (Ever, 2016). They can describe the city's morphology, emphasizing clear structures, borders, routes, and activities. The existing Malay settlements' development has shifted dramatically since then. Urbanization had significantly impacted on Malay settlements, even most residents are descendants of the original inhabitants,. Kuala Lumpur has evolved into a political, cultural, economic, industrial, and tourism centre resulted from mining operations. It is strategically located at the confluence of the Klang and Gombak rivers. Furthermore, the Klang and Damansara River segments run through Petaling Jaya, a planned new colonial metropolis before independence (Mohamad et al, 2005).

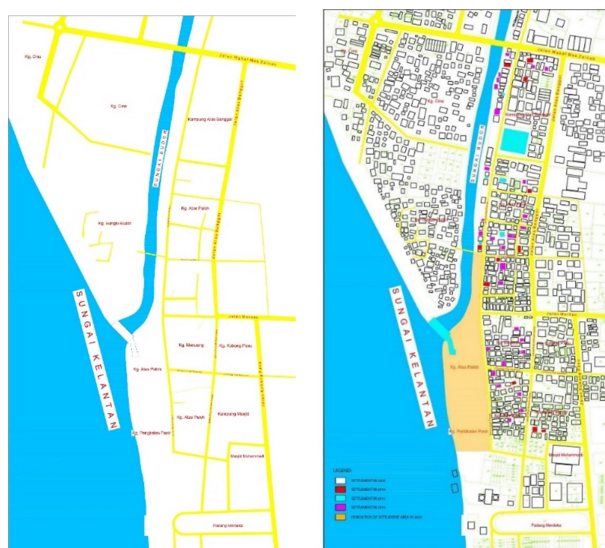
## **RESEARCH METHODOLOGY**

The Malay human settlement is strongly related to river activities. This paper employed a mixed-method commonly disburshed in social research technique with a combination of a case study and longitudinal analysis of the progress of urbanization in Malaysia and the development of literature from the human settlement theory and urbanization process in Malaysia. A case study of a Malay settlement at Kota Bharu helps to clarify the scenario of sequential detail of the finding due to the pace of urbanization to derive the suggestion and discussions. This area was selected as it is the oldest settlement in Kota Bharu and is rich in cultural and historical values. This area is the origins of metal works and wood crafts trades practice by the people that became the trademark of Kelantan. The primary data was obtained from the questionnaire conducted during the fieldwork in 2019 using a random sampling technique to distribute the questionnaire to the case study area. The direct and participant observation technique, visual analysis, and interviews were used to help to understand the surroundings and the cultural aspect of the locals, which were greatly influenced by the daily activities of the settlers. A total of 350 questionnaires were distributed by the researcher in the area through various endeavors: that is through face-to-face interview, groups meeting and research assistance from the villagers, which easily compromise access in the area. Although there are 89 questions in the form, only the variables related to the topic of this paper are extracted and discussed in the context of the related area. With the help of the Google Map, Drone Dji Mavic Mini 1, AutoCAD 2018 and longitudinal history of the area,

the researcher enabled to visualize the change of the settlement and cross-examined with the theory and interview from the respondents.

### THE MALAY SETTLEMENT IN KOTA BHARU, KELANTAN

The existence of several settlement units became one of the important facets of Jalan Atas Paloh Village (Figure 1 and Figure 2). The name of the village is derived from the influence of a specific person or activity carried out here that portrayed the greatness of the Malay community.



**Figure 1: Malay settlement pattern in the research area (Source: Abdullah, 2021)**

It has been customary for people to name their village after a particular figure. Even though they have a few settlements, they inform every activity or the presence of a person in their neighborhood to the village. Menuang Village is one of the last remaining settlements. Traditionally, the majority of the residents in these settlements engaged in the copper industry, which produces pottery and other copper-based products, also includes the manufacturing of gold coins known as 'ufti' for trade with the Siamese Kingdom.



