

A GEOGRAPHICAL ASSESSMENT OF ECONOMIC ACTIVITIES IN THANLYIN TOWNSHIP

Yupar Nyunt¹

Abstract

This research paper is entitled “A Geographical Assessment of Economic Activities in Thanlyin Township”, Thanlyin Township is one of the townships included in the Southern District parts of the Yangon region. Although, the study area is including in Yangon region, it composes rural area and urban area. According to Urbanization, rural population is 189820 (70%) persons, urban population is 83223 (30%) persons and total population is 273043 persons of the study area. The area of township is 92149 acres (372.9 sq. kilometers) and it is made up of 28 village tracts and 17 wards. The shape of township is compact, a titled ‘J’ shape. The local economic development is concerned directly on affluence and advance of economic activities of this region. So, this paper is mainly focused on economic activities of Thanlyin Township from a geographical point of view. The study are of economic activities including many kinds of section is based on physical situation and condition of population distribution. Investigation of field data, the kind of economic activities identified four types of activities by each detail. Finally, using field survey and application of GIS, this paper focus and assessment on the various economic activities in Thanlyin Township.

Keywords: Economic Activities, Physical Situation

1. INTRODUCTION

This thesis studied “A Geographical Assessment of Economic Activites in Thanlyin Township”. Thanlyin Township possesses better economic and social situation, health facilities, transportation and communication than other townships in Southern District in Yangon. The economic activities of Thanlyin Township are grouped by four main types. Most of the people in Thanlyin Township are engaged in agriculture. Primary raw materials are directly obtained from within the area, while so some of the secondary economic activities can easily be expanded. Tertiary sector provided to the urban dwellers as well as commercial and local market development. Quaternary sector considers three parts; education, services and public transportation. Economic activities might provide some insights on the understanding of distribution for many dwellers of study area. Traditionally, agriculture has become the dominant economic activity of Thanlyin Township. After the State Government has practiced open market oriented economic system, rapid changes occurred in various economic activities. As the regional development plans were

¹ Assistant Lecturer, Department of Economic Geography, Co-operative University, Thanlyin

implemented as a state policy, infrastructure development was effectively carried out in Thanlyin Township. The local population can hold new job opportunities and the income of the rural population increased. The booming economic condition of the people reflected in every area of the township and urban-rural development can be clearly seen in Thanlyin Township.

1.1 Research Questions

- What the local products provide the local market in Thanlyin Township?
- Where are the commercial and tertiary activities concentrated in Thanlyin Township?
- How can economic activities provide local area to promote socio-economic, with the study of economic activities in Thanlyin Township?

1.2 Aim and Objectives

The main of this paper is to study geographical point of view of the condition of economic activities in Thanlyin Townhsip. The objectives of this paper are –

- (1) to express the relationship between physical phenomena and demographic factor.
- (2) to examine the condition of economic activities of the study area.
- (3) to assessment the development of economic activities in current situation of study area.

1.3 Literature Review

There are relatively few articles included in this paper, concerned with the concept of the economic activities. The term economic activities is sometimes used to refer to the internal structure of cities but more correctly refers to number (or kinds) of cities in a defined territory (Ronald Hill, 2002).

The articles from the early 1990s analyzed to the problems of the socialist urban structure and presented for visions of post-socialist era. It focused on the relatively complex intra-urban geography, such as physical, functional, housing or social spatial structure of cities and their near hinterland, including process, development, planning and management aspects.

The arrangement of functional areas in cities was mostly rigorous and that particularly mono-functional areas were planned. Industrial areas had a greater range. Smaller areas were designated for services for residents. Since the mid-1990s the functional-spatial arrangement of cities (economic sectors) was relatively quickly transformed. This is due to the processes of commercialization, deindustrialization, auto mobilization and construction of super and

hypermarkets, followed by revitalization of industrial, railway within cities. (Kubes, p-23, 2013)

1.4 Data Collection and Methodology

Primary data is based on commercial, tertiary activities and governmental offices, those are derived from the field observation between the year 2014 and 2019. Based on these statistics (location of shops/ government department and offices) are conducted to get information and analysis for those activities and arrangement of public buildings (public and institutions). It is concerned with the degree of spatial concentration of economic activities how they are concentrated near a local business area of township or on the main road.

Secondary data is obtained from the Township Administrative Office, Thanlyin Town, it consists of ward areas, population data, town characteristics as well as from the concerned department and libraries. Available data and facts are calculated, tabulated and employed for the application of GIS. To show spatial distribution and concentration of particular economic activities, mean center of are calculated by Arc GIS 10.1. Finally, mapping and analytical study are illustrated for this study.

2. GEOGRAPHICAL BACKGROUND

2.1 Location, Size, Shape and Boundary

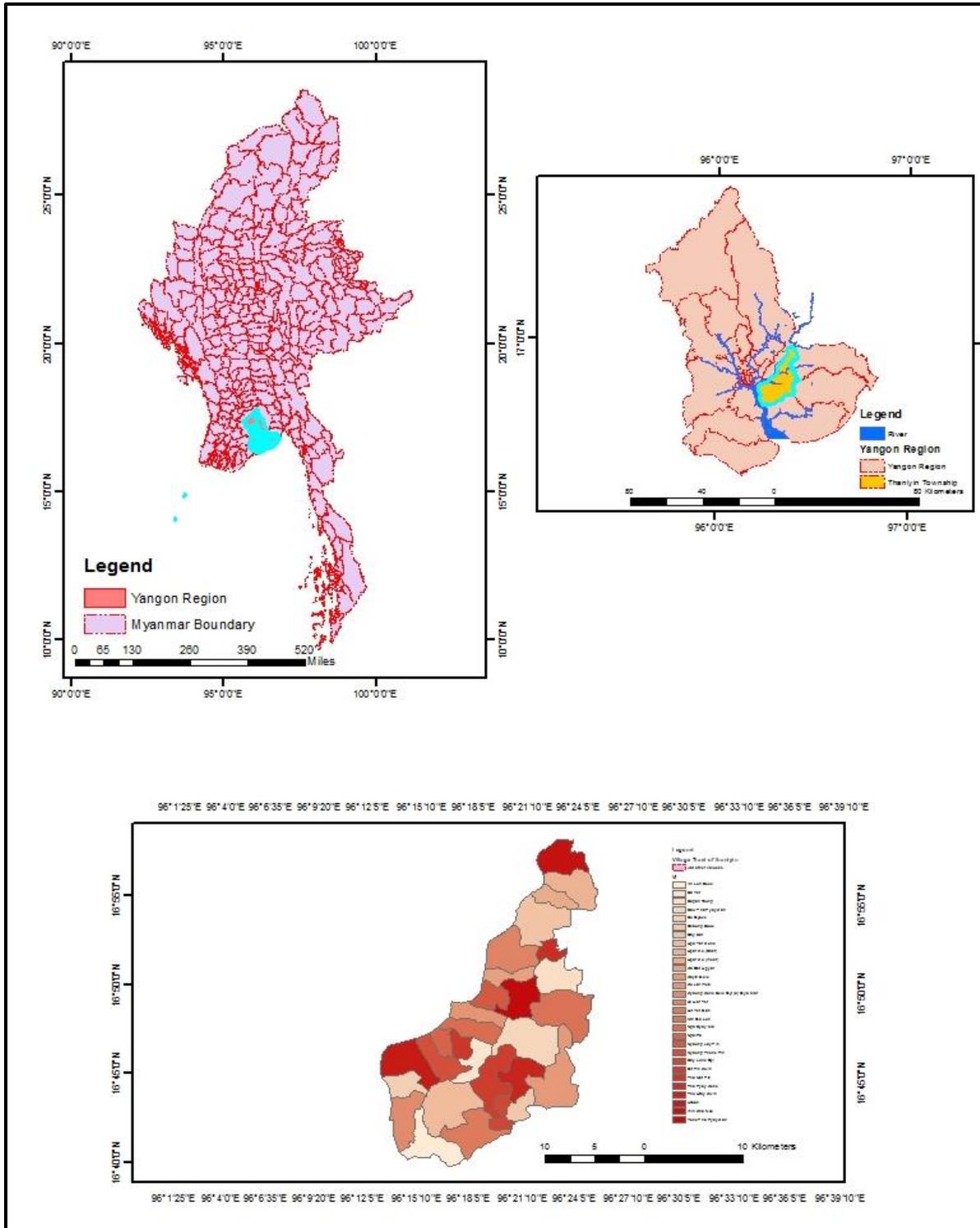
Thanlyin Township is included in the Southern District in Yangon Region. It lies between north latitudes 16° 40' and 16° 59' and east longitudes 96° 13' and 96° 25'.

