Distribution Pattern of Tea Shops in Dagon Myothit (North) Township

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Abstract

With the rapid increase of population in Yangon City, the former national capital has become the largest commercial centre of the country with a wide range of commercial activities to satisfy various needs of the city dwellers. Foodstuff is one of the basic needs for human existence in which tea shops play an important role in Yangon City. Dagon Myothit (North) Township is included in East Yangon District and it is about 11 miles (17.7 km) from the downtown of Yangon City. Formely Dagon Myothit (North) Township has distinct rural nature and most lands are used for cultivation. Due to the allocation of settlements, a number of commercial activities and some urban criteria are dominant in this area. Tea shops are a kind of commercial activities and expose the symbol of urban nature. This study focuses to depict the spatial distribution pattern and functions of the tea shop in Dagon Myothit (North) Township. This paper " Distribution Pattern of Tea Shops in Dagon Myothit (North) Township" will first examine the distribution pattern of tea shops by Mean Center, Pearson's Product Moment Correlation Coefficient and Nearest Neighbor Analysis Method. The distribution pattern of tea shops is directly related to the distribution of population in the study area. But there is no relationship between the area of wards and the number of tea shops. According to the correlation coefficient test, there is a less positive correlation between the number of tea shops and population distribution.

Keywords: Tea shops, Distribution Patterns, Mean Center, Pearson's Product, Nearest Neighbor, Dagon Myothit (North), Yangon City

Introduction

Dagon Myothit (North) Township is a new town which has emerged recently. With the gradual in-migration of families from various townships of Yangon City, the population has increased rapidly, expanding the demand for various items from basic foodstuff to modern household goods. Existing small scale economic activities have also been transforming into the form that is more competitive in market economy. Accordingly, tea-shops have come into existence one after another of which some were established to exploit the existing growth of the people. And thus the distribution pattern of the tea-shops tends to have oriented towards the places where people are more concentrated, such as the corner of road junction or on the more populous main roads and streets. According to the 2019-20 Township Development Committee's record, there are 230 food and beverage shops in Dagon Myothit (North) Township. Among them, tea shops share about 51 % of the overall shops and occur as a very outstanding item. Nowadays, due to the rapid changes in social, economic, technological behaviors, tea shops not only represent as the place for food and drinks but also stand as the social hub, business point, information desk and entertainment centre and so on. There are 118 tea shops in the study area. The area of the tea shops may be large or small depending on their space available. The number and quality of the tea shops depend on the socio-economic status of the township. The distribution of large size tea shop and small size tea shop can be found as 41 and 77 shops respectively in the study area. For the whole township, most of the tea shops are distributed mainly along the main roads, junctions of streets and concentrated near the large markets. The distance which determines the cost of transport plays a critical role in the emergence of the tea-shops activity. This study focuses on the distribution pattern of tea-shops from the geographic standpoint.

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Research Question

What are the major forces that cause the development of tea shops in Dagon Myothit (North) Township?

Aim and Objectives

The main aim of this paper is to analyze the GIS between distribution pattern of tea shops and distribution pattern of population in Dagon Myothit (North) Township. To achieve the main aim, the following objectives are set:

To study the structure of the tea shop

To investigate the distribution pattern of tea shop

To analyze the factors that influences the distribution pattern of tea shop

Sources of Data and Methodology

This research is based on the analysis of secondary data and primary data obtained through field survey, questionnaires and structured interviews. Acquisition of relevant data involves library sources, internet downloads, Google Map and field survey techniques. Base map of Dagon Myothit (North) Township is obtained from the Land Records Department of Dagon Myothit (North) Township. The detailed primary data are collected through the field surveys and interviews. This research work is based on interviews with 50 number of tea shops, including 35 large tea shops and 15 small tea shops. Secondary data are collected from Land Records Department, Dagon Myothit (North) Township Development Committee, Meteorology and Hydrology Department, Immigration and Manpower Department. To analyse the spatial-temporal variation of tea shops in Dagon Myothit (North) Township, some statistical methods have been used in this paper. The distribution pattern of tea shop is analyzed by Nearest Neighbor Analysis Method, Person's Product Movement Correlation, and Mean Center Analysis. Finally, geographical interpretations of the results have been done with the help of maps and diagrams.