**Figure 2: The image of the study area (Source: Abdullah, 2021)**

The same situation happens at Haji Harun Village, situated adjacent to Tok Semian Road. Tok Aki Haji Harun, a religious figure in the neighborhood, is responsible for the existence of this settlement. As a consequence, his name has been perpetuated as a village name to honour his leadership. Haji Harun Village has long had kinship and strong brotherhood. The rest of the people that live here are connected to each other by blood. Tok Aki Haji Harun, the institution's founder, has invited his relatives to dwell near his family. It is believed that there were only three settlements at the beginning of this village. They even built small bridges, or 'titi,' in the kitchen area to link one settlement to another because of their close bond. The Council School (Sekolah Majlis), now known as the Muzium Majlis dan Adat Istiadat Agama Islam Kelantan, and the traditional religious institution in Kubang Pasu Village, are among the religious institutions and schools at Jalan Pos Office Lama (refer to Figure 1.0) that badly affected by urbanization. According to Doxiadis (1974), his global study shows that, while each town's physical land is diverse, the patterns of these towns will be the same as they spread and develop over the whole world. It's because of the relatively small size of the village. Nevertheless, due to their robust economies centered on cattle breeding and hunting, other areas, such as the River and the hills, would be more vulnerable to geographical stratification. According to McGee (1975), a community and a state are formed for three reasons. First, there has been a rise in population in the past and a shift from rural to urban settlements. The second reason is the increase in birth rates in comparison to death. The natural progression is unavoidable. The third reason is that the migration of people from rural to urban regions. They are important urban and economic drivers.

### **THE MALAY SETTLEMENT'S TRANSPORTATION SYSTEM**

Transportation is necessary to shift from one place to another. Boats were previously the main transportation since the Kelantan River is rich in various socioeconomic activities. However, during the Industrial Revolution, the Malay increased their usage of boats gradually. This finding is corroborated by Table 1, demonstrating that 208 respondents (59.4 per cent) use cars to get around the city. Currently, a car is a necessary vehicle for a settlement owner. At the same time, 11 respondents ( $n = 3.1\%$ ) took a cab to the city.

**Table 1: Transportation to the city (n = 350)**

Item	Frequency	Percent
Boat/ Perahu	5	1.4
Car	208	59.4
Taxi	11	3.1
Motorcycle	113	32.3
Bicycles	13	3.7
Total	350	100.0

(Source: Abdullah, 2021)

This scenario showed that the people in the study area heavily rely on automobiles. Fast and safe from the climate become the primary reasons. Furthermore, this vehicle can carry a large number of passengers at once. According to observations, the majority of Malay residents owned an automobile. Cars are now considered a necessity for a house owner. It is no longer the same as it was before. At the same time, their socioeconomic situation remained unchanged.

*'...we drove to town because it was faster and easier.' There are many more vehicles on the road... (R-1).*

The city only provides them job opportunities. Meanwhile, the city's infrastructure is still in a poor state. Observations revealed that the roadways and parking lots in this area were likewise in bad condition. The majority of vehicles are parked on the side of the road, which affects others. This situation also showed that urban planning is now exclusively focused on transportation, human lifestyle, and industrial development. However, this does not apply to urban infrastructure. Although these settlements are in the city, they are not affected by the city's development since progress develops exclusively in the urban economic sector. As a result, their level of living remained constant. Their lives will be stressful and eventually impoverished in urban areas.

*'...with my current income, it is hard for me to live in the city. My salary is not particularly high. While the cost of living is always increasing... (R-2)*

This result is consistent with the findings of Wahid (2014), according to which metropolitan areas are regarded as a source of life for those with economic and educational capital. Other low-income groups are not affected in the same way. This group will be forced to remain involved in the urbanization process because the city is also the centre of urban poverty. Informal human settlement, such as formal squatting, generates spontaneous disturbance in the economy, environment, and human health. These phenomena have become commonplace in the developing world's urban living environment. As a reason, the image of a Malay

settlement gradually associated with a squatter settlement in the metropolis. The Industrial Revolution impacted transportation technologies such as railways, automobiles, and aeroplanes (Mohajan, 2019). These changes significantly affected human settlement, which resulted in the region's expansion, especially in the history of human settlement and population expansion (Doxiadis, 1974). Furthermore, some of these developments affected the Malays' water transport network obsolete. The loss of the transportation system impacted Malay expertise in manufacturing boats, economic opportunity, and, more importantly, the pattern and character of Malay settlements in the Malay settlements ecosystem. The River serves as the source of water and food and a mode of transportation, communication, and cultural formation for the Malay settlement (Figure 3). Life on the River is also the foundation for a better experience compared to other areas, according to (Mumford, 1961),. As a result, these changes decreased the chances of improving the lives of Malay people in the city, and no effort has been made to restore the function of the River as a source for Malay growth in the city.



**Figure 3: Kelantan River in 1907 (i) and the ceremonial boat in Kelantan (ii) (Source: Abdullah, 2021)**

### THE CHANGE OF TRANSPORTATION

Previously, the researcher emphasized the impact and contribution of rivers in the human experience. Traditional societies used it as a mode of water transportation. The relationship between the city and the River became one of the contributing factors to the emergence of Malay settlements. In contrast to cities, human settlements such as villages were established along rivers and coastlines due to the arrival of the colonials (Ibrahim, 2018). A River is also

a natural mode of transportation that offers a variety of attractions. Apart from exploiting Kelantan's wealth, the Colonials also built roadways after their arrival. Roads and automobiles are utilized to expedite the construction of new buildings, regardless of the socioeconomic impact of the Malays. Nowadays, the great majority of Malays have cars in their dwellings.