Thanlyin Township has a total area of 372.9 square kilometer or 143.56 square miles (92,147 acres), and it comprises about 3.8 percent of Yangon Region. This township is 38.6 kilometers (24 miles) long north to south, and 20.92 kilometers (13 miles) wide from east to west. The total length of land boundaries is 65.13 kilometers (40.5 miles). The southwestern part, the boundaries were also marked from the function of Bago and Yangon River to the frontier of Kyauktan Township. The total length of water boundary is 50.66 kilometers (31.5 miles). It is surrounded on the north by Bago River, on the east by Thonegwa Township and Khayan Township, on the south by Kyauktan Township and on the west by Yangon River. It is located on the left bank of Bago River and closer to the Yangon City.

The shape of Thanlyin Township is elongated shape with a longer axis from north east to southeast and a shorter axis from southeast to northwest. This region has a titled of “J”

shape. Thanlyin Township is comprised into two parts, i.e, urban area and rural area. Urban area is formed by (17) wards and rural area is made up of (28) village tracts and 57 villages.

Figure(1.1) Location of Study Area



Source: Based from MIMU (Shape File)

2.2 Total Population and Population Growth

In this study area, population data based on three-years period in Thanlyin Township. The first year is started on 2014 census population data. According to 2014 census data, the total population of Thanlyin Township was 268,063 persons composing 130,537 males and 137,526 females. The population included to 269,489 persons, comprising 131,842 males and 137,656 females in 2016 population record. In 2019, the total population had 273,043 persons is dividing 131,571 males and 141,472 females. These data are shown in table (1.1)

Therefore, the annual growth rate is one percent normal increased in yearly. The population was an increased partly due to natural increase and small immigration. The higher population growth is owing to be more favourable transportation routes and Project of Myanmar International Terminal Thilawa (MITT).

Table (2.1) Total population and Growth Rate of Thanlyin Township (2014-2019)

| Sr. No. | Year | Population (person) | | | Increase of Population | Growth Rate (%) |
|---------|------|---------------------|---------|---------|------------------------|-----------------|
| | | Male | Female | Total | | |
| 1 | 2014 | 130,537 | 137,526 | 268,063 | - | - |
| 2 | 2016 | 131,842 | 137,656 | 269,498 | +1435 | 1 |
| 3 | 2019 | 131,571 | 141,472 | 273,043 | +3545 | 1 |

Source: General Administration Department, Thanlyin Township

2.3 Population Density and Distribution

Based on 2019 population data, the general patterns of population distribution and density of the study area are analyzed. Thanlyin Township is divided into two demographic portions such as urban, rural area and the spatial distribution patterns of population are firstly analyzed. And then population density is compared for the general assumption is made for potential economic development of the study area. This study area, it has totally 17 wards and 28 village tracts. This township had with a total population of 273,043 persons in which urban population is included 83,229 persons and rural population is comprised 189,820 persons. About one third of the township's total population lives in urban center. It is mostly land used for public and government department and industrial landuse. Rural population is unevenly distributed.

Urban population density is highest in Myohaung (east) with total population at 16,328 residents live on the 0.10 sq. mile of land area. The second and third highest population density are Daraga and Myoma (South) in urban area. Lowest population density is found in Yenana with 3,442 persons and population density with 1,721 persons per sq. mile due to its location. It is located at the southwestern part of the township. Densely populated villages are Phayargon, Bogyoke and Letyatsan, because these villages have favourable for agricultural opportunity. Most of them are located on the southwestern end of the township. The sparsely populated area is found in Winkani village tract because it has poor soil, and it has availability to flood and poor accessibility.

Table (2.2) Population Density of Thanlyin Township

| Sr. No. | Types | Area (sq. mile) | Total Population (persons) | Population Density (person/ per sq. ml) |
|---------|-------|-----------------|----------------------------|---|
| 1 | Rural | 137.62 | 189,820 | 1,379 |
| 2 | Urban | 5.94 | 83,223 | 14,011 |
| | Total | 143.56 | 273,043 | 15,390 |

Source: General Administration Department, Thanlyin Township

3. CLASSIFICATION OF ECONOMIC ACTIVITIES IN THANLYIN TOWNSHIP

3.1 Classification of Primary Economic Activities

Primary economic activities are concerned with the extraction of raw material from nature. These activities are the beginnings in further development of other economic activities. (R. Boice, 1978)

Primary economic activities include agriculture, livestock, fishery, forestry and mineral resources. If the primary economic activities of Thanlyin Township are foundout, the essential fields to study are agriculture, livestock and fishery, because there is no application in forestry and mining.

3.1.1 Types of Land and Its Uses

According to the data in 2018-2019, the total landuse is 92,176 acres. Among the total landuse in Thanlyin, the urban landuse is (6,275) acres, town landuse (709) acres, industrial landuse (5,566) acres. The rural landuse is totally (66,375) acres. In rural landuse (60,506), acres are used for farm land, (1,397) acres are used for pasture, (1,232) acres are used for village land, (2,824) acres are used for garden land, (416) acres are used for nipa palm trees. As the other usages, (8,986) acres for rivers, streams and underground water, (2,708) acres for dams, (2,736) acres for lakes and ponds, (362) acres for railway, (1,624) acres for motorway, (4,642) acres for religious building and graveyard.

Table (3.1) Urban Landuse in Thanlyin Township

| Sr. No. | Types | Acres | Percentage |
|---------|---------------------------|-------|------------|
| 1 | Urban Landuse (City Land) | 7,09 | 11% |
| 2 | Industry Landuse | 5,566 | 89% |
| | Total | 6,275 | 100% |

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (3.2) Rural Landuse in Thanlyin Township

| Sr. No. | Types | Acres | Percentage |
|---------|--------------------------|--------|------------|
| 1 | Village Landuse | 1,232 | 2% |
| 2 | Farm Land | 60,506 | 91% |
| 3 | Garden Land | 2,824 | 4% |
| 4 | Land for Nipa Palm Trees | 416 | 1% |
| 5 | Land for Pasture | 1,397 | 2% |
| | Total | 66,375 | 100% |

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (3.3) Other Landuse in Thanlyin Township

| Sr.No. | Types | Acres | Percentage |
|--------|---------------------------------------|--------|------------|
| 1 | Fallow Land | 475 | 2% |
| 2 | Unuse Land | 686 | 4% |
| 3 | Land for Dams and Irrigations | 2,708 | 14% |
| 4 | Streams, Rivers and Underground Water | 8,957 | 46% |
| 5 | Ponds and Lakes | 2736 | 0% |
| 6 | Railway Land | 362 | 2% |
| 7 | Motor Land | 1,624 | 8% |
| 8 | Religious Land and Graveyard | 4,642 | 24% |
| | Total | 19,497 | 100% |

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (3.4) Total Landuse in Thanlyin Township

| Sr.No. | Land Types | Acres | Percentage |
|--------|---------------|--------|------------|
| 1 | Urban Landuse | 6,275 | 7% |
| 2 | Rural Landuse | 66,375 | 72% |
| 3 | Other Landuse | 19,497 | 21% |
| | Total | 92,147 | 100% |

Source: Administration of Farmland and Statistics Department in Thanlyin Township

The main business in Thanlyin Township is agriculture. The rural area is 95.8% of local area, because rural area has more farmland and paddy cultivation is the traditional business of this area.