Background of Study Area

Dagon Myothit (North) Township is one of the thirty-three township of Yangon City. To get the compact shape in existence, the city was extended to the eastern and western parts by the establishments of new railroads, motor roads and river crossing bridges. Therefore, Dagon Myothit emerged as a large township with an area of 278.32 square kilometers (107.46 sq-miles) in November, 1989. Owing to its large size, the new town was divided into two townships: Dagon Myothit (North) Township and Dagon Myothit (South) Township in October, 1990. According to the announcement of Ministry of Home Affairs, the Dagon Myothit (North) Towship was again subdivided into Dagon Myothit (East) Township on 19 August, 1994.

Dagon Myothit (North) Township is situated in East Yangon District and it is about 11 miles (17.7 km) from the downtown of Yangon City. It lies between north latitudes $16°43'$ and $17°47'$ and between east longitudes $96°13'$ and $96°17'$. It is bounded by North Okkalapa Township on the north, Dagon Myothit (East) Township on the east, Dagon Myothit (South) Township and Thingankyun Township on the south, and South Okkalapa Township on the west. The township covers an area of 10.145 square miles (26.28 square kilometers), consisting 26 wards. (As shown in figure 1)

The area occupied by Dagon Myothit (North) Township, in fact, is part of the floodplain built by the Ngamoeyeik Creek and the Bago River and thus the land is low and flat with a general elevation of less than 20ft above sea-level. Among the basic geographic factors

location is the most dominant in affecting the formation and development of economic activities within the study area. The climatic type is Tropical Monsoon (Am), characterized by alternate wet and dry period. The occasional heavy and incessant rain and extremely high percentage of relative humidity can cause damage to some food-stuffs and other delicate items unless they are well kept.

According to 2019 population data, the total populations are 203948 people. As the township has an area of 10.145 square miles the density was 20103 persons per square mile. Population distribution is highly concentrated in the central part of the township because of accessibility.
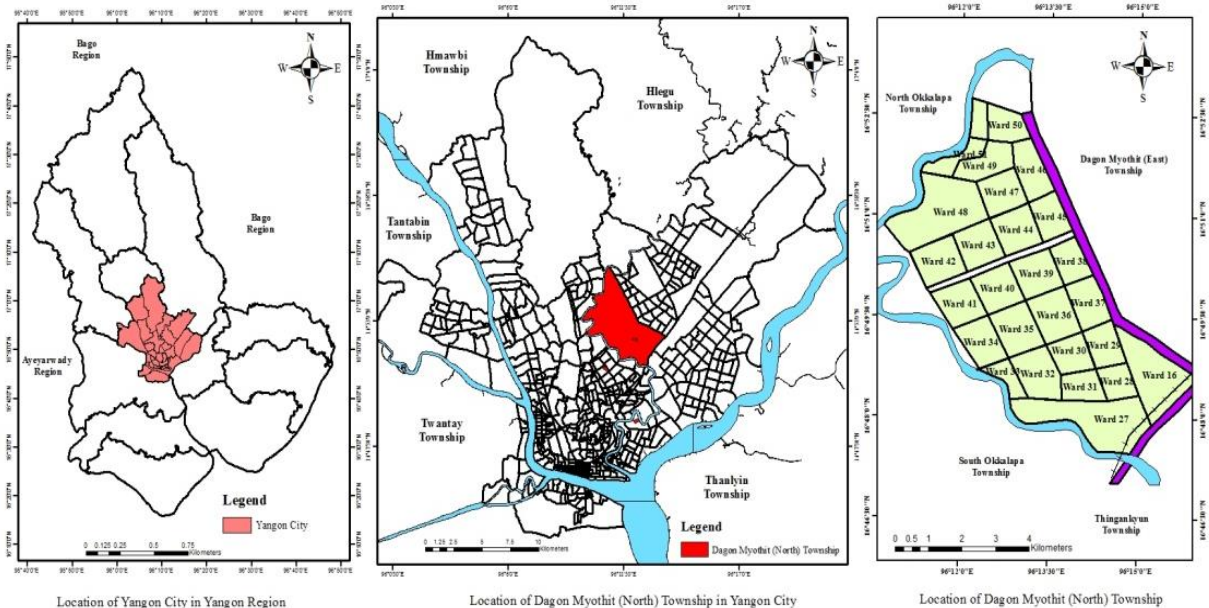