**Table 2: Vehicles that people own in study area (n = 350)**

Item	Frequency	Per cent
Bicycle	36	10.3
Motorcycle	98	28.0
Car	211	60.3
Others	5	1.4
Total	350	100.0

(Source: Abdullah, 2021)

According to the results in Table 2, n = 211 (60.3 per cent) respondents owned a car. However, this does not imply that they are at ease in the settlement. These data also revealed that certain respondents still ride their bicycles regularly. A total of n = 36 (10.3 per cent) rely only on bicycles for mobility. According to observations, this group could not afford a car and would take a taxi for transportation. According to one respondent (R-33), he solely utilizes bicycles and motorbikes to travel around the city. He will take a taxi with his family for further travelling. This situation indicated that the impact of urbanization leads a group of the minority to fall further behind. Even though the city is known for providing opportunities, some people are nonetheless left behind. However, this group attempts to adapt due to their strong desire to live in the city. This result is corroborated by McGee's (1975) view that most migrants who migrate from rural to urban areas have an aspiration to adapt to urban life. These people continue to develop opportunities and a way of life depending on their circumstances while being behind technologically.

On the other hand, the motivational push factor is a component for migrants. It is not the same as the situation of the residents, the vast majority of whom are locals. Residents here are no longer depending on motivational forces to get through a day due to the psychosocial stressors and the capacity to move on with the other's life. They were described to have few opportunities to migrate to other areas since this is a city settlement.

It has a strong influence on the Malay settlement. Observations have previously shown that the emergence of settlement concentrations with settlement patterns originated along riverbanks. This is due to the significant geography and rivers effects. This finding is

corroborated by Saleh (1986), who believed that the River is significant to those who dwell on its banks to satisfy their needs and sustain their lives. Also, for their economic, social, cultural, and political and mobility. Finally, the settlement no longer has a linkage between nature and humans due to changes in the transportation system (Figure 4).



**Figure 4: The loss of river activity in Sungai Budor, Kota Bharu Kelantan.**  
(Source: Abdullah, 2021)

#### TRANSPORTATION'S IMPACT ON MALAY SETTLEMENT

Automobiles are now considered a necessity. Previously, the Malay would use the boat as a mode of transportation. However, they no longer use it. The rapid pace of innovation has changed the community's lifestyle and put additional pressure on it. Traditionally, parking is not provided in the Malay settlements as they use boats that occupy no room in the settlement area. They anchored their boats in a nearby river. They are now confronted with challenges as a consequence of their dense population. Due to the congested environment, this settlement is unable to provide sufficient parking space. Due to the increasing number of cars, the area eventually became congested. Therefore, two effects were discovered in the settlement. The first is that the high-income group has a more comfortable settlement, adapting to urbanization. On the other hand, the poor people live in squatter settlements lacking adequate facilities and comfortable infrastructure.

**Table 3: Vehicle on the settlement (n=350)**

Item	Number of cars in the house		Number of motorcycles in the house	
	Frequency	Percent	Frequency	Percent
1	216	61.7	208	59.4
2	62	17.7	77	22.0
3	26	7.4	12	3.4
4	2	.6	5	1.4
No	44	12.6	48	13.7
Total	350	100.0	350	100.0

(Source: Abdullah, 2021)



Table 3 shows that n = 216 respondents (61.7 percent) possessed one automobile for each settlement. At the same time, n = 22 respondents (12.6 per cent) claimed that they did not have an automobile. This scenario demonstrated that the Malay community in this area believes the automobile is necessary for daily life. Investigation showed that the number of automobiles was limited due to limited parking space (Figure 5). This result is supported by Table 4, demonstrating that only n = two respondents (0.6 per cent) own four automobiles in the settlement. Due to the obvious dense population, parking space seems to be a critical problem. This factor is considered as one of the reasons why each family has a relatively limited number of automobiles. Other factors, such as family economic factors, should also be considered.



**Figure 5: Limited parking in settlement areas (Source: Abdullah, 2021)**

The above-mentioned result is supported by Table 4, indicating that n = 140 respondents (40%) parked their automobiles outside the settlement compound. According to observations, this situation is problematic for the traffic system since most automobiles are parked on the side of the road. Due to the issue of dense settlement areas, parking spaces are in limited spaces for homeowners. In contrast, n = 70 responders (20.9%) have a car porch. Observations also revealed that most automobile porches were placed below the house because most settlements here were built with the silt on the ground. As a result, the house's ground floor is widely used for a variety of functions, including parking and a store.

