

## **Changes in urban structure in Thanlyin after the construction of Yangon-Thanlyin Bridges**

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### **Abstract**

The urban structure changed in the form and extension of Thanlyin Town with the opening of bridges increased population, changing economic activities, and development of infrastructure: universities and luxury houses were emerging. The study was delineated into before and after the opening of Yangon-Thanlyin Bridges: periods 1907-1925, 1925-1960, 1961-1988, and 1988-2017. The study explores the changes in urban structure over four periods, as well as the attitudes of local people towards the construction of bridges. The outcomes of the study are dramatic changes in the urban spatial structure and commercial sector in Thanlyin Town. The urban area of Thanlyin Town has remarkably been extended and a new ward, Aungchantha ward, was established in 1989. This paper presents the field observations and interviews that were conducted. Statistical data were obtained from the departments concerned. Quantitative and Qualitative data were collected in six research fieldwork campaigns in 2018-2019. Collectives of 43 in-depth qualitative interviews with local people and information from field observation are combined in a mixed method approach. Local people's perceptions were analyzed by the SWOT method, and interviews were conducted.

Key words: urban structure change, infrastructures, local people perception, SWOT

### **Introduction**

Transportation accessibility can be seen obviously in urban structural change. In 1989, the Ministry of Construction drew up a master plan for the development of Thanlyin and its environment. According to the plan, the Yangon-Thanlyin Railroad Bridge (1) was opened in 1993 in the northern part of Thanlyin, and the bridge (2) was opened in 2007. The Thanlyin Bridge (2) was established for easy access to Thilawa Port and the Thilawa Special Economic Zone (SEZ). The government also planned to open the No.3 bridge. The bridge is now being built and not completed yet. It will join Thanlyin and Thakyatha township by crossing the Bago river. After completion, the transport between Yangon and the Thilawa Special Economic Zone would be smooth and rapid, and more foreign investment can be expected in the Thilawa SEZ. More foreign investment can generate more jobs for the local inhabitants, which will lead to further changes in the urban structure of Thanlyin.

With the opening of two bridges, other infrastructures were developed, such as universities, Star City housing, Thanlyin Yatanar housing, Kyalsin housing, and Thirihanthar housing were emerged. The commercial and service sector was developed.

The location of Thanlyin opposite to the commercial city of Yangon is favoured to become a collecting centre and retransforming centre for the agricultural products, fish and fish products from its rich hinterlands. As a result, the population had increased and settlement had expanded along the higher ridge. In the early years of the Revolutionary Government, the military regime redefined the town boundary and internal ward boundaries. The establishment of the new ward in 1989 was to relocate displaced people from both banks of the Bago River around the Yangon – Thanlyin Bridge (1) construction plan area. The last ward added to the town is Aungchanthar on the southern end of the former town in 2017.

The opening of the Yangon-Thanlyin Bridge has had far-reaching effects on the urban structure of Thanlyin and beyond. It creates direct and speedy access to Yangon City, an economically attractive centre. During the transitional period from the 20<sup>th</sup> to 21<sup>st</sup> century, the

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former satellite town, Thanlyin, functioned like a suburb of Yangon. Relatively cheap land price compared to Yangon suburban and easy access to Yangon and neighbouring. Consequently people move from Yangon and others area to Thanlyin. That is why the urban area is changing significantly both inside and outside of the town due to increase population and emerging the commercials activities.

**Study Area**

Thanlyin Town is located in the southern part of Yangon and is included in Southern Yangon District. It is situated on the left bank of the Bago River. The town is located between latitudes 16° 45' and 16 ° 47' north and longitudes 96 ° 13' and 96 ° 16' east. It is bordered by Thonegwa and Khayan township on the east, Kyauktan Townships on the south, and the Yangon River on the west, and the Bago River on the north (Figure 1).

The total area of Thanlyin Town is 15.52 sq.km (5.99 sq.mls), 3.9 miles long from north to south and 1.9 miles from east to west. It includes 17 wards. The shape of the township is elongated. The area of the town is 6.7 percent of the total township area.

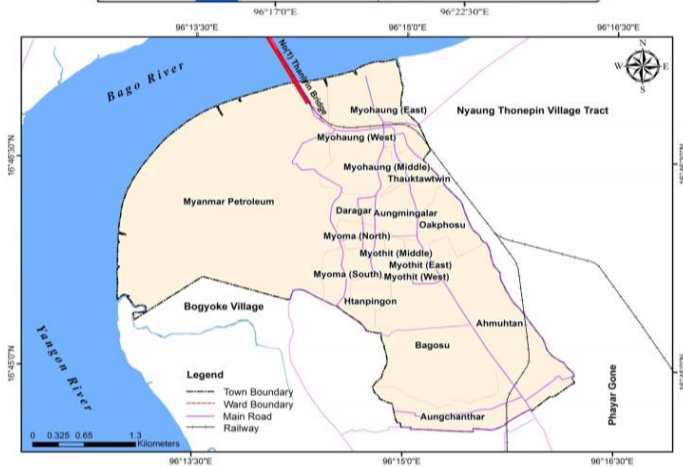
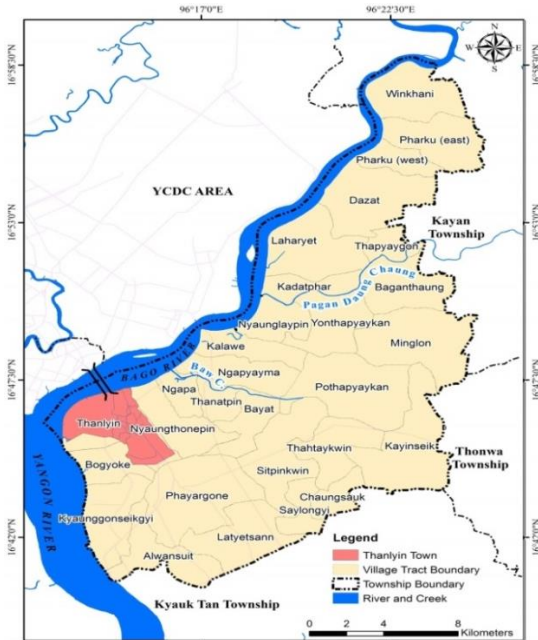