Figure 1 Location of Study Area

Source: Township Development Committee

Results and Findings

There are many types of teashops in Dagon Myothit (North) Township, each having its own different and unique style. But the most popular ones are the roadside ones. They are simple and open on a concrete slab. Small and low tables surround the tea shop where customers can sit. This is where you meet the locals. Tea shops are a distinctive feature of daily life in the country and owe their popularity to their social role as venues where people can meet to chat and relax, as well as quench their thirst and enjoy simple snacks. Meeting places for people of all backgrounds, tea shops can be found anywhere and everywhere; from footpaths in the towns and cities to sheltering under shady trees in the township. Especially, all of main roads should be considered primarily as potential sites of new tea shops.

General distribution of Tea shop

Urban residents are getting into the habit of taking tea or coffee at least twice a day. During last decade, most of the tea shops were served only tea or coffee or milk with tea and drinks timely: Breakfast menu, Lunch menu, and Evening menu set. Some are used here for their business, some teenagers used these tea shops here for listening popular music or watching sports, movies and some adult men want to meet and talk their colleagues. These tea shops can be called as a social contact place or as a business information center or as a recreation center.

There are totally 26 Wards with 118 tea shops in the Dagon Myothit (North) Township. There are two types of tea shops, large tea shop and small tea shop depending on their space. Among the total number of 118 tea shops, some are open from about 5:00 in the morning to about 10:00 in the evening. Some are open till night with international sports programs as special service.

The highest number of tea shop in Dagon Myothit (North) Township can be found in Wards No.(34) with nine tea shops. The second most concentrated ward of tea shops is Ward No.(32) with 8 tea shops, followed by Wards No.(33), Wards No.(35), Wards No.(41), Wards No.(42),Wards No.(49) and Wards No.(51) with six tea shops respectively. The least number of tea shops can be found Ward No. (27) because this ward is marginal area of the study area. Therefore, Ward No.(34) has the largest number of tea shops than other ward, but the least total number of tea shops can be found in Ward No.(27). The distribution pattern of tea shops by wards can be shown in Table1.

Accessibility is very much important for the majority of the city dwellers, as they to depend on public transport systems. Out of 118, 54 tea shops are located along the main roads and at the corner of road junctions and close to bus stops. The number of tea shops located in the middle portion of wards are 64. Among the main roads within Dagon Myothit (North) Township, 13 tea shops can be found in Pin Lone Road and Ba Yint Naung Road has 12 tea shops, there are 7 tea shops on U Wisara Road, 11 tea shops on Bo Hmu Ba Htoo Road, 1 tea shop on Yazthingyan Road and 3 tea shops on Pyi Thaung Su Road. And then Min Ye Kyaw Swa Road has 5 tea shops and Ban Doo La Road has 2 tea shops. The largest amount of total number of tea shops can be found on Pin Lone Road and Ba Yint Naung Road. Generally, most of the tea shops within Dagon Myothit (North) Township are situated along the both sides of the main roads and Wards. Thus the distribution pattern of tea shops can be said main roads wise distribution pattern. (As shown in figure 2)

