

Spatial structure of retail shops in Loikaw Town

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Abstract

Spatial arrangement of retail shops is one of the most important indicators in the development process of a town. To fully understand the relationship between retail structure and spatial development process of a town, Loikow (the capital of Kayah State) was selected as an example and analyzed the following points: (1) distribution pattern changes of retail shop (2) the specific characteristics of retail distribution (3) controlling factors of retail shop structure. Then, it suggests the possible retail shop structure of the future. Data used in this paper were derived from official statistics and field surveys. The analysis was conducted in two time points: 1996 and 2004. Through this paper it is become clear that there is spatial and temporal variation of retail shop distribution in Loikaw Town. These spatial distribution patterns of retail shops are related to the physical and functional development pattern of Loikaw Town. In addition, it is also depended on type and functions of each retail shop. Population which is considered as one of the most important factors in the distribution of retail shop is not significant in case of Loikaw. It is because spatial structure of retail development in Loikaw is more depended on the other towns of Kayah State than Loikaw Town itself. However, the distribution pattern of retail shops is strongly related to transportation network and distance from the city center.

Key Words: retail shop, spatial structure of town, population, transportation network

Background of Study

There are many studies related to the distribution of retail shop. War War Win (2003) examined the distribution pattern of retail shops in the Pabedan Township located in downtown Yangon. Yin Mar Wai (2003) also analyzed the retail distribution pattern of Shwepyithar Township located in the periphery of Yangon. However, they only emphasized on the some aspects of distribution pattern and the factors that control the pattern was not fully explained. They only focused on the population as a controlling factor. There should be many variations in retail shop in terms of type and functions. Even within one type of retail shop, there will be variations in size related to the spatial structure of city. There may be other controlling factors of retail

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distribution pattern rather than population. Therefore, this paper tried to examine these uncovered relationships between spatial structure of town and distribution patterns of retail shop from the case study of Loikaw Town.

Problem

Based on above back ground following problems are observed.

1. How does retail shop distribution pattern change in Loikaw?
2. Is there any particular characteristic in the spatial distribution of retail shops?
3. If it is what are the major controlling factors of these particular characteristics?

Data and Method

Some data like the number, type and location of retail shop for 1996 and 2004 were derived from official statistics. Based on these statistics field survey and interviews were conducted during December 2004 to verify the official data and to get further information about size (floor space) and number of selling goods for each retail shops.

There are many kinds of retail shops running in Loikaw. Therefore, it will be difficult to examine each of this particular type. It is necessary to re-categorize these different kinds of retail shops before analyzing their distribution.

The similar situation is also evident for delimiting the spatial regions. There are 13 wards in Loikaw Town. These wards should be re-categorized based on some criteria before conducting analysis. To understand the spatial distribution and changes, *Mean Centers* and *Standard Distance* were calculated and compared for two time periods. *Correlation method* was used to verify the controlling factors of retail distribution.

Second part of this paper described about the definition and classification of retail types and region in Loikaw Town. Geographical background of the study area was briefly explained in third section. Forth section examined the spatial and temporal changes of retail shops while current situations of retail shop distribution were analyzed in fifth section.

Factor controlling the distribution of retail shops were examined before considering the future retail structure of Loikaw.

Definition and Classification

Definition of Retail Shop

Retailing in this paper referred as “business activity of selling goods and services directly to consumers. Instead of selling products for resale, a retailer sells goods or services to individuals making purchases for themselves or for their families” (Encarta Reference Library, 2004). Thus, retail shop in this paper refers to all shops conducting above activities.

Classification of Retail Shops

Retail Shops can be divided and studied into (7) main categories, in Loikaw. They are

- (1) Food & Drink
- (2) Grocery shops
- (3) Personal goods
- (4) Fabric shops
- (5) Building materials
- (6) Services
- (7) Others

The detail description of each category is shown in Appendix (1).