Figure 1: Location of Thanlyin Township  
Source: Myanmar Survey Department

Figure 1: Location of Thanlyin Town  
Source: Myanmar Survey Department

## Research Background

Transportation accessibility can be seen clearly in urban structural change. In 1989, the Ministry of Construction drew up a master plan for the development of Thanlyin and its environment. According to this plan, Yangon-Thanlyin Bridges 1 and 2 were opened in 1993 and 2007. After the opening of two bridges, the urban structure has changed significantly due to an increase in the number of people, changes in commercial activities, and the development of infrastructure.

## Research Questions

Against this background, the newcomers move from various places to Thanlyin town due to the accessible transport. At the same time, the urban structure of Thanlyin town was changed. The aim of the study is to explore urban structural change in Thanlyin Town. The guiding research questions are:

Why do urban structural change in Thanlyin Town after the opening of the Yangon-Thanlyin Bridges?

Where are the commercial activities concentrated in the town?

What are the major challenges and future prospects of local people?

## Materials and methods

The research design is based on a mixed-methods approach in which systematic literature search, secondary data collection such as population, number of wards, types of economic activities, etc., and unsystematic talks, in-depth interviews, and field observations of people were conducted. The literature search included reviewed articles, published documents, and unpublished studies, as far as they could be retrieved from international libraries. During the empirical fieldwork, field observation and 43 in-depth qualitative interviews with local people were conducted in 2018-2019. Based on the findings, a comprehensive analysis of the future urban structure is drawn. Local people's perceptions were analyzed by the SWOT method and interviews were conducted.

## Results and Findings

With the opening of two bridges, other infrastructure was developed. In particular, the development of infrastructures such as universities, increased luxury houses (Star City housing, Thanlyin Yatanar Housing, Kyalsin Housing, and Thirihanthar Housing), and universities were opened after the construction of Yangon-Thanlyin Bridge No.(1). The change in urban structure has accelerated due to the emergence of universities. There are four universities in Thanlyin such as East Yangon University (EYU), Thanlyin Technological University (TTU), Myanmar Maritime University (MMU), and Cooperative University.

Besides, after the construction of Yangon-Thanlyin bridges, the newcomers moved from different places due to the accessible transport. According to the increased population, the urban structure has been changing dramatically. Consequently, a commercial sector has emerged.

## Changes in Urban Structure

After opening the Yangon-Thanlyin bridges, the urban structure has significantly changed. The development of infrastructures such as universities, larger luxury houses, population growth, and economic growth are particularly notable.

In the ancient times, Thanlyin was accessible from Dagon (old Yangon) and most parts of Myanmar only by waterway, and thus port-site on the bank of the Bago River at the northern end of the Thanlyin Kyauktan Ridge is regarded as the origin of the old settlement. That area is

called Myohaung East, Myohaung West and Myohaung Middle. There were only a few residents in Myohaung East. With the increasing population Kalarkan village became Myohaung East, Oukkyinsu village was named Myohaung West and Shansu Village was Myohaung Middle.

During the years 1907-1925, these villages became parts of the town with the names of Myohaung East, Myohaung West and Myohaung Middle wards. Based on the architectural style and condition of the monastery, the old town had already existed since 1877. Myohaung (East) occupied the bank of the Bago river in the extreme north of the town. Myohaung (Middle) is also located by the bank of the Bago River in the northern part of the town. The ward had the major port of the town. Kannar (Bazaar) was managed by the Township Development Committee. It was usually festive with pilgrims, visitors, and buyers being close to the jetty (Figure 2).