The main agricultural land is involved farmland, garden land and land for Nipa Palm Trees. The farmland is (91%) of the agricultural land and it is mostly found. The second mostly used type of land is garden land and the land for Nipa Palm Trees is only a little.

3.1.2 Cultivated Crops

Thanlyin Township has heavy rainfall and moderate weather. The agricultural land is two-third of the whole township area. The type of land is prosperous and it is conducive to plant different types of vegetation. Cultivating paddy is the main food of the nation and the country favours in cultivating. Cultivated crops have been much more efforted to be fruitful every year.

(i) Paddy

Paddy is much more important crops than others. It is cultivated for a short period in “Le” Land. Paddy is more easily cultivated in warm and moist weather. It is planted not only monsoon paddy but also summer paddy with the special farmland projects by irrigated cultivation in summer seasons.

The total paddy field area is 60,506 acres and fallow land is 475 acres. Formers cultivated the paddy seasonally. There are 28 village tracts and 57 villages. Out of 28 village tracts, the total paddy field area is 60,506 acres, and the net sown area for paddy in the rainy season is 59,760 acres. Yield per acres (baskets) of the paddy in the rainy season is 73 and production of paddy is 4,365,400 baskets. The short period (Thetngè) monsoon paddy in the rainy season can be cultivated at the last week of May and first week of June. They are reaped at the middle of September. Short period (Thetngè) monsoon paddy involves Manawthukha, Elmahta, Nga Sein and Sticky Rice. Long-period (Thetgyi) monsoon paddy includes Pawsannhmway and Ngakywel. Those types are started to be cultivated in the last week of May and first week of June. They are all reaped at the end of October.

The net sown area is 2000 acres for summer paddy in Thanlyin Township, the yield per acre (baskets) is 65 and production of paddy is 132,470 baskets. The monsoon paddy is planted in almost 28 village tracts, and the summer paddy is planted only in 13 villages. The 13 villages under the dry season area irrigated in the summer, water is also obtained by pumping water from the closed Buch Creek and Khayan Creek. The village tracts where summer paddy is cultivated include Yonethabyegan, Bauhthabyegan, Thahtay-kwin, Sitpin Kwin, Bayet, Ngapyayma, Na/Pa, Thanutpin, Nyaungthonepin, Phayargon, Nyaunglaypin, Kalawe, Saylongeyi. The cultivated monsoon and summer paddy, the different type of acres and their production are presented in the following tables.

Table (3.5) Monsoon Rice Cultivated area in the village tracts of Thanlyin Township

| Sr. No. | Village Tract | Sowned Area (acres) | Matured Area (acres) | Yield per Acre (Baskets) | Production in Baskets |
|----------------|----------------------|----------------------------|-----------------------------|---------------------------------|------------------------------|
| 1 | Winkani | 3,245 | 3,245 | 66 | 214,170 |
| 2 | Phakuu (East) | 3,123 | 3,123 | 67 | 209,241 |
| 3 | Phakuu (West) | 908 | 911 | 69 | 62,859 |
| 4 | Dazat | 3,502 | 3,502 | 69 | 241,638 |
| 5 | Yonethabyegan | 2,611 | 2,615 | 68 | 177,820 |
| 6 | Mingalon | 5,060 | 5,060 | 69 | 349,140 |
| 7 | Bauhthabyegan | 4,595 | 4,595 | 68 | 312,460 |
| 8 | Kayinseik | 5,655 | 5,655 | 68 | 384,540 |
| 9 | Thabyegon | 1,017 | 1,017 | 67 | 68,139 |
| 10 | Pagantaung | 2,506 | 2,506 | 70 | 175,420 |
| 11 | Alwunsoke | 977 | 977 | 66 | 64,482 |
| 12 | Kyaunggone-seikgyi | 564 | 568 | 55 | 31,240 |
| 13 | Latyetsan | 1,756 | 1,760 | 69 | 121,440 |
| 14 | Thatay-kwin | 1,907 | 1,907 | 69 | 131,583 |
| 15 | Sitpin-kwin | 3,484 | 3,484 | 67 | 233,428 |
| 16 | Bayet | 1,783 | 1,783 | 67 | 119,461 |
| 17 | Ngapyayma | 2,300 | 2,300 | 67 | 154,100 |
| 18 | Ngapa | 871 | 876 | 65 | 56,940 |
| 19 | Thanutpin | 958 | 958 | 68 | 65,144 |
| 20 | Bogyoke | 805 | 805 | 53 | 42,665 |
| 21 | Nyaungthonepin | 1,577 | 1,577 | 66 | 104,082 |
| 22 | Phayagon | 1,255 | 1,265 | 62 | 78,430 |
| 23 | Laharyet | 1,434 | 1,434 | 65 | 93,210 |
| 24 | Kadatphyar | 2,517 | 2,517 | 67 | 168,639 |
| 25 | Nyaunglaypin | 1,191 | 1,201 | 60 | 72,060 |
| 26 | Kalawe | 1,338 | 1,338 | 63 | 84,294 |
| 27 | Saylonegyi | 1,088 | 1,088 | 58 | 63,104 |
| 28 | Chaungsauk | 1,733 | 1,733 | 66 | 114,378 |
| | Total | 59,760 | 59,800 | 73 | 4,365,400 |

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (3.6) Summer Rice Cultivated area in the village tracts of Thanlyin Township

| Sr. No. | Village Tract | Sown Area (acres) | Matured Area (acres) | Yield per Acre (Baskets) | Production in Baskets |
|---------|--------------------|-------------------|----------------------|--------------------------|-----------------------|
| 1 | Winkani | - | - | - | - |
| 2 | Phakuu (East) | - | - | - | - |
| 3 | Phakuu (West) | - | - | - | - |
| 4 | Dazat | - | - | - | - |
| 5 | Yonethabyegan | 29 | 29 | 19 | 551 |
| 6 | Mingalon | - | - | - | - |
| 7 | Bauhthabyegan | 162 | 164 | 49 | 8,036 |
| 8 | Kayinseik | - | - | - | - |
| 9 | Thabyegon | - | - | - | - |
| 10 | Pagantaung | - | - | - | - |
| 11 | Alwunsoke | - | - | - | - |
| 12 | Kyaunggone-seikgyi | - | - | - | - |
| 13 | Latyetsan | - | - | - | - |
| 14 | Thatay-kwin | 58 | 66 | 33 | 2,178 |
| 15 | Sitpin-kwin | 302 | 308 | 69 | 21,252 |
| 16 | Bayet | 439 | 439 | 74 | 32,486 |
| 17 | Ngapyayma | 281 | 285 | 63 | 17,955 |
| 18 | Ngapa | 96 | 96 | 39 | 3,744 |
| 19 | Thanutpin | 247 | 247 | 56 | 13,832 |
| 20 | Bogyoke | - | - | - | - |
| 21 | Nyaungthonepin | 121 | 121 | 40 | 4,840 |
| 22 | Phayagon | 150 | 152 | 42 | 6,384 |
| 23 | Laharyet | - | - | - | - |
| 24 | Kadatphyar | - | - | - | - |
| 25 | Nyaunglaypin | 74 | 80 | 35 | 2,800 |
| 26 | Kalawe | 26 | 30 | 19 | 570 |
| 27 | Saylonegyi | 15 | 21 | 17 | 357 |
| 28 | Chaungsauk | - | - | - | - |
| | Total | 2,000 | 2,038 | 65 | 132,470 |

Source: Administration of Farmland and Statistics Department in Thanlyin Township

(ii) Pulses and Other Vegetation

Later 2000, different types of beans are the nation's major export. Due to the differentiation of land and weather, the pulses cannot be widely cultivated and they are produced just for local consumption. The net area for planting them is 50 acres. The planted pulses are ground nuts, chickpeas and grams. The net cultivating area of ground nut is 18 acres, yield per acre is 45 and production of crop is 810 baskets. The net cultivating area of gram is 14 acres, yield per acre is 43 and production of crop is

602 baskets. The net sown cultivating area of green gram is 18 acres, yield per acre is 45 and production of crops is 810 baskets.