Classification of Region

There are 13 wards in Loikaw. For analysis purpose these 13 wards were classified into four areas based on the amount of population density (Table 1). Area (1) includes three wards: Zayping, Shwetaung and Shansu Wards. Area (1) is the place where population density is the highest and it can be considered as town centre. Baho Market and Gan-ta-ya -wadi Market are located in that area. Area 2 includes Mingla, Lawdama and Minsu Wards while Area (3) is composed of four wards: Damayone, Minelone, Daw U Khu

and Dawnaku. Area (4) includes Naung Ya (Ka), Naung Ya (Kha) and Dawtama Wards which has the least population density.

Table (1) Population density and sub-areas in Loikaw (2004)

Ward	Area (Sq.miles)	Population	Density	Pop. Change (2004-1996)		Notes
Zaypaing	0.048	1477	30770.8	707	Area 1	Area- 0.228 Sq. miles; Population Density - 34602
Shwetaung	0.054	2708	50148.1	1142		
Shansu	0.126	2884	22888.9	-33		
Mingala	0.234	4770	20384.6	2067	Area 2	Area- 0.954 Sq. miles; Population Density- 16966
Lawdama	0.342	5150	15058.5	3457		
Minsu	0.378	5842	15455.0	2361		
Daw U Khu	0.792	9091	11478.5	3248	Area 3	Area- 1.782 Sq. miles; Population Density- 11534
Minelone	0.450	5921	13157.8	3367		
Damayone	0.180	1774	9855.6	-746		
Dawnaku	0.360	4192	11644.4	3242		
Naung Ya (ka)	2.682	8381	3124.9	3127	Area 4	Area- 3.384 Sq. miles; Population Density- 6577
Naung Ya (kha)	0.216	1688	7814.8	878		
Dawtma	0.486	4272	8790.1	694		

Source: Immigration and Man Power Department, Loikaw.

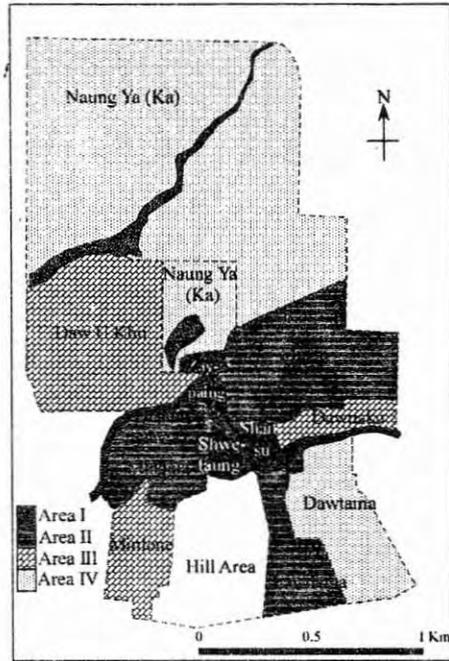


Figure (1) Distribution of population density and areas of Loikaw

Source: Based on data derived from Immigration and Man Power Department, Loikaw

Geographical Background of the Study Area

Loikaw is the capital of Kayah State. It is located between 19° 38' and 19° 43' North Latitudes and 97° 10' and 97° 15' East Longitudes. There are thirteen wards in Loikaw Town (Fig. 1). Balu Chaung flows through the center of the town, there are 6 wards on the northern side and 7 wards on the southern side of the Balu Chaung.

Loikaw is one of the most densely populated towns in Kayah State. In 1996, the population of this town was 32209 persons, with 12895 males and 19314 females. The population density of this town in 1996 was 5073 persons per square mile. In 2004, the total population of Loikaw Town was 58150 persons with 30208 males and 58150 females. The population density for the whole town in 2004 was 9160 person per square mile (Table 1). Population in the study area was increased by 25941 persons in 1996-2004 period. It is

considered that the better the local economic, social and security, the more increasing the population.