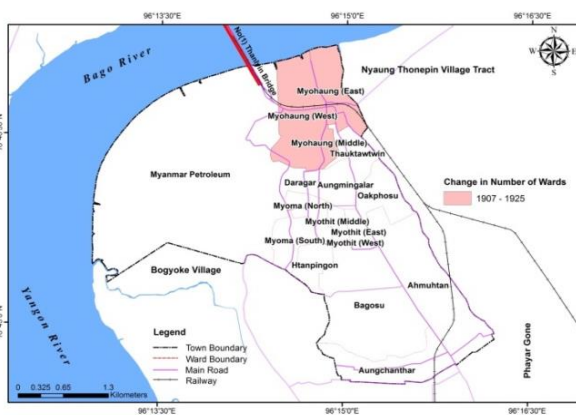


Figure 2: Changes of urban structure in Thanlyin (1907-1925)

Source: Based on Table (1)

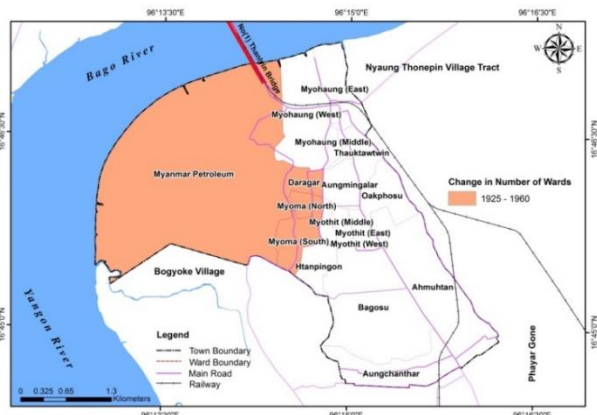


Figure3: Changes of urban structure in Thanlyin (1926-1960)

Source: Based on Table (1)

During the 1925-1960 period, Yen-an, Myoma (North) and Myoma (South) emerged. The ward was adjoined by the compound of the British Oil Company and Oil Refinery, and it was the second largest ward of the town. Although the area of the ward was large, the majority of the residents were the staff of the oil refinery. Much of the ward area was occupied by the Myanmar Oil Refinery, Shinmywaylun Pagoda, and De Britto Castle under the Department of Archeology. Myoma (South) was located close to Htanpingone ward in the western part of the town. The northern part of this ward was known as the Myooakyi (Township Administrator) compound, and it was divided into Myoma South and Myoma North wards. It was one of the wards located in the central part of the town. The Darakar ward is occupied mostly by Indians (Figure 3).

During the 1961-1988 period, the wards that appeared in that period were Thauktawtwin, Aungmingalar, Okhposu, and Ahmuhtan. Thauktawtwin ward was located to the east of Thanlyin-Kyauktan road, between Myohaung East and Okhposu ward. It was adjoined by Nyaungthonepin Village in the east. It was named Thauktawtwin because it is believed that the water from a surface well in that place might have been used for offering the Buddha image by the ruler king of that day. Aungminkalar ward had the compound of Arzarni monument and Kyaildaeyon pagoda. There were brick buildings for the government staff of Thanlyin Town. The Kondan ward was called Ahmuhtan ward as most of the government service personnel resided in this ward. Kondan ward is the largest in Thanlyin Town. It was located on both sides of the road leading to Kyauktan at the southern extreme of the town. The ward had government offices; Myanmar Economic Bank, Township Court, Township Land Record Office and Township Agriculture Office. Besides, it also had a golf club. Okhposu ward was located on the eastern side of the Thanlyin-Kyauktan road between Thaukyawtwin and Ahmuhtan wards (Figure 4).

During the (1989-present) period, urban area growth in this period included Bagothu, Myothit (East, West, and Central), Htanpingon, and Aungchanthar wards. Myothit (East, West, Central) is located in the central part of the town and has BEHS N0.(3), BEHS N0.(4), and Township general Hospital. It is located in the western part of town. Thus it was the second most populated ward of the town. It is located in central part of the town. Myoma market is located in this ward together with Myahantahr Cinema hall. The presence of Myoma market and Cinema hall are the causes of being alive with teeming crowd in this ward. Aungchanthar ward emerged after the opening of Yangon-Thanyin Bridge (1) in 1993. The ward was constituted in Thanlyin Town in April, 1994.

Thanlyin Town is now seventeen wards after the establishment of Aungchanthar Ward. The villages of Bogyoke, Nyaungthonepin, and Phayargone, which are adjacent to the urban fringe, have been proposed by the Ministry of Home Affairs to be included in town area. Bogyoke village is located in the southwestern part, Nyaungthonepin Village in the northeastern part and Phayargone Village in the southeastern part of the town. The Town Housing Department has taken on the responsibility of urban development since 1993, getting involved in the creation of new wards for urban growth. The wards created by the Town Housing Department were Aungchanthar Extended Ward and Ayetharyar, Ayemitta and Ayethitsa wards. The chief cause of the creation of these new wards was to relocate the households removed from the Special Economic Zone (SEZ) and those removed from Phayargone village in the construction of Zarmani Dam. The wards in extended Aungchanthar ward and Phayargone ward have a systematic layout with a grid pattern. However, these wards have not been officially included in Thanlyin Town by the Ministry of Internal Affairs yet.

The housing projects established by the Town Housing Department include Thanlyin Yatanar Housing Project, Kyalsin Housing Project, and Thirihanthar Housing Project. The extension of new wards, the prevalence of the Special Economic Zone, housing projects, the opening of universities, and the improvement of transportation infrastructure enhance the socio-economic status of the villages adjacent to the town area. In recent years, besides the increasing population of the town, the development of infrastructure, like buildings and transportation routes, and the establishment of new institutions, like district level offices and universities, have made Thanlyin an attractive centre for migration and the establishment of business in the favourable area. Thus, urban features and urban facilities are currently growing on the fringe of the town, outwards except at the north-east end. Even within the town area, some formerly waste land has been reclaimed and developed into luxury housing complex, e.g. "Star City" on the bank of the Bago River on the west of Yangon-Thanyin Bridge (1)(Table 1) and (Figure 4 and 5).