In Thanlyin Township, monsoon paddy, summer paddy pulses and other vegetation are also planted. The other cultivated vegetation are betel, peppers, bananas, coconuts, palm fruits, other fruits and vegetables. (Shown in table (3.7))

Table (3.7) Major Crop Cultivated area in the village tracts of Thanlyin Township

| Sr. No. | Crops | Sowned Area (acres) | Matured Area (acres) | Yield per Acre (Baskets/Vass) | Production in Baskets/Vass |
|---------|------------------|---------------------|----------------------|-------------------------------|----------------------------|
| 1 | Monsoon Paddy | 59,760 | 59,771 | 73 | 4,363,283 |
| 2 | Summer Paddy | 2,000 | 2,038 | 65 | 132,470 |
| 3 | Groundnut | 18 | 18 | 45 | 810 |
| 4 | Gram | 14 | 14 | 43 | 602 |
| 5 | Green Gram | 43,182 | 43,182 | 65 | 2,806,830 |
| 6 | Plam | 39 | 39 | - | - |
| 7 | Betel | 24 | 20 | 4,200 | 84,000 |
| 8 | Betel nut | 16 | 16 | - | - |
| 9 | Pepper | 30 | 30 | - | - |
| 10 | Banana | 202 | 195 | 692 | 134,940 |
| 11 | Coconut | 430 | 319 | 3,405 | 1,086,195 |
| 12 | Other Vegetables | 396 | 396 | 1,722 | 681,912 |
| 13 | Fruit from lands | 1,052 | 559 | - | - |
| 14 | Dani | 420 | 420 | - | - |

Source: Administration of Farmland and Statistics Department in Thanlyin Township

3.1.3 Livestock Breeding

Livestock breeding is a branch of agricultural sector. Livestock is one of the business in study area but it is only a small business. There is no livestock breeding in 28 village tracts. They can be found only in 10 villages. In urban area, the households keep their own. The animals kept in rural areas are for the support of agriculture and local consumption.

The number of animals is not quiet much compared to the number of the animals in the whole township. Due to the less number of animals, the animal keepers feed them by products of the farm. Sometimes, they feed them ready made animal food. The different types of animals kept in Thanlyin Township mainly include buffaloes, cows, goats, pigs, chicken, and ducks. Milk, meat and eggs produced from them can be consumed locally.

10 villages where animals are kept include Nyaungthonepin, Sitpingwing, Bagantaung, Bauthapyaykan, Thanatpin, Kyaungoneseikkyi, Latyatsan, Pharkuu (west), Kyiekinn and Ohtphoosu. The number of owners of livestock, the number of animals and the meat production area are shown in the following tables.

Table (3.8) Animal Products in Thanlyin Township (2019)

| Sr. No. | Types of Animals | Production of meat (Vass) | Production of milk (Vass) | Production of eggs (egg) |
|---------|-----------------------|---------------------------|---------------------------|--------------------------|
| 1 | Local Cows | 114,000 | - | - |
| | Cows kept for milk | - | 7,662,760 | - |
| 2 | Local Buffalo | 4,042 | - | - |
| | Buffalo kept for milk | - | 914,000 | - |
| 3 | Chicken kept for eggs | - | - | 1,001,873 |
| | Local Chicken | 6,308,560 | - | - |
| 4 | Ducks kept for eggs | - | - | 163,236 |
| | Local Ducks | 106,904 | - | - |
| 5 | Goats | 12,222 | 3,250 | - |
| 6 | Pigs | 491,536 | - | - |
| | Total | 7,037,264 | 8,580,010 | 1,165,109 |

Source: Livestock and Veterinary Department

3.1.4 Fishery

Two different types of fishing in Thanlyin are natural fishing and seasonal fishing. There is no enterprises doing with systematic tank or lake. Seasonal fishing prohibits people from fishing during the designated period: May, June, July. As these months are duration for breeding fishes. If people fish during these months, fishes can be extinct or almost extinct. To prevent this situation, the above rule is enacted. The natural fishing refers to fishing in the lakes, streams, creeks, and rivers. There are altogether 7 villages which earn their living by natural fishing. They are Kalawal, Nyaunglaypin, Daysatt, Pharkuu, East Myohaung, Winnkhani and Ngwethanwinn.

Fishing areas in Thanlyin Township are around Yangon River, Bago River, Khayan Creek, Buch Creek and all the other streams, lakes and creeks. The different types of fishes are Ngazinyaing, K-Katic, Ngarbat, Ngartan, Ngarbyat and various of fishes. There are 7 villages which do the fishing and 816 fishermen. (see Table 3.10)

3.2 Classification of Secondary Economic Activities

Secondary Economic Sector involves the transformation of raw materials into goods. Secondary activity is mainly associated with manufacturing and industry. Examples of secondary sectors are textile, leather industry, ceramic industry, cash crop industry etc. In developing countries, very few people (5% average) work in secondary sectors. In developed countries, moderate number of people (25% average) work in secondary sectors. Secondary activity ultimately leads to industrialization. (Wikipedia)

In Thanlyin Township, the industrial sector is based on agricultural production and other small industrial enterprises. Depending on these industrial enterprises, the main products are produced according to local market. In 1990s, Thanlyin has public industrial business and other small enterprises like paddy mill, oil mill, saw mill, grinding enterprise and gold smiths. However, these businesses are not properly developed. The qualities of the products are also not promoted. Therefore, they cannot enter the local market.

Thanlyin is one of the 45 townships in southern district in Yangon. During 1990s, among 45 townships under the management of Yangon City Development Council, 11 townships are selected for constructing industrial and economic zone (or) industrial area. Thanlyin is also listed as one of 11 townships. By doing this the selected areas are specially chosen for the continuous development of outside and inside of the municipal area.

Table (3.10) Number of Common Fisher Tools, Fishermen and Yield per Fish Types (Vass) in Thanlyin Township (2018-2019)

| Sr. No. | Particular | Total |
|---------|---------------------------------|-----------|
| 1 | Villages | 7 |
| 2 | Authroized Fishing tools number | (102) |
| | (a) Net Crab | 90 |
| | (b) Crab (overall) | 12 |
| 3 | Total Fishermen | 816 |
| | (a) Part Time | 102 |
| | (b) Full Time | 102 |
| | (c) Family | 612 |
| 4 | Yield per Fish Types (Vass) | (122,400) |
| | (a) Ngarzinyaing | 42,840 |
| | (b) K-Katic | 18,360 |
| | (c) Ngarbat | 12,240 |
| | (d) Ngartan | 12,240 |
| | (e) Ngarbyat | 12,240 |
| | (f) Various of fishes | 24,480 |

Source: Department of Fisheries, Thanlyin township

As the good result, regional government has encouraged the industrial and economic development as the change of economic policy after 1993. Based on the survey data in 2019, Thanlyin Township is much more developed than other townships. Most of the secondary economic activities involve producing products from the raw materials or semi-finished products. The higher the value of the products from secondary economic activities, the more developed the local economic sector and the national socio-economic status.