**Table 4: Vehicle storage (n = 350)**

Item	Frequency	Per cent
Car porch	73	20.9
Under the house	137	39.1
Outside the house compound	140	40.0
Total	350	100.0

During colonial rule in 1920, the British developed roads and railways to exploit our economic wealth. The roads connect rural and urban areas to improve the traffic on land. The construction of settlements began to concentrate along the roadways. This observation is substantiated by the findings of a study conducted by (Kiroh & De Silva, 2018). This scenario also prompted the development of cities near roadways. Therefore, colonial urban planning started causing problems in the Malay settlement. Rivers are no longer a significant

element in urban planning. This also happened during the post-independence era. Private developers introduced a new development design during the NEP that placed the river area on the backside of the house. The front porch is no longer a unique characteristic of Malay settlement. Almost new settlements are constructed away from the River. This has become a problem as the River was no longer the primary transportation route after the Industrial Revolution. Through observation, roads are now the primary mode of access in the study area as a result of Kota Bharu's colonialism planning.

This discovery is corroborated by (Idrus et al, 2011), who argued that roadways connect all major cities, even though cities continued to grow after independence for economic and development goals. As a result, observations show that rivers as communication water channels are diminishing. The community's link to the rivers is a future loss. These data are compatible with previous research (Wicaksono, 2018), suggesting that rivers are no longer important for the community development component. Observations also revealed that the settlement is now being constructed and renovated with the porch of the settlement no longer facing the River. The settlement pattern transformed and is no longer the same as at the beginning of the settlement. The dwellings were constructed in line with the porch facing the River, according to (Wahid & Harman Shah, 1991). Now, all of those characteristics is started to disappear (Figure 6).



**Figure 6: River is no longer be used as a front porch in Malay settlements**

**(Source: Abdullah, 2021)**

## **DISCUSSION AND CONCLUSION**

The existence of Malay settlements pertains to the potential to construct their unique ecosystem. They developed an autonomous community with their own cultural, economic, and political systems without depending on other ethnicities,. The Malay settlement reacted through ideas, ideology, ideas, and inspiration to the global consumers. They demonstrated that they could effectively adapt to their surroundings and form a community that strives for success in high quality of life. The destruction of the relationship between the environment and Malay settlements has created vulnerable ecosystems. This is due to the Malays' habit of

constructing settlements on the riverbank, demonstrating the relationship between nature and humans. The magnificence of the Malay settlements directly connected to the River and the Malay community and the settlements is expressed as a village in Malay urbanism. Malay urban living patterns are influenced by their needs and the manner of life of the community. This achievement is considered the lack of Colonial influence, law, and development regulation, which is a concept of the capitalist system. However, Malay settlement patterns gradually changed as the British introduced a new urban system.

The River is the primary centre of Malay settlements. The Malay settlement can conserve energy because of its accessibility to the River,. Due to the sheer smaller range on their surroundings, it can speed up the process of basic survival. All of the critical parts for their sustenance were focused around the Malay settlement. However, urbanization gradually changed their culture and lifestyle, depending on the River,. The shifting activity of river life started to change their relationship. The Malays' lifestyle and culture were gradually influenced due to the loss of the character of the place.. The Malays' lifestyle gradually changed following the urbanization, causing them to fall behind in the economic sector. The Malay eventually accepted the modern economic sector, which drastically changed the lifestyle pattern throughout the century. This caused many river-related activities rapidly decreased. As a consequence of this scenario, the Malay identity, thought, and culture has been gradually disappeared. The rivers have been abandoned and no longer provide a significant benefit to the Malay settlement. These changes eventually forced the Malays to adapt their way of life and way of thinking in order to keep pace with urbanization.

The Malay worldview has been affected by the process of urbanization, which the Malay take for granted or unconsciously. The Malay settlements that had been in existence for three generations (80 years) faced the consequences of urbanization, causing their lifestyles to change. River activity eventually fail to benefit the Malay to provide a reasonable settlement. Instead, they were forced to compete with other races to live a better life. They are not victorious because other races, especially the Chinese, have more urbanized experiences than the Malays. To recapitulate, the relationship between the River and Malay settlements has a significant effect on Malay settlement patterns. The Malay settlement is no longer concerned with the River's relationship, and the River is no longer a porch overlooking the River. This change is the consequence of the existence of roads that connect people. Meanwhile, the Malay community need to adapt their settlement in order to provide at least one area for vehicle parking. These changes increased the density of settlements. Every day, the number

of automobiles increases in tandem with the growing population. Meanwhile, the infrastructure system is in poor condition, which not portraying the image in the city.

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