The structure analysis of tea shops in the study area means the analysis of the tea shops in size. According to the field observation, the size of the tea shops in study area can be categorized as large size and small size. Whatever the conditions of tea shops are different such as brick, wood or other, the large tea shop means any type of tea shop which has an area of above (20ft×20ft) and the lesser in this area is defined as the small. Among 118 tea shops, 41 shops are large and 77 shops are small within the study area. Therefore, the percentage of small tea shops (65%) is greater than the large tea shops (35%). Most of the large tea shops are on the main road, which has good facility, good transportation, on the road junction and near the bus stop. On the other hand, the small tea shops are in the streets, which has less facility and far from the bus stops, but total number of small tea shops are located near the residential area in each Ward. Large and small tea shops can be found in every ward, along the streets of main roads such as Pin Lone Road, U Wisara Road, Bo Hmu Ba Htoo Road, Ban Doo La Road, Min Ye Kyaw Swa Road and Yazathingyan Road.

Table 1 Number of tea shops by Wards

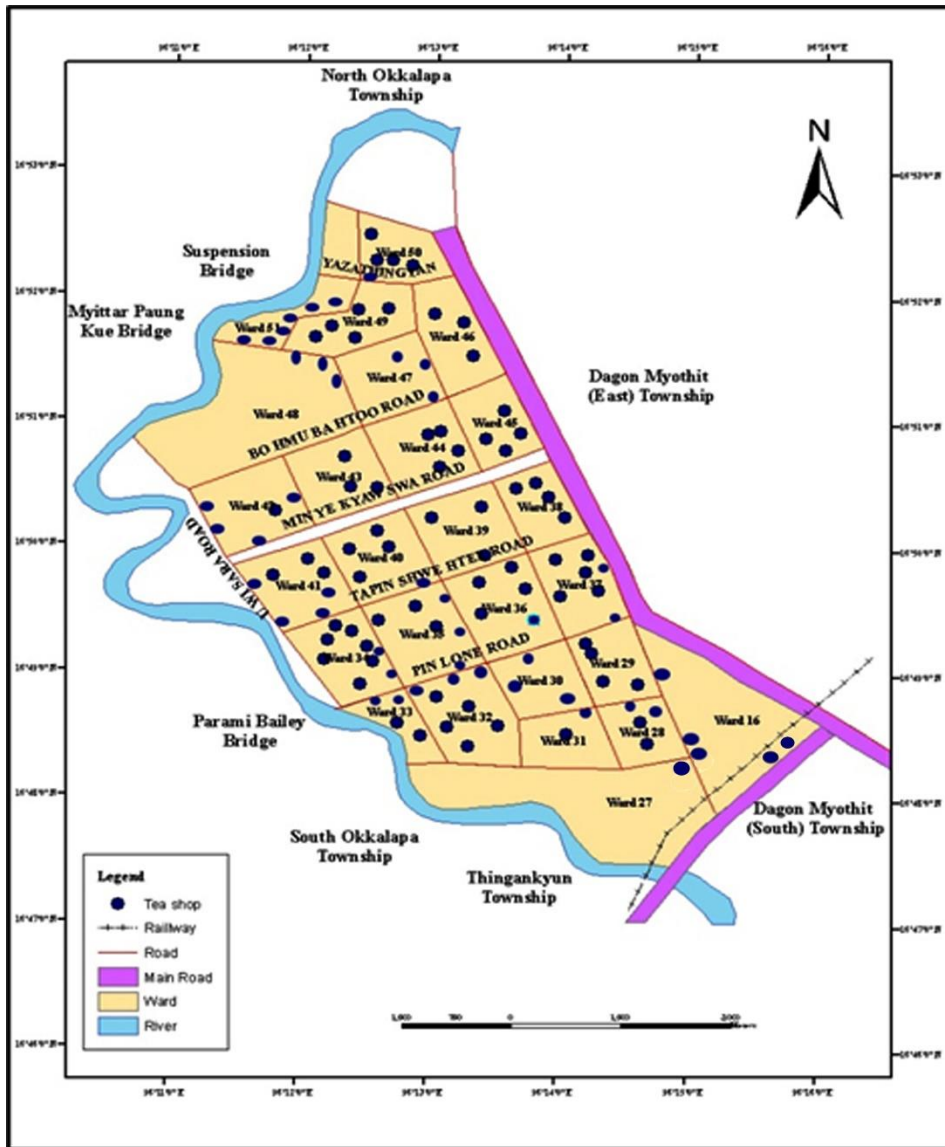| Wards	Large Tea Shops	Small Tea Shops	Total
Wards no. (16)	1	2	3
Wards no. (27)	-	1	1
Wards no. (28)	1	3	4
Wards no. (29)	2	1	3
Wards no. (30)	1	2	3
Wards no. (31)	1	1	2
Wards no. (32)	3	5	8
Wards no. (33)	2	4	6
Wards no. (34)	4	5	9
Wards no. (35)	2	4	6
Wards no. (36)	2	3	5
Wards no. (37)	2	5	7
Wards no. (38)	2	2	4
Wards no. (39)	-	3	3
Wards no. (40)	2	3	5
Wards no. (41)	2	4	6
Wards no. (42)	2	4	6
Wards no. (43)	1	2	3
Wards no. (44)	1	3	4
Wards no. (45)	1	3	4
Wards no. (46)	1	2	3
Wards no. (47)	1	2	3
Wards no. (48)	1	2	3
Wards no. (49)	2	4	6
Wards no. (50)	2	3	5
Wards no. (51)	2	4	6
Total	41	77	118