3.2.1 Various Types of Industry

In the present study area, Thanlyin, Three governmental industries and many private industrial enterprises had been established and in 1990s, around Thanlyin local industrial zone and Thanlyin Special Economic Zone are going to be set up with specific projects. Among these two zones, Thilawa Special Economic Zone (SEZ) link with not only local business people but also international businessmen. As a result, the local enterprises in Thanlyin and the job opportunity of residents will be abundant and the national income is obviously increased. The products produced from township area can be observed in the list.

Generally, the industries and workshops in Thanlyin are observed and the production is classified based on the different types and nature of activities.

3.2.1.1 State Owned or Government Owned Industry

There are three state owned factories in Thanlyin Township. No.(1) Oil Refinery Factory was established in the Yenon Ward, No(10) Saw Factory as set up in the Myohaung (West) at 1975 and White Lead Refinery Factory was built up 1993 in Aungchanthar Ward respectively. The information of these factories is not available

under certain circumstances. Before 1993, the industrial enterprises did not develop widely and the major focus was an agricultural sector. At that time the value and the quality of the products are not as high as the present situation.

3.2.1.2 Private Industry

The number of private industry is more than that of public industry. They produce more products. Observing the production, the need of raw materials and uses is directly proportional to the raw materials. The production and types of product in private industries differ according to the market.

- Food and Beverage Industry
- Chemical Industry
- Saw Mill (or) Saw Factory
- Metal Industry and
- Other Industry

Food and beverage industry is the most commonly found type of industry out of the secondary economic activities because there are 82 factories and 36% of the total. The second most type is other industry as there are 74 factories and 32.5%. The third most is saw mill industry and the number of the factory is 33 with 14%. There are 26 metal industries with 11.4%. The least type of industry is chemical industry with 13 factories and 5.7%. (see Table 3.11)

3.2.1.3 Thanlyin Local Industrial Zone and Thanlyin-Thilawa Special Economic Zone

(a) Thanlyin Local Industrial Zone

By observing industrial sector, by the year 2000, the Government established Thanlyin Local Industrial Zone with the 1,000 Acres at the south western part of Thanlyin is established for the purpose of promoting the economic market. There are altogether 32 factories and in these factories the enterprises are run with the local investment. Two-third of the total land area is not possessed by any factory. There are five different types of factories. According to secondary sector, concerning with the factories where raw materials are produced into finished products, the number of factories are 10 with 32.3% which is the largest number. The second and the third are metal and other industry with the number of 9 (27.5%) and 7 (21.4%) respectively. The number of chemical industry is 4 (12.3%). The least type is saw mill with the number of 2 and 6.3%.

There is a controlling department to supply the requirements of industrial business and to manage the processes in the industry.

(b) Thanlyin Special Economic Zone (SEZ)

Thilawa Special Economic Zone (SEZ) covers approximately 2,400 hectare (ha) or 5,930.5 acres with Yangon South District, Yangon Region, Myanmar. It is connected with 25 kilometer (16 miles) by road from downtown Yangon. The two townships most directly linked to the Thilawa SEZ development are Thanlyin and Kyauktan Township.

A special Economic Zone (SEZ) is an area within or across national boundaries that is administered under special rules. They come in different forms, which in Myanmar include free zones and promotion zones, as well as the potential for the creation of other types of zones as need be.

Table (3.11) Types of Secondary Activities of Local Industries in Thanlyin Township (2019)

| Sr. No. | Main Type of Industry | Subtype of Industry | Numbers | % |
|---------|----------------------------|------------------------------|---------|------|
| 1 | Food and Beverage Industry | ice cream and chocolate | 2 | |
| | | snacks and cashew nut | 15 | |
| | | ice production | 3 | |
| | | grinding services | 6 | |
| | | purified water | 36 | |
| | | rice mill | 10 | |
| | | oil mill | 5 | |
| | | bean mill | 3 | |
| | | soft drinks production | 2 | |
| | | Total | 82 | 36% |
| 2 | Chemical Industry | plastic | 6 | |
| | | make up and cosmetics | 2 | |
| | | traditional medicine | 3 | |
| | | mosquito repellent coil | 1 | |
| | | hair cleaning | 1 | |
| | | Total | 13 | 6% |
| 3 | Saw Mill Industry | wood mill | 13 | |
| | | furniture | 17 | |
| | | rattan table and chair | 2 | |
| | | cushion | 1 | |
| | | Total | 33 | 14% |
| 4 | Metal Industry | steel production | 7 | |
| | | gold smith | 5 | |
| | | lathe | 7 | |
| | | steel box and steel cupboard | 2 | |
| | | steelcoil and zinc | 3 | |
| | | stone shaping | 1 | |
| | | glass blowing | 1 | |
| | | Total | 26 | 11% |
| 5 | Other Industry | woolen and garment | 54 | |
| | | printing paper | 9 | |
| | | sewing flowers on cloth | 1 | |
| | | shoes | 2 | |
| | | candles and fragrant stick | 8 | |
| | | Total | 74 | 32% |
| | Total | | 228 | 100% |

Source: Myanmar Japan Thilawa Development (MJTD)

Announced in January 2011, the Thilawa SEZ has been continuously developed since November 2014. The Thilawa SEZ incorporates the Myanmar International Terminals Thilawa (MITT), a deep-sea port facility built in the mid-1990s. Development of the Thilawa SEZ aligns with the Government of Myanmar (GOM) focus on sustainable economic development and re-structuring of the Myanmar economy, from primary dependence on agriculture, forestry and fisheries to include labour-intensive industries such as manufacturing and services.

In March 2014, a preparatory study on Thilawa SEZ infrastructure development was undertaken to identify the required infrastructure and to develop the first phase of Zone (A).

Zone A comprises around 405 ha and is divided into phase 1 and phase 1 expansion (Phase A). Phase 1 construction activities commenced in September 2013 and concluded in August 2015. At the time, Zone A of the SEZ commenced operations. The Grand opening ceremony was held on 23rd September 2015.

Zone B comprises 700 ha and is planned for development from early 2017. It includes about 262 ha of industrial area, 267 ha of logistics area and 169 ha of residential and commercial areas. Other areas of the SEZ is 200 ha Development area (not including Zone A), is divided into Zone B (Area 1-4) and Area 5 and 6. Remaining area of the SEZ (outside Zones A and B) are earmarked for potential future development. However, this will depend on a number of factors including the success of the development and operation of these initial zone.

The industrial enterprises have been carrying out since 2015 in Thilawa Special Economic Zone. The investment of Myanmar Government is 10%, that of Myanmar Investors is 41%, that of Japan Government is 10%, that of Japan investors is 39% respectively. There are 302 factories, 109 factories for reservation agreement, 107 factories for investment permit sublease agreement and 96 factories for other types of industries according to the data of 2019 in MJTD.

The product types in Thilawa Special Economic Zone are different therefore, these different types are observed and categorized based on secondary economic activities.

There are 21 factories with (19.6%) of food and beverage industry, 15 factories with (14.1%) of chemical industry, 47 factories 43.9% of metal industry and 24 factories with 22.4% of other industry.

There is no industry concerning with saw mill industry. Metal industry is the highest type found in Special Economic Zone. 65% of products produced in Thilawa Special Economic Zone is sold in local market, 43% for Export and 1% for others (local and export).