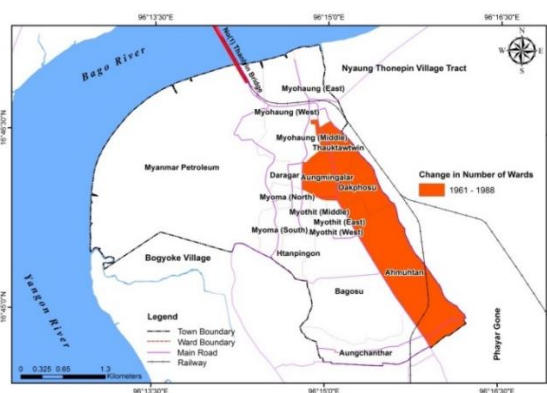


Figure 4: Changes of urban structure in Thanlyin Town (1961-1988)  
Source: Based on Table (1)

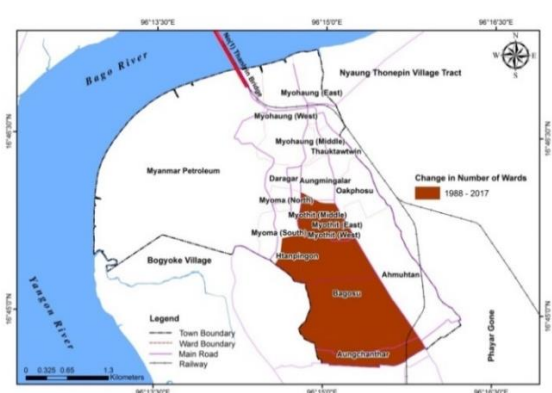


Figure 5: Changes of urban structure in Thanlyin Town (1988- 019)  
Source: Based on Table (1)



Table 1. Increase Number of Wards in Thanlyin Town (1907-2017)

Sr No.	1907-1925	Sr No.	1925-1960	Sr No.	1961-1988	Sr No.	1988-2017
1.	Myohaung (East)	4.	Dahrkar	8.	Thauktawtwin	12.	Bagosu
2.	Myohaung (Middle)	5.	Myanmar Petroleum	9.	Aungmingalar	13.	Htanpingonn
3.	Myohaung (West)	6.	Myoma (South)	10.	Okkphosu	14.	Myothit(East)
		7.	Myoma (North)	11.	Ahmuhtan	15.	Myothit (Central)
						16.	Myothit(West)
						17.	Aungchanthar

Source: Field Survey, 2019 and, Saw Paw Lu, 1987

### Establishment of Bridges

In 1989, the Ministry of Construction drew up a master plan for the development of Thanlyin and its environment; two bridges were constructed, and one bridge was not completed yet.

At present, there are two main bridges in Thanlyin; one is Yangon-Thanlyin Bridge No. (1) and the other is Yangon- Thanlyin Bridge No. (2). Another bridge, Yangon-Thanlyin Bridge No. (3) is being built.

Yangon-Thanlyin Bridge No (1) was built over the Bago river, 42 kilometres northeast of the confluence between the Bago and Yangon rivers. It was built with the cooperation of Myanmar engineers and Chinese engineers as a Myanmar-China friendship bridge. The building of the bridge started in 1985 and was opened on July 31<sup>st</sup>, 1993. The bridge is 5977 feet long and 67.24 feet wide, having a railroad along the middle and one lane each on the left and right sides. It has been a main connecting road between Yangon and Thanlyin, Kyauktan, Khayan, and Thonegwa townships, as well as Thilawa SEZ.

The main objectives of building the bridge are: (1) to easily transport agricultural produces and manufacturing items from Thanlyin, Kyauktan, Khayanm, and Thonegwa townships to Yangon; (2) to easily shift crude oil and petroleum products produced by Thanlyin oil refining plant; (3) to have easy access to Thilawa International Port; and (4) to enhance the development of industry in the Thanlyin-Kyauktan area. The bridge is of the reinforced concrete type. With the rapidly increasing number of private cars and trucks, traffic jams have been a common scene on both sides of the bridge, especially after 2014. The bridges greatly support the movement of people and commodities from Yangon to the other side of the river and vice versa. The emergence of universities and new economic functions are greatly related to the prevalence of the bridge. As the bridge has become older and less resistant to heavy weight, trucks are not allowed to cross the bridge. As a result, the authorities concerned built No (2) bridge.

Yangon-Thanlyin Bridge No (2) connects Thanlyin and Dagon Myothit (Seikkan) townships. The bridge was built over the Bago River. It is a reinforced concrete bridge because container carrier trucks mostly use it to get to Thilawa Port. The main objective of the construction of the bridge is to facilitate the use of heavy container trucks between International Thilawa Port and other parts of the country. The bridge is 4540 feet long and 84 feet wide, including 6 feet on both sides for pedestrians. The 75-ton trucks are allowed to cross the bridge. It was built in 2003 and opened on October 27<sup>th</sup> 2007.