Source: Field Observation,2021

Figure 2 Distribution of Tea shops in Dagon Myothit (North) Township

Source: Based on Table 1

Analysis on Distribution of Tea Shops

Yangon City has various types of tea shops. Dagon Myothit (North) Township is composed of 26 wards. The township covers an area of 10.145 square miles (26.28 square kilometers). Supporting factors of the analysis on present distribution of tea shops in Dagon Myothit (North) Township is rather based on Geographic Information System (GIS) and statistical methods.

Nearest Neighbour Analysis

To measure the distribution pattern of tea shops, the Nearest Neighbours Analysis is used. Nearest Neighbour Analysis examines the distances between each point and closest point to it. It is a method of exploring pattern in location data by graphically comparing the observed distribution functions of event-to-event or random point to event nearest neighbor distance. It attempts to measure the distribution of points according to weather they are clustered, random or regular.

The values of NNI range between two theoretical extremes, 0 and 2.15. The index value of 0.00 is for a totally clustered pattern and 1.0 means a random distribution and a maximum of 2.15 for a completely regularly space pattern. The calculated value by the formula concerned is 0.10 and thus the distribution of tea shops within Dagon Myothit (North) is random rather than clustered or uniformly distributed. Therefore, this is a good opportunity for the consumers. Because they could have a chance to choose the most suitable tea shop among them whether the shop is far or near from their home. (Figure 3)
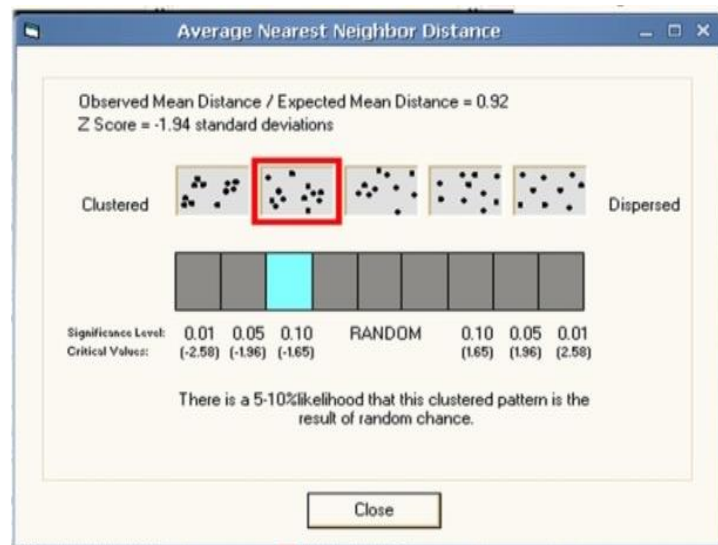