There are 109 factories for reservation agreement and the ownership according to the nation is that – 55 factories are owned by Japan; 55 by Thailand, 8 by Korea; 6 by Taiwan; 4 by Malaysia; 3 by Myanmar; 3 by Hong Kong; 3 by Switzerland; 2 by USA; each by Germany, Netherland, France, Australia, Vietnam, India and Indonesia.

Table (3.12) Types of Secondary Activities of Thilawa Special Economic Zone (SEZ) in Thanlyin Township (2019)

| Sr. No. | Main Type of Industry | Sub-type of Industry | Number | Percent (%) |
|---------|----------------------------|---|--------|-------------|
| 1 | Food and Beverage Industry | Various of Snack Industry | 11 | 19.6% |
| | | Agricultural Product Industry | 8 | |
| | | Noodles and Ready-to-eat Product Industry | 2 | |
| | | Total | 21 | |
| 2 | Chemical Industry | Paints Industry | 4 | 14% |
| | | Lubricant Industry | 2 | |
| | | Plastic Molding | 3 | |
| | | Medical Products | 6 | |
| | | Total | 15 | |
| 3 | Saw Mill Industry | - | - | - |
| 4 | Metal Industry | Construction Material and Parts Industry | 17 | 40% |
| | | Wire Industry | 3 | |
| | | Ironworks Industry | 1 | |
| | | Automobile & Parts Industry | 7 | |
| | | Homecare Product Industry | 1 | |
| | | Electronic Parts Industry | 8 | |
| | | Conveyance Machinery Industry | 1 | |
| | | Galvanized Metal Industry | 5 | |
| | | Total | 43 | |
| 5 | Other Industry | Garment Industry | 15 | 26% |
| | | Variety of Paper and Tissue Industry | 9 | |
| | | Shoes and Parts Industry | 3 | |
| | | Animal Feed Industry | 1 | |
| | | Total | 28 | |
| | Total | | 107 | 100% |

Source: Myanmar Japan Thilawa Development (MJTD)

3.3 Classification of Tertiary Economic Activities

According to R. Boice, the tertiary economic activities are third stage in economic activities and they are transition or exchange between the produces and the consumption sectors.

Tertiary sector is service sector of the economy. Services of various kinds like education, health, banking, insurance, trade are included in this area.

The study area is divided into urban and rural area. People in rural area mainly do the agricultural business and they contribute to the economy of the township. People in urban area have the main enterprises by dealing and trading tertiary economic activities, and they support the urban economic development.

The tertiary economic activities which promote the local economic can be categorized into two types. They are commercial (exchange commodity and service activities).

3.3.1 Commercial Activities

Commercial activities consist of markets, wholesale and retail shops, restaurants and food shops, hardware shops and shops catering for other goods.

There are two types of markets observing in Thanlyin like permanent market and temporary market. Permanent market such as Myohaung Bazaar (or) Kannar Bazaar in northern of Town, Myoma Market and Aungchanthar Bazaar in the central of town and Htarmlone Bazaar in the southern of town or outer urban area scatters in the respective area of the town. Four permanent markets are under the control of township YCDC.

Temporary markets are Myohaung (middle) market, Thaukyetwin Market, Oatphosu Market, Dhamma Yaungchi Bazaar (lower), Nyaung Thone Bin Bazaar (Sand Street), Nantthargone Bazaar, Payagone Bazaar and Aungchanthar Bazaar (Upper). These bazaars are all located on the roads of wards and the streets of wards and they are not controlled by YCDC.

Table (3.13) Commercial (exchange commodity) Activities of Thanlyin Township (2019)

| Sr. No. | Wards | Market | | Wholesales & Retail Shops | Restaurants & Food Shops | Hardware Shops | Other shops | Total Shops |
|---------|-------------------|-----------|-----------|---------------------------|--------------------------|----------------|-------------|-------------|
| | | Permanent | Temporary | | | | | |
| 1 | Amuhtan | - | 1 | 25 | 10 | 7 | 23 | 66 |
| 2 | Aungchanthar | 1 | 2 | 28 | 25 | 12 | 17 | 85 |
| 3 | Aungmingalar | - | - | 6 | 9 | 4 | 5 | 24 |
| 4 | Bagosu | - | - | 5 | 4 | 4 | 6 | 19 |
| 5 | Daraga | - | - | 6 | 2 | 3 | 2 | 13 |
| 6 | Htanpingone | - | - | 4 | 7 | 3 | 3 | 17 |
| 7 | Myohaung (East) | - | - | 3 | 6 | 3 | 1 | 13 |
| 8 | Myohaung (Middle) | - | 1 | 16 | 14 | 13 | 11 | 55 |
| 9 | Myohaung (West) | 1 | - | 5 | 9 | 3 | 2 | 20 |
| 10 | Myoma (North) | 1 | - | 32 | 37 | 14 | 21 | 105 |
| 11 | Myoma (South) | - | - | 14 | 12 | 8 | 10 | 44 |
| 12 | Myothit (East) | - | - | 5 | 7 | 5 | 2 | 19 |
| 13 | Myothit (Middle) | - | - | 5 | 15 | 5 | 3 | 28 |
| 14 | Myothit (West) | - | - | 3 | 12 | 8 | 11 | 34 |
| 15 | Yenan | - | - | - | - | - | - | - |
| 16 | Okkphosu | - | 2 | 4 | 15 | 5 | 8 | 34 |
| 17 | Thauktawtwin | - | 1 | 3 | 17 | 7 | 7 | 35 |
| | Total | 10 | | 164 | 201 | 104 | 132 | 611 |

Source: Administration of Farmland and Statistics Department in Thanlyin Township

3.3.2 Tertiary Activities

There are various types of services (tertiary activities) observed in Thanlyin Township. These services activities include financial institution, professional services, skilled services, repair services, lending services, recreational services and ICT services. Majority of services can be mostly found along roads such as Bogyoke Nay Min Road, Lanmadaw Road, Theinkyaung Road and Kyaikkhauk Pagoda Road and their surroundings.

The total number of shops providing tertiary service is 401 and they play the vital role in the economic development of the town.

Financial institution is composed of insurance businesses and pawning services. The banks are opened in local business area of Thanlyin. There are two types of banks: stated owned and private owned banks. State owned banks like Myanmar Economic Bank can be found on Kyeikhauk Pagoda Road, Ahmuhtan Ward, near clock tower. Myanmar Agricultural Development Bank is opened also in Ahmuhtan Ward. Private Banks are altogether 6 private banks in the township and they also run insurance businesses. Ayeyarwaddy bank is on the Kyeikhauk Pagoda Road, Thauktawtwin Quarter; CB Bank is on Kyeikhauk Pagoda Road, Aungmingalar Quarter; Myawaddy Bank is on Lanmadaw Road, Myoma (North) Ward, Myanmar Apex Bank and Kanbawza Bank are on Bogyoke Nay Win Road, Myoma (South) Ward, Global Treasure Bank is on Theinkyaung Road, Myothit (middle) Quarter.

Insurance business and transfer counter is opened in Aungmingalar Ward as well as money changer counters are in the crowded area such as highway road, main motorway, near market area, around Kyeikhauk Pagoda.

Provisional services are comprised of Myanmar Traditional Medicine and Western Medicine, training schools, tuitions and computer technologies services, English and other languages center. Provisional services can be found in the downtown area, the crowded area, and the area which has good transportation. The number of clinics (curing eyes, teeth and general practitioners) is (63). (51) clinics can be observed in the inner area and 12 clinics can be seen in the outer area. Clinics can be mostly found in 4 Ward: Myoma (North), Myoma (West), Aungmingalar Ward, and Aungchanthar Ward. Training school (also included in provisional services) provide 22 services.