Thanlyin-Yangon Bridge No. (3) is now being built and has not been completed yet. It will join Thanlyin and Thakaytha townships by crossing the Bago river. It is located 125 metres to the north of Bridge No (1). The construction work began on February 13, 2019 and it is targeted to be completed in 2022. The approach road from Thakaytha is being constructed by Tokyo Construction Co; Ltd. The bridge will have a length of 3,500 metres, including 1,224 metres of approach roads, 300 metres from the thakaytha side and 404 metres from the Thanlyin side.

It is a four-lane road over the over and two-lane along the section of flyover. After completion, transportation between Yangon and the Thilawa Special Economic Zone will be smooth and fast and more foreign investment is expected in the Thilawa SEZ. More foreign investment can generate more jobs for the local inhabitants, which will lead to further urban growth in Thanlyin.

### Development of Infrastructure

Transportation is an important part of urban development and urban structure change. With the opening of bridges, the related infrastructure was established. In Particular, universities emerged (Figure 6).

On May 6, 1997, East Yangon University as a Thanlyin college was opened and it was upgraded to East Yangon University on February 22, 2000. It is located in Phayargone Village Tract in Thanlyin Township of the South Yangon District. Residential, shops, miscellaneous shops, and foostalls have emerged around the university. The number of population and economic functions have increased, and transportation has improved with the increasing number of students.

Government Technological College (GTC), formerly called the Government Technological Institute (GTI), was opened in March, 1993, and it was upgraded to Thanlyin Technological University (TTU), offering a diploma in Betch degree. Myanmar Maritime University was opened on March 29<sup>th</sup>, 2004 to international standards. It is located between Phayargone Village Tract and the Thilawa Special Economic Zone.

Co-operative University is located in Nyaungthonepin village to the east of Kyaikkhau Pagoda road and to the west of East Yangon University. The Cooperative Training School was first opened in Mayangone Township, and then it was shifted to Thanlyin Town. In 1994, it was upgraded to Yangon Cooperative Regional College, and it became Yangon Cooperative Degree College in November 1996 (Figure 6).



Figure 6: Location of four Universities

Source: General Administrative Department, Thanlyin Township

### Development of Infrastructure and Population

Population and the development of infrastructure are directly related. Before the construction of bridges, people used only waterways for their commercial activities and for their work. After the opening of bridges, transportation is accessible. People can go there anytime, and they can use various modes of transport. According to the ease of transport, people move from different places to Thanlyin. That is why the population has increased significantly. With the development of infrastructure and commercial activities, population were unevenly distributed (Table 2).

The population distribution is related to the location, relief, accessibility and economic activities. In 1999, the population of Thanlyin Town was 54,670 people with a total area of 15.52 square kilometres. Among the wards of the town, Myohaung (East) had the largest population with 7,828 people and the least in Myothit (West) ward with 336 people (Figure 7).

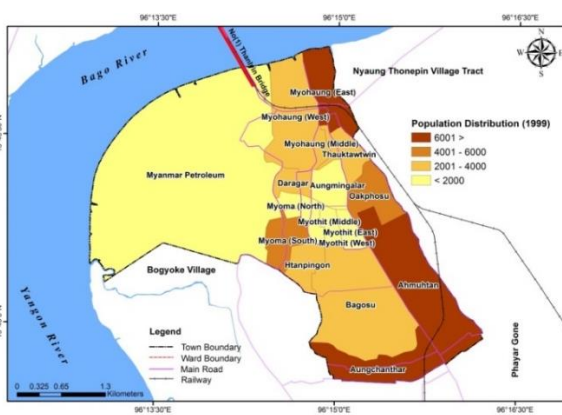


Figure 7: Population Distribution in Thanlyin (1999)  
Source: Based on Table (2)

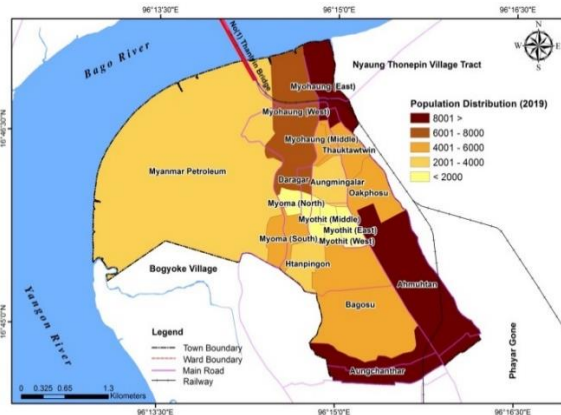


Figure 8: Population Distribution in Thanlyin (2019)  
Source: Based on Table (2)

The total population of Thanlyin Town in 2019 was 89131 people. In the urban area, Myohaung (East) ward had the largest number with 13,656 people, and the ward with least number of people was Myothit (West) with 577 people. The greater number of people in Myohaung(East) ward was on account of to Yangon-Thanlyin Bridge (1), as well as to Yangon City, and also being a place where the town originated. The small number of people in Myothit (West) ward was due to its being occupied with a number of economic activities (Figure 8).

In 1999, the population density of Thanlyin Town was 3,522 people per square kilometer. The density was the highest in Myohaung (East) ward with 26093 persons per square kilometer and the lowest in Yenan ward with 509 people per square kilometer (Figure 9).