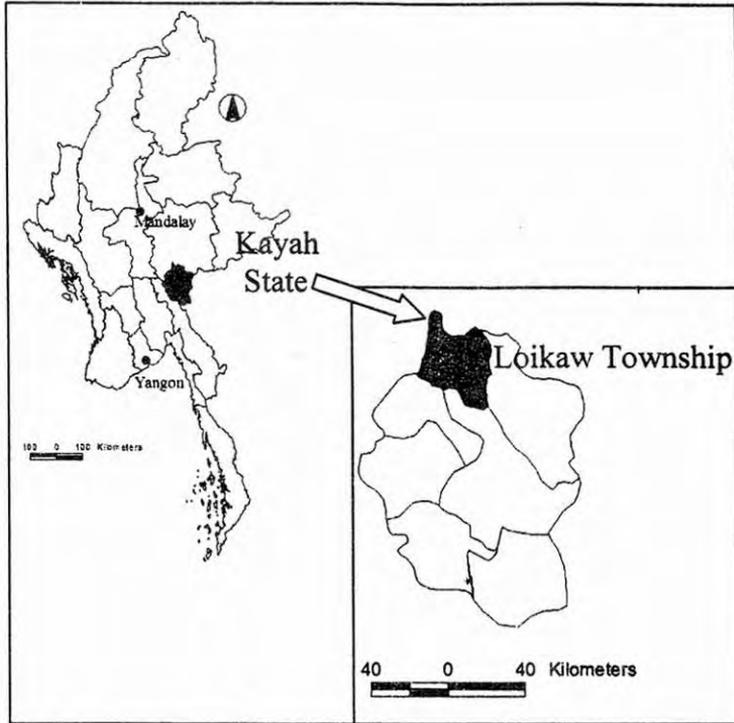


Figure (2) Location of Loikaw Township

Source: Department of Geography, Yangon University.

Change in Distribution of Retail Shop

General Changing Pattern

The total number of retail shops was 617 in 1996 and 827 in 2004. Thus, the number of retail shop is increasing 35% within the last 9 years. In addition, it can be seen that, the spatial distribution of retail shops also is shifting to the southward during the same period. Figure (3) shows the mean centers of retail shops and its standard distances. From the standard distance it can be also said that distribution become more wide spread. There are two main factors for that increasing and shifting of retail shops: increasing population by urban expansion and transportation network development of the Kayah State.

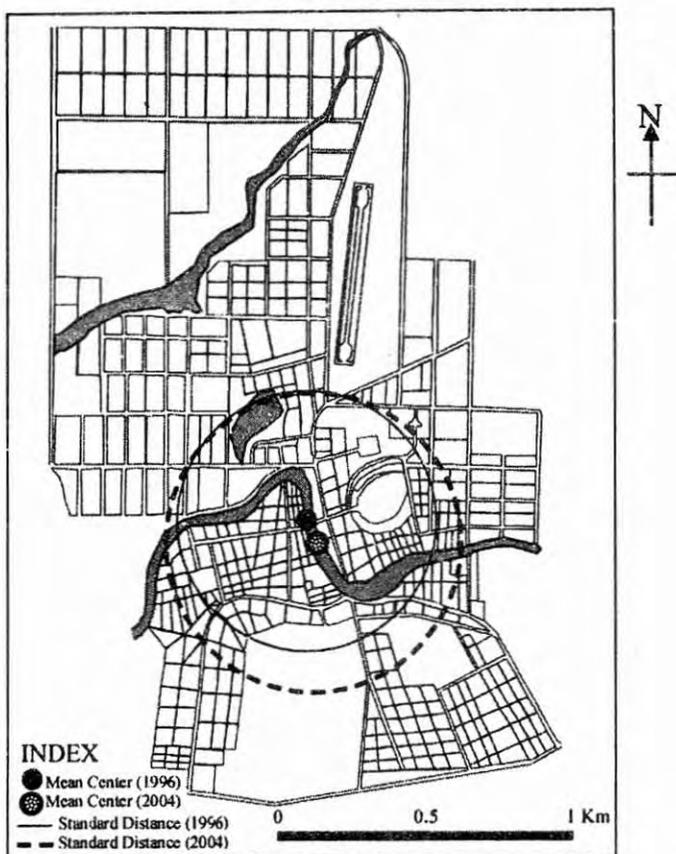


Figure (3) Changing distribution pattern of retail shops

Source: Field Survey (2004)