Beauty salons, photo studio and barber are described as skilled services. In the whole area of Thanlyin, there are altogether 100 percent services. The beauty salons and barber services are about 75 services, and among them 55 services can be found in the inner area and the rest 20 services can be observed in the outer area. Photo studio services are in the crowded area. They are on Bogyoke Nay Win Road, Kyeikhauk Pagoda Road and Thanlyin-Kyauktan Motorway.

Repair services have workshops, motorcycle, bicycle, battery and other electronic devices. The total number of repair services is 125. Among them, motorcycle services can be widely used in different areas in the township.

Lending services provide lending books, videos (DVD shops) and others. These shops are in such quarters as Myoma (North), (South) and (West), Thauktawtwin, Oatphosu, Bagosu and Aungchanthar. The number of shops is about 20. According to the data from Administrative Statistics in 2009, the number of shops providing lending

services is between 30 and 50 in 2009. The different small number of shops within one decade period is due to the development in socio-economics and social media.

The different number of services in recreation services is 22. They are hotel, lodging, township gym (Thihadipa), tennis court, golf club, cinema, karaoke hall. There is one cinema, one golf club and one tennis court in the downtown area. The most common type is lodging. They are mainly found on Kyeikhauk Pagoda Road, and Bogyoke Nay Win Road.

ICT services include mobile shop and services. There are 53 services. All of them, 19 shops are on Bogyoke Nay Win Road and Lanmadaw Road, 20 shops are on Kyeikhauk Pagoda Road and 14 shops are on Theinkyaung Road, other streets and other crowded area. In this township, there are no services for computers and accessories.

When the tertiary services in the township are observed, there are different services. The number of skill services and repair services is the highest. The economic activities in the urban area, are depending on the tertiary activities and the urbanization is also developed according to the prosperous condition of urban economy.

Table (3.14) Tertiary Activities of Thanlyin Township (2019)

| Sr. No. | Wards | Financial Institution | Provisional Services | Skilled Services | Repair Services | Lending Services | Recreational services | ICT services | Total Shops |
|---------|-------------------|-----------------------|----------------------|------------------|-----------------|------------------|-----------------------|--------------|-------------|
| 1 | Amuhtan | 2 | 4 | 5 | 9 | 1 | 2 | 5 | 28 |
| 2 | Aungchanthar | 3 | 11 | 8 | 12 | 2 | 2 | 6 | 44 |
| 3 | Aungmingalar | 2 | 10 | 6 | 10 | - | 3 | 5 | 36 |
| 4 | Bagosu | 3 | 8 | 6 | 7 | 1 | 3 | 2 | 30 |
| 5 | Daraga | - | 2 | 2 | 5 | - | - | - | 9 |
| 6 | Htanpingone | - | 2 | 3 | 7 | - | - | 2 | 14 |
| 7 | Myohaung (East) | - | 2 | 2 | 4 | - | 1 | 2 | 11 |
| 8 | Myohaung (Middle) | - | 2 | 5 | 9 | 1 | 2 | 4 | 23 |
| 9 | Myohaung (West) | - | 3 | 4 | 7 | 3 | 1 | 3 | 21 |
| 10 | Myoma (North) | 3 | 12 | 10 | 14 | 5 | 1 | 6 | 51 |
| 11 | Myoma (South) | 1 | 11 | 6 | 10 | 4 | - | 6 | 38 |
| 12 | Myothit (East) | - | 3 | 2 | 8 | - | - | 1 | 14 |
| 13 | Myothit (Middle) | 3 | 2 | 2 | 6 | - | 1 | 2 | 16 |
| 14 | Myothit (West) | - | 5 | 4 | 7 | - | 1 | 4 | 21 |
| 15 | Yenan | - | - | - | - | - | - | - | - |
| 16 | Okkphosu | 3 | 5 | 7 | 8 | 2 | 2 | 3 | 30 |
| 17 | Thauktawtwin | 1 | 3 | 3 | 2 | 1 | 3 | 2 | 15 |
| | Total | 21 | 85 | 75 | 125 | 20 | 22 | 53 | 401 |

Source: Administration of Farmland and Statistics Department in Thanlyin Township

3.4 Classification of Quaternary Economic Activities

In this analysis, the real situation of the study area has four major criteria (i.e.) Education, Health, Transportation, Communication and are suitable to use as the basic types of this sector.

3.4.1 Education

Education is very fundamental base for all around development of a region and thus it is necessary to observe as a basic one for any form of research work. The current trends of education and the success of local education plays the vital role of the future development of the region. They are quite different from the widespread education and regular common type of education in the past. It is necessary to study the schools, teacher-student ratio which can provide educational support to the area.

There are two strata of education. They are (a) basic education and (b) higher education. According to the data by the year 2019, the basic education structure is described.

By observing the teacher-student ratio in the above 3 levels, the ratios are uneven proportion and they are even more than the normal amount (that is 1:20±)

Higher education: the number of students and their specialization over higher education structure are closely related to potential demand of labour forces that can take a promise to the development of economic structure. Therefore, facts about higher education structure in that area are collected and interpreted here. (See the table 3.15)

Table (3.15) Basic Education Structure of Thanlyin Township (2019)

| Sr. No. | School | Number | Teacher | Student | Ratio of Teacher & Student |
|---------|------------------------|--------|---------|---------|----------------------------|
| 1 | High School | 9 | 462 | 16,784 | 1:36 |
| 2 | High School (Branch) | 5 | 154 | 5,530 | 1:36 |
| 3 | Middle School | 4 | 70 | 2,530 | 1:36 |
| 4 | Middle School (Branch) | 5 | 81 | 3,068 | 1:38 |
| 5 | Post Primary School | 23 | 383 | 8,835 | 1:23 |
| 6 | Primary School | 34 | 188 | 3,690 | 1:20 |
| 7 | Monastic School | 14 | 204 | 6,828 | 1:33 |
| | Total | 94 | 1542 | 47,265 | 1:31 |

Source: General Administrative Department, Thanlyin Township

Table (3.16) Higher Education Structure of Thanlyin Township (2019)

| Sr. No. | University | Teacher | Student | Ratio of Teacher & Student | Remark |
|---------|-----------------------------------|---------|---------|----------------------------|---------------|
| 1 | Co-operative University | 140 | 1,881 | 1:13 | |
| 2 | East Yangon University | 527 | 10,295 | 1:20 | Art & Science |
| | U.D.E (East Yangon Branch) | - | 6,830 | 1:13 | |
| 3 | Thanlyin Technological University | 366 | 4,765 | 1:13 | |
| 4 | Myanmar Maritime University | 115 | 1,920 | 1:17 | |
| | Total | 1148 | 25,691 | 1:22 | |

Source: General Administrative Department, Thanlyin Township

According to the table, there are 4 universities in the higher education in Thanlyin. They are Co-operative University, East Yangon University, and University of Distant Education, Thanlyin Technological University and Myanmar Maritime University. The ratio of teacher student in Co-operative University and in Thanlyin Technological University is (1:13). The ratio of teacher- student in Myanmar Maritime University is (1:17) and the ratio in East Yangon University is 1:20, and it is observed that it is more than other higher education structure. In accord with the human resources of higher education structure in the study area, the qualification of human resources, production and reproduction are all depending on the level.

3.4.2 Health Care Centre

In accord with the data by the year 2009, (104) health care centre in the township are listed and they provided the best health care services for the residents. The data concerning with these centres are described in the table (2.17). These centres provide the different abilities and varied number of patients are also attending the centres.