In 2019, the population density of Thanlyin Town increased to 5742 people per square kilometer. Myohaung (East) ward was the highest in population density with 45,520 persons per square kilometer and the lowest in Myanmar Yenan Ward with 509 persons per square kilometer. The high population density in Myohaung (East) ward was due to its location close to Thanlyin Bridge (1). The low population density in Myoma Yenan Ward was due to the use of much of its land for the petroleum refining plant and storage tanks. Only a small area of the ward is occupied by service personnel families related to petroleum refining work (Figure 10).



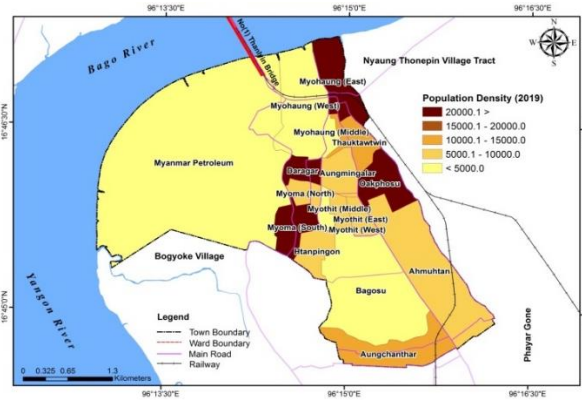
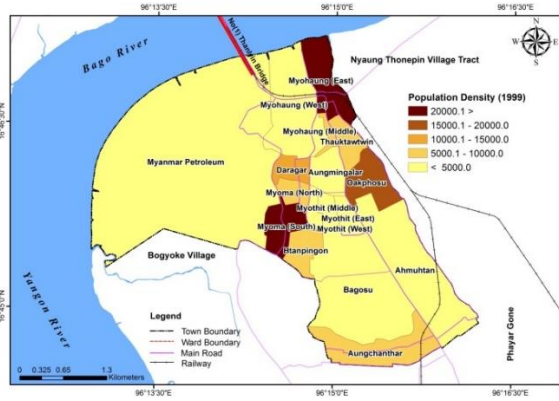


Figure 9: Population Density in Thanlyin Town (1999)  
Source: Based on Table (2)

Figure 10: Population Density in Thanlyin Town (2019)  
Source: Based on Table (2)

Table 2: Population Distribution and density of Thanlyin Town (1999-2019)

No	Ward	Area (sq.km)	population		Population density	
			1999	2019	1999	2019
1	Myothit (East)	0.22	924	1778	4200	8081
2	Myothit (Central)	0.1	419	875	4190	8750
3	Myothit (West)	0.14	336	577	2400	4121
4	Myohaung(East)	0.3	7828	13656	26093	45520
5	Myohaung(Central)	1.71	2869	4092	1677	2392
6	Myohaung(West)	1.44	2522	6083	1751	4224
7	Myoma(South)	0.2	4036	5244	20180	26220
8	Myoma(North)	0.14	896	1289	6400	9207
9	Myanmar Petroleum(Yenan)	4.82	1962	2457	407	509
10	Daharkar	0.3	3778	6705	12593	22350
11	Aungmingalar	0.3	1237	2310	4123	7700
12	Thauktawtwin	0.5	3679	5458	7358	10916
13	Okkaphosu	0.22	4162	5659	18918	25722
14	Ahmuhtan	1.8	6944	12613	3857	7007
15	Htanpingon	0.4	2732	3314	6830	8285
16	Bagosu	1.62	3974	5310	2453	3277
17	Aungchanthar	1.12	6372	11711	5689	10456
	<b>Total</b>	<b>15.52</b>	<b>54670</b>	<b>89131</b>	<b>3522</b>	<b>5742</b>

Immigration and Manpower Department Thanlyin Township, 2019

## Types of Commercial Activities

Commercial activities are based on transportation accessibility and the population. They consist of markets, wholesale and retail shops, food and beverages, building materials and other goods.

Permanent markets are located in the Kannar Bazar, central (Myoma) and Aungchanthar markets. Myohaung (Middle), Myohaung (West), Thauktawtwin, Myoma (North), Aungchanthar, and Ahmuhtan are temporary markets that are kept under the municipality. In 2019, Myoma Market had 1,165 shops. There are 309 impermanent vendor shops (Table 3, Plate 1).

Retail and wholesale activities in this business area are especially associated with a mixed functional character and dwellings. The total number of retail shops was 101 in 2019. On the Bogyyoke Nay Win road in particular, most commercial activities take place, especially a greater number of wholesale and retail shop retail shops in Ahmuhtan, Aungchanthar, and Htanpingone wards. It is located in the vicinity of the Myoma market.

Restaurants, food shops, food stalls, tea shops, and cold drinks are concentrated in the inner town area. The shops are mostly concentrated along Bawga Street in Ahmuhtan Ward. The street is close to Aungchanthar Market and offices. There are a number of food shops around the market. Generally, betel-quid shops and tea-shops are greater in number. The Bayintnaung Road in Aungchanthar Ward has the second greatest number of food shops.

Every ward has one or more restaurants, somehow indicating the economic development of Thanlyin Town. Tea shops are found not only along the main roadsides but also within the wards. The rapid increase in the number of tea shops is due to the availability of other light foods in addition to tea. The number of betel-quid selling shops has been increasing in response to the greater number of betel-quid chewers. Some tea shops sell traditional foods, including rice noodle, mixed-salad, Shan noodle, and Rakhine rice noodle. Cold drink shops are found beside the main roads, inside the wards and in festive places.