Figure 3 Average Nearest Neighbor (result)

Source: Based on Table 1, Geographic Information System (GIS)

Mean Center Analysis

Mean Center- the first step in analyzing a set of point data is to find the center, middle or average of this point distribution. This is the assumed center point for all tea shops and stands as the location reference. According to the calculated values, mean center of tea shops are found in Ward 26 in the study area. Therefore, the number of tea shops in study area is nearer to the mean center and some tea shops are relatively far from that point. It can be said that the distributions of tea shops are uneven in the study area.

Standard distance is the spatial equivalent to the standard deviation. The radius for standard distance of all tea shops is less than one mile distance and this means the maximum dispersion of tea shops is not more than one mile from the mean center. About 92 tea shops are within the range of mean center and others are dispersed outside of that distance (see figure 4). According to direction distributions, the number of tea shops are more distributed from north to south rather than distribution of tea shops from east to west.
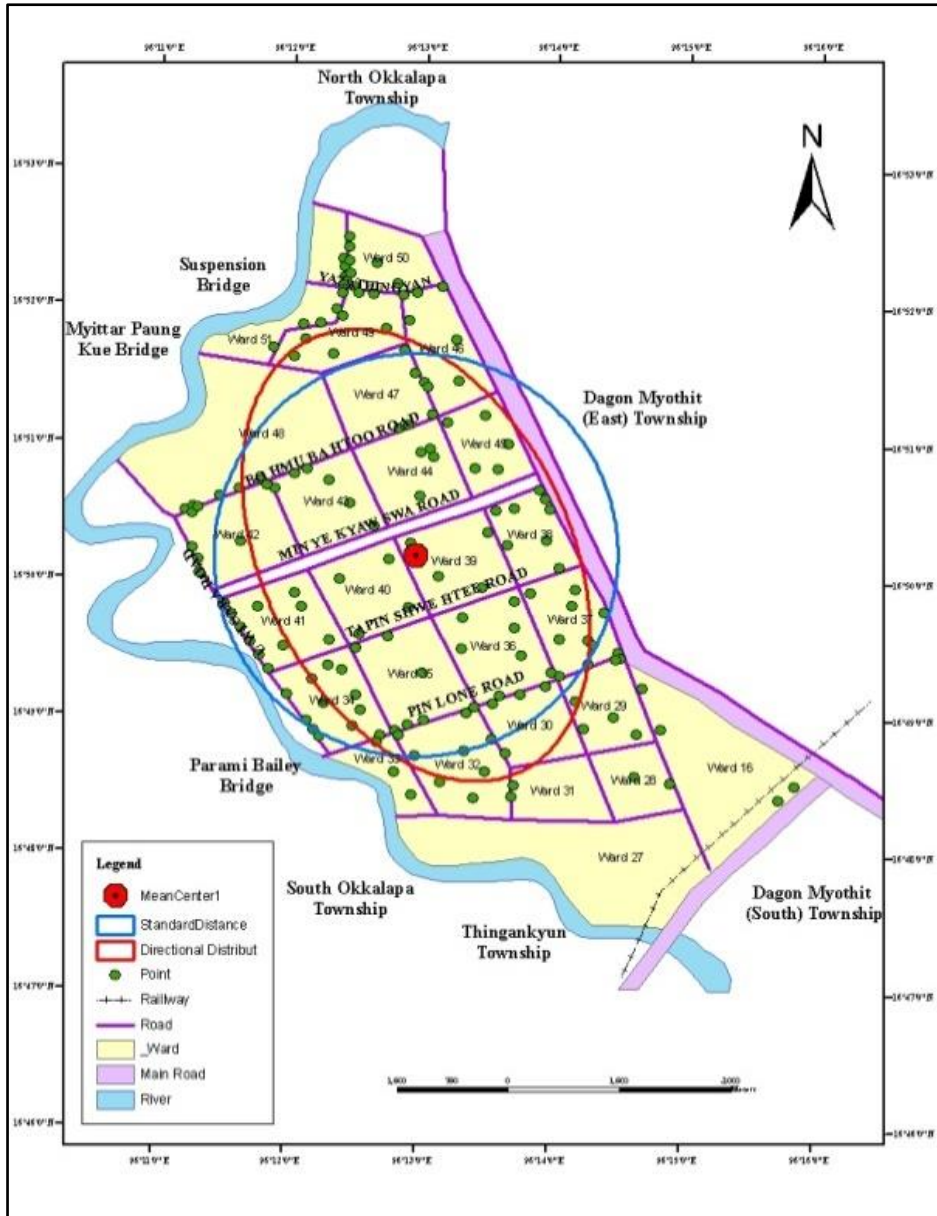
Figure 4 Mean Center, Standard Distance and Direction Distribution of all Tea shops in Dagon
        Myothit (North) Township