Table (3.17) Different Types of Health Care Centre in Thanlyin Township

| Sr. No. | Health Care Center | Numbers | Doctors | Nurses | Patient | | Remark |
|---------|--------------------------|---------|---------|--------|-----------|--------|-----------------------------|
| | | | | | In | Out | |
| 1 | General Hosiptal | 1 | 55 | 74 | 7,288 | 25,869 | (State) Average per year |
| 2 | Chanmyae Myittar | 1 | 65 | 96 | - | - | (Private) |
| 3 | Circle Hospital | 1 | 3 | 7 | (100-150) | - | (State) Average per year |
| 4 | Rural Health Care Centre | 22 | 16 | 45 | (250-400) | - | (State) Average per year |
| 5 | Clinic | 71 | - | - | - | - | (Private) |
| 6 | Clinic (NGO) | 8 | 11 | 15 | - | - | |
| | Total | 104 | 150 | 237 | 7,288 | 25,869 | |

Source: General Administrative Department, Thanlyin Township

3.4.3 Transportation

Transportation sector plays a pivotal role for the development of the region. There are three types of transportation in Thanlyin Township. They are road transportation, railway transportation and water way transportation. There is no airline in Thanlyin Township. So, the other types are observed by excluding the airline.

3.4.4 Communication

Within 2000s year period, the three different types of communication are post office, telegraph and auto telecommunication office. By the year 2019, it has modern communication system like fax, email, mobile phone and online. Thanks to the widespread communication network, the economic status, information processing can be done in a quick momentum, they can have the contemporary development. According to 2019 data, there are one post office and one telegraph office, 2,374 auto phones users (one percent of total population), 239,935 mobile phone users (88% of total population) and 218,254 internet users (80% of total population). It is observed that Thanlyin keeps abreast with the modern development.

4. GENERAL ASSESSMENT OF ECONOMIC ACTIVITIES

Thanlyin Township is one of the 45 townships in Yangon Region and is a seaport located in southern Yangon District. As soon as it is passed through, Thanlyin Bridge from downtown Yangon, the climate of the study area is fine and the land is covered with soils which are rich in fertility. The rate of population there annually increases in one percent and different ethnic groups and several of business live there. So, the research is emphasized by economic activities to assess the economic development of the region from geographical point of view.

While studying activities of the whole area by dividing into four sectors, although agriculture, livestock and fisheries are described in primary sector, mineral and forestry industries cannot be described as these industries do not exist there. In agricultural sector, the farmland is 91% of all the land area of the whole township. So, there is a high yield of monsoon paddy in that study area and it not only gives enough provisions to local people but also can export to other regions. However, only 3% of farmland for summer paddy is grown and as this is a small area, the area should be enlarged. As for green grams and grams are mainly cultivated but groundnut is slightly planted. Monsoon paddy is grown in the east and middle of the study area and summer paddy only in the middle of the area as these are vast lowlands and soils are the most suitable for agriculture. In the aspect of other crops, only seasonal vegetables are grown and they should be promoted for lucrative purpose. As agriculture is the chief economy of the township, there should be an increase in annual growing rate of the crops such as summer paddy, monsoon paddy and biennials as well as a higher yield of those crops to be able to expand the market to local region as well as to other township.

To study the economic development of Thanlyin Township, it is needed to consider both urban area and rural area. The economic benefit of rural area depends only on agricultural businesses but that of urban area mainly focuses on industries and services. In the matter of secondary sector, various industries in the region can be classified into 5 types. Despite not having a great deal of the importance of industry and its development in this region in 2000s, the industries are collaborating with local industries as well as those from foreign countries nowadays in 2019. In 2019, compared with the economic sectors of other townships, local industry and Thilawa Special Economic Zone (SEZ) develop more and more, as the secondary sector, and they regularly fulfill the daily necessities of native people

in the region and the market demands as well as they stand an important role for exportation. However, the local business persons should make a competitive market system as it is crucial to export the goods to the foreign countries. It can be some inflexibility, rigidities and complexities in searching competitive markets because of such situations, however, market and importing system develop more and more. As for the foreign business persons, they become increasing in investments and get more market opportunities. As a consequence, market competition is now being faced by the entrepreneurs who have fewer amounts in investment and those who spend great amount in investment because of their long-term competition. Because of the data, local and international entrepreneurs gradually expand the regional market. Therefore, the local traders mainly need to maintain the balanced market and trade development.

Among the economics activities, tertiary sector obviously and successfully exists as the central business area in the internal areas of the township. Those places are chiefly transforming into the trade centres for retail and wholesale. The services, standing as a tertiary sector, are mainly found not only in central business area but also in crowded places and on main roads and this is one of the main reasons which rapidly changes in accordance with the (civil development projects/ development projects of the city). Moreover, tertiary sector plays a vital role in economic activities of local people and the economic development of the township.

In the education sector, among the quaternary activities, the present number of teacher and students and the qualities of the school are taken as an important factor. But, in basic education level, it is need to solve the inequality of the ratios of teachers to students. As for the health care sector, the health care services in rural areas and the number of hospital and doctor in urban areas are numerous but not enough. Though there are some health care centres and dispensaries in the rural region, people mainly rely on the clinics and hospitals in urban area for their health.

In the matter of transportation sector, although waterway plays between the destinations once a day and railway plays between the destinations twice a day, delays are occurred in carrying out the works timely. As there are 7 bus-routes that play on Thanlyin–Kyanktan–Khayan road, transportation is easy and convenient.

Nowadays, information, technology and communication developments are crucial. According to the data in 2019, among the total population of 273,043 in Thanlyin Township, 88% use mobile phones and 80% are the internet users. Local people of the township use email, fax and online system in keeping with the time.

Therefore, advancing all the factors of these four sectors and completing their qualities make the economic developments of a township catch up with the times.

5. CONCLUSION

The economic activities are studied dividing into 4 sectors to be able to assess the socio-economic development of Thanlyin Township.

Primary economic activities mainly consist of agriculture, livestock and fishery of Thanlyin Township. The net sown area of plot of land is 60,506 acres, and although it is 91% of the whole study area, the net sown plotting area for monsoon paddy is 59,760 acres and that of summer paddy is only 2,000 acres, annually. Besides, in agricultural sector, not only the monsoon paddy and summer paddy but also various kinds of pulses and other crops are grown. In the sector of livestock, animal husbandry businesses are done only in 10 of 28 village tracts. There are a few businesses concerning livestock in the rest of the village tract, they are just to support the agricultural processes and to consume in the local region. There

are altogether nine types of animals raised in those 10 villages and the total number is 835,467. In the fishery of the study area, the businesses are done by naturally catching from the rivers without any systematic way for fisheries like fishponds. There are seven villages in which people make their living with fisheries, in the rivulets of Khayan Creek, Bouh Creek, etc., Yangon River, Bago River and other lakes and ponds.

In the secondary sector, compared with the whole area of the township, there are 228 industries and they can be classified into five categories. Moreover, Thilawa Special Economic Zone (SEZ) has been established since mid-1990s and now 107 industries have been running since 2014. In tertiary sector, there are two types: commercial activities and tertiary activities. As in the first type, totally 611 shops exist mostly in Myoma (North) ward, Aungchanthar ward and Ahmuhtan ward. In the second type, which is termed as tertiary activities, 401 services are found mainly in Myoma (North) ward, Myoma (South) ward and Aungchanthar wards. Distinctively, those services are not done in Yen-an ward. This is because an Oil Refinery plant was launched in that place in 1897 and the workers and their families of this industry live in the compound and so it is sparse in that ward. The crowded places are Myoma (North), Myoma (South), Aungchanthar, Kyaikkhauk Pagoda Road, Bogyoke Nay Win Road and their surroundings, and people live collectively in these places and these are the areas of supporting incomes for the whole township.

The Quaternary sector is analyzed in education, health, transportation and communication. In education field, it is found that the number of students is much more according to the ratio of students to teachers. Then, healthcare system and transportation system are also studied. Therefore, by completely describing all those 4 activities, the research paper points out the economic development of Thanlyin Township as well as the socio-economic development of the region.

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