With the urban population growth, the number of restaurants and food shops are increasing more and more, concentrated on the main roads, particularly in the vicinity of markets and public buildings.

Building Materials are any material that are used for construction purposes. As more and more people decided to repair the old house or build a new one, the demand for construction materials has been rising. There are 39 building materials shops, of which some are large in size and perform both as wholesalers and retailers. The materials are purchased not only by the urban residents but also by the rural ones. These types of retail shops take place mostly in Myohaung (Central) Ward, as the ward is close to the town market.

Nowadays, most of the old wooden houses have been removed and replaced with new brick or semi-brick houses. The relatively larger shops with diverse material are found in Aungchanthar, Bagosu, and Myohaung (Central) Wards. Most of the shops have only cement, brick, sand and pebbles. Some construction groups in Thilawa purchase building materials from Aungchanthar Ward due to low cost and easy transportation of bulky materials.

Other shops distributing textile, household goods, medicine, electrical goods, shoes and slipper, and lottery shops are included. These are 43 such other shops in Thanlyin Town distributing goods mostly in Aungchanthar Ward, 9, Myoma (N) Ward is 10, Myohaung (C) Ward is 10 and Ahmuhtan Ward is 12, and the gas and diesel shops included in other types are found only near Aungchanthar and Myohaung (east), selling different types of gas from these shops.



Plate 1. Concentration of commercial activities in Thanlyin Town

Source: Field Survey, 2019

Table (3) Types of Commercial activities in Thanlyin Town (2019)

Wards	Markets	Wholesale and Retail shop	Food and Beverage	Building Material	Others goods	Total
Myohaung (East)		8	21	1	2	32
Myohaung (Central)	1	5	23	8	7	44
Myohaung (West)	1	5	19	1	2	28
(Petroleum)Yaenan		1	2	0	0	3
Daragar		9	10	2	0	21
Thauktaw twin	1	7	15	1	0	24
Oak Phosu		1	6	3	1	11
Aung Mingalar		1	7	0	0	8
Myoma (North)	1	1	15	1	9	27
Myoma (South)		6	9	2	0	17
Myothit (West)		1	4	0	1	6
Myothit (Central)		6	20	4	3	33
Myothit (East)		2	15	0	0	17
HtanpinGon		10	25	4	2	41
Bagosu		8	15	2	1	26
Aungchanthar	2	20	60	7	9	98
Ahmuhtan	2	10	75	3	6	96
Total	<b>8</b>	<b>101</b>	341	<b>39</b>	<b>43</b>	<b>532</b>

Sources: field survey (2019)

### Changes of Transportation and Commercial Functions

In 1999, with the changes in modes of transport and population increase, commercial activities and commercial land use were changed in Thanlyin which is mainly composed of market places. There are three permanent markets in Thanlyin, namely, Thanlyin Myoma Market in Myoma (north) ward, Kannar(Strand) Bazaar and Aungchanthar Market in Aungchanthar ward. Thanlyin Myoma market is located at the central point of the town within Myoma North ward. It was constructed in 1918. Kannar (Strand Bazaar) is located near the jetty in Myohaung central ward and it was constructed in 1965. In 1999, commercial activities were found in 144

retail shops along the main road: Kyaik khauk pagoda, Bogyoke Naywin road, Lanmadaw and Theinkyaung road and around the Myoma Market. In 1999, commercial activities include 62 tea shops around the Myoma market and 16 Cold drink shops and 35 foods, charcoal and firewood 14 shops, furniture 17 shops are found along the main roads and accessible roads.

In 2019, markets are an important role in the urban economy. Myoma market is the chief type of commercial landuse. Myoma market in Myoma (north) is a permanent market. The main roads like Bogyoke Nay Win Lanmadaw and Thein Kyaung have 704 shops that are utilized as commercial activities. There are 154 wholesale and retail shops, 476 food and beverage shops, 39 building material shops and 43 other shops.

During the period of 1999 to 2019, an increase in the commercial activities are found along the main road and at the end of the boundary area. Newly Orange Supermarket (1) and (2) are found. Orange Supermarket (1) was opened in 2014 near the Myoma market and Orange Supermarket (2) near Ahmuhtan ward in 2018. The improvement in economic trend is seen both in the urban and rural areas. The growth within the town area is characterized by Star City Housing Project and a number of commercial activities, whereas Thilawa Port, Thilawa Special Economic Zone and universities are prominent growth identities outside the town (Field survey, 2019).

The urban structure change is characterized by Star City Housing Project and a number of commercial activities, whereas Thilawa Port, Thilawa Special Economic Zone and universities are prominent growth identities outside the town (Field survey, 2019).