Source: Based on Table 1, Field Observation, 2021

Pearson's Product Moment Correlation Coefficient

        The Pearson's Product Moment Correlation Coefficient (r) is applied to analyse the
relationship between the number of population and the number of tea shops. The number of
total population and the number of tea shops are considered as variables X (population) and Y
(tea shop).

Table 2 Pearson's Product Correlation Coefficient for tea shops

	tea	population
Pearson Correlation	1	0.288
Sig. (2-tailed)		0.154
N	26	26
Pearson Correlation	0.288	1
Sig. (2-tailed)	0.154	
N	26	26

Source: SPSS, Based on Table 1

According to the calculated values 0.288 clearly implies that there is less positive correlation between the number of population and number of tea shops. Therefore, distribution of tea shop within the study area may be affected by other causative factors such as accessibility and location.

Conclusion

Dagon Myothit (North) Township is a new town which has emerged recently. Therefore, most of the tea shops are found unevenly distributed in the study area. Generally, tea shops are found in residential areas and mainly concentrated around the government office building, markets, and bus stops etc. The number of tea shops in the whole township is 118, and among them, 9 tea shops are found in ward No.34. According to the statistical and spatial analyses, the correlation coefficient for number of population and number of tea shops is +0.288 and, therefore, there is less positive correlation between population and tea shops. The distribution of tea shop is less affected upon the distribution pattern of population. The calculation of Mean Center and Standard Distance prove that 58% of tea shops are dispersed randomly within the radius of less than one mile from the Mean Center.

Although there are several variables for the analysis of tea shops, there is only considered population and extent factors. Therefore, other factors such as relative location, consumer behavior, costs and profit etc. should be considered in future researches.

The distribution of tea shops are studied from statistical data and factual material collected and supplemented and checked by field observation. According to quantitative analysis by Nearest Neighbour Analysis, the tea shops are uniformly distributed in all wards but a little more concentrated in main roads because of good accessibility, more concentrated population and nearness to the bus-stop. People are more concentrated near 35-Kyaunglan, Mandalaylan, Ma-Wa-Ta bus stops on Pilon Road; near Konpadaetha, 7/8 junction, 46 junction on Ahnawrahta Road and near Bahtoo, Mahamyaing Housing and Suspension Bridge on Razathingyan Road. Generally the northern part of the township is high in population concentration. This main road could be considered primarily as potential sites for new tea shops.

Acknowledgements

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