The population growth of Loikaw during the last 9 years had been shown in table (1). In accordance with the population growth, the number of retail shops is also increased, particularly, in the Southern wards namely Shwetaung, Zaypaing and Lawdama. Moreover, extension wards were located in the southern part after 1996. Thus, the number of retail shops is increased at that southern part and mean center shifted toward the south.

About 80% of the institutional land uses in Loikaw are found in those wards situated to the north of the Belu Chaung and the residential land uses are mostly found at the south. It can also be seen that the wards with three markets, highway bus terminal and railway station etc. are situated in the southern part. Moreover, Loikaw is the “gateways” of the Kayah State.

Among the seven townships in Kayah State, nearly all of the townships are mainly depended upon Loikaw. The demand of the customers entering especially from the southern parts of state, by taking the Loikaw-Demawso road, are seen gradually expanded the market. Based on above factors, the mean center of the retail shops is shifting towards the south during last 9 years.

Changing Pattern of Retail Shop by Type

Among the changing pattern of retail shops, grocery is the most obvious one. From Figure (4) it can be seen that the number of opened grocery shop is remarkably greater than that of the closed ones. Grocery shops are mainly selling daily used consumer goods. Consumers prefer to buy everyday use goods like vegetables, cigarettes, quid of betel, etc. not so far from their houses. Thus, the more increasing the urban population, the more increasing is the number of grocery shops selling everyday-use goods. In the changing pattern of grocery shops, the amount of investment might be played an important role. A grocery shop such as vegetable, quid of betel, etc. can be opened with a minimum investment. Thus, 50% of the total number of grocery shops is quid of betel and snack food shops.

With the increasing urban population, the number of food and drink shop also increased. Food and drink shops generally sell prepared food and drinks for immediate consumption. Among the newly opened shops, majority are *Monhinga* (Myanmar traditional food with rice noodle and fish-paste), noodle salad and cool drink which can function with little investment. On the other hand, there is a little change in number of restaurant.

People's dressing-style and preference are changing according to the current time. In accordance with the adoption of market economy policy, modern fashion shops and traditional textile shops are markedly increased since 1988. Among the newly opened personal shops, medicine, cosmetic, electrical shops are the most distinguished.

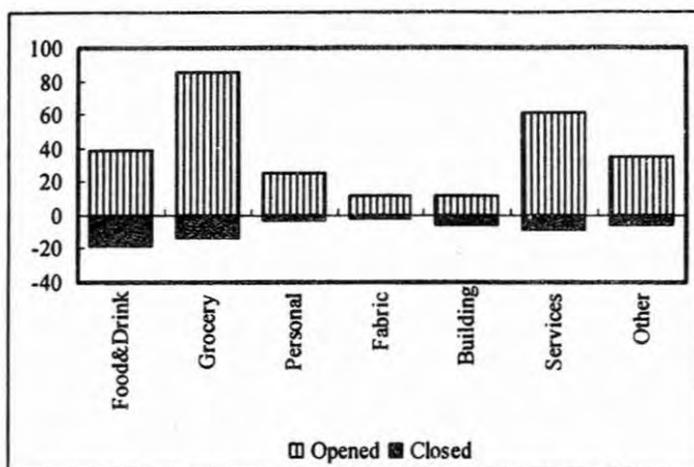


Figure (4) Newly opened and closed retail shops in Loikaw Town

Source: Field Survey (2004).