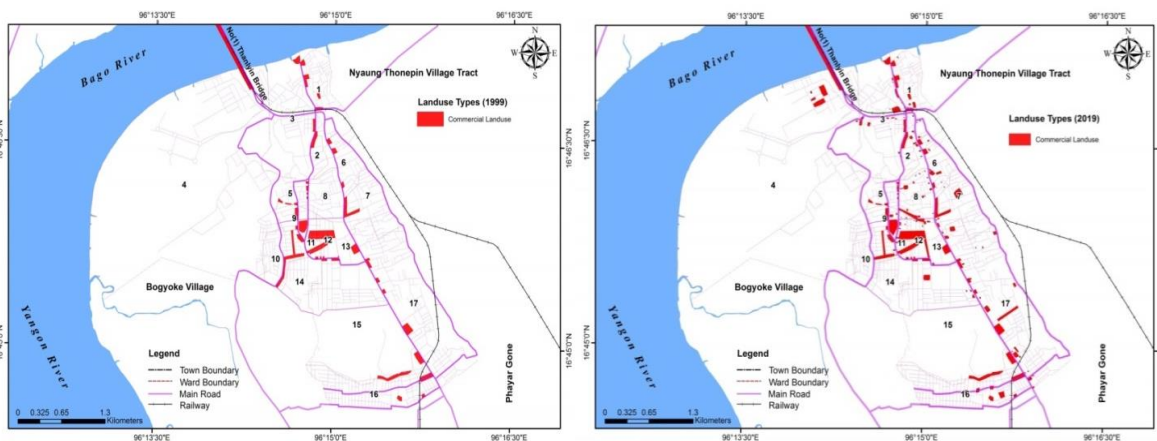


Figure 11 Distribution of Commercial Pattern (1999) Source: Survey, 2019  
Figure 12 Distribution of Commercial Pattern (2019) Source: Survey, 2019

### Analysis of Local People's perception on Construction of Bridges

Until the last decade of 19<sup>th</sup> century and the first two decades of 20<sup>th</sup> century, local people depended on only waterway and they faced transport problems. People could go there in time because there was only waterway and difficult transportation. After the opening of bridges, people have chance to go to Yangon by many bus lines and accessible transport. People can use

Currently they can use different modes of transport for their goods and for their work (Table 4).

Table 4. Local People Perception on construction of Bridges

<b>Item</b>	<b>Strength</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threat</b>
Natural Conditions	- large space, high water quality, silent, good environment	- a little far from Yangon City - time consuming for regular employee	- good fertile soil, good quality water, abounded natural vegetable, suitable for vegetables and fruits	- some time people afraid of living near river for flooding and erosion
Demographic Conditions		- moving from others places, population crowded, land lost problem, highest land value and prices		- native people moving to another places and strangers coming to urban area, - native people disappearance
Commercial Sectors	-many people getting changes to do economic activities	-people from jetty lost their economic activities	-many local people get varieties of job	-economic functions of native people may disappear
Transportation	-reduce time, more accessible transport, quick commodity flow for perishable goods	-traffic junction on the bridge by private cars due to population growth -disappear waterway	-can travel any time	-many negative impacts within the rivers : reduce velocity, may be filling the load
Urban Structure	-emerge new ward, new housing style, upgrading living style in urban area	-highest land price, reduce land ownership by new comer, unsafe by stranger people, very complex land established system		- strangers emerge, - inherit land may be lost - More complex characters
Services	-Universities -many private education centre, clinic, hotel, motel, banking,	-non-adult people: students become bad character due to open hotel and motel	-many local people get varieties of job	

Source: Interview, 2019



## Conclusion

After the opening of bridges, increasing the population and economic activities made urban structure dramatically change. It has changed through time. The number of wards has increased from 4 wards to 17 wards in over 80 years. The increased number of wards is highly related to the institutional factors.

The most dominant factor is the construction of bridges in Thanlyin. According to the increasing of wards, the urban structure is changed significantly.

Before 1990, the commercials are located in two places: the town centre and the northern most part having Thidar Jetty. After 1990, the town had a little dispersion to the southern part. The town area was extended towards the south and thus it increased from 9.52 square kilometres to 15.52 square kilometres. The newly extended ward is called Aungchanthar. The population of the town was 89,904 and it increased to 113,300 in 1983, and further increased to 149,820 in 1993. The population growth was related to the opening of Yangon-Thanlyin No (1) bridge. The population of the town in 2013 was 211,858 and it increased to 275,597 in 2019.

The population distribution pattern in 2019 was the same as that of 1999. In both years Myohaung (east) ward had the largest number of population and it was the lowest in Myohaung (west) in both years. Other wards are not the same in population distribution pattern. The greater number of population in Myohaung (east) ward was due to being close to Yangon-Thanlyin No (1) bridge, while much of the land in Myohaung (west) was used for commercial functions.

Commercial functions are characterized by markets, wholesale and retail shops, restaurants, foodstalls and construction material shops. There were 532 shops in Thanlyin Town in 2018. The number of shops increased with the increasing population.

The population density is high in Myohaung (east) ward because of accessible transport whereas Myohaung (east) ward and Aungchanthar ward are located on the main Kyuakkhauk Pagoda road. Because of the locational advantages, Aungchanthar ward has Orange Supermarket, apparel shops and electronic appliance shops, and cinema hall.

## Suggestions

Requirements (systematically control on urban structure change, upgrading)

- Should sustain their own land, especially their inheritants
- Should check and control new comers (interviewed)
- Should do systematic structure on some wards
- Should solve problem of traffic congestion on the bridge
- Should restructure urban land use patterns

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စောပေါလု (၁၉၈၇) သန်လျင်မြို့နယ်၏ ဒေသန္တရပထဝီဝင်၊ ရန်ကုန်တက္ကသိုလ်ပထဝီဝင်သုတေသနကျမ်း