There are interrelationships between development patterns of retail shop. In the newly opened services, 50% are Karaoke and computer-copier shops. The number of Karaoke shops increase from 2 in 1996 to 28 in 2004. As the number of Karaoke shops have been increased, the number of Video tape and VCD selling and rental shops also increased. Moreover, nearly half of the total number of Karaoke shops is found together with opening of other shops like the quid of betel and cigarettes, snack food, etc.

With the increasing population of Loikaw, the use of bicycles and motorcycles become more and more popular. As a result, the number of bicycles and motor cycles repairing shop, bicycles and motor cycles spare parts shops (others) are increased immediately.

Spatial Changing Pattern of Retail Shop

There are 13 wards in Loikaw and changing patterns of retail shops within these areas were studied in terms of four areas (See Fig. 1). Newly opened and closed retail shops during 1996 and 2004 were analyzed to understand the changing pattern of the retail shops.

Various types of retail shops were concentrated in Area (1) where there were 60 opened retail shops and 14 closed retail shops. About 70% of the open was personal goods, services and building materials shops. Majority of those shops were located along the No. (1) main Road. Especially in the

region, along the Gan-tar-ya-wati Bridge Road, the vicinity of Baho Market and Gan-tar-ya-wati Market, the personal goods shops such as gold shop, medicine shops, electrical goods shops are mostly concentrated along that road.

Gan-tar-ya-wati Road is a main road that joins the two main roads, No (1) Main Road which is running along the northern part of the Belu Chaung and No .2 Main Road which is located at the southern part of the Balu Chaung. Most of the closed shops were grocery, eating and drinking shops. These shops are replaced mainly by the personal and the services shops.

Area (2) has the most dynamic changing pattern among the four areas. Because Area (2) is the nearest region to Area (1) and it is located along the main road. After 1996, regional security and the transportation have greatly improved and Loikaw Town is developing more and more, especially in the town center. Since area of Area (1) is limited, it has less chance to open new retail shops. Thus, new retail shops are opened in the Area (2) which is very close to the Area (1). There were 105 opened and 17 closed retail shops in this area. Majority of opened shops were grocery and services. The fabric and the personal goods retail shops can be found along the No. 2 Main Road and the services shops can be found mostly around the market and bus terminal.

Area (3) which is relatively far from the downtown has various types of retail shops. Most of the newly opened shops were food and drink and grocery shops. Services shops were mostly found along the Loikaw-Demawso Road. In Area (3) personal goods and fabric shops were very rarely found. During the 9 years period, there are 72 opened and 16 closed retail shops in this area.

Changing of retail shops are the least in Area (4). There are 32 opened and 12 closed retail shops. Since this area is far from the downtown, the market, bus terminals, etc. nearly 80% of the opened shops are grocery. The grocery shops which are selling the goods that are necessary for the low income customers are mostly found in the Area (4).

Current Spatial Pattern of Retail Shop

Spatial Variation of Retail Shop by Type

In 2004, there were 258 grocery shops and 127 food and drink shops and their distribution pattern could be classified in accordance with the urban expansion. Dispersed location and large number of grocery are the result of two factors: (1) the nature of the shop that generally needs little investment (many are small shops) and (2) the nature of goods selling is daily consumer goods (it is especially true for lower income residents).

Based on the different amount of investment, retail shop could be divided into static and dynamic natures. The shops with large investment are static and their distribution patterns is somewhat clustered. The shops with little investment are dynamic in nature and they have dispersed distribution pattern. Market area of former is rather regional while the latter is local in nature.

Table (2) Spatial distribution of retail shops by type

	Grocery	Food & Drink	Personal	Fabric	Building Materials	Services	Others	Total
Area 1.	48	35	46	23	18	85	25	280
Area 2.	80	46	25	16	11	48	32	258
Area 3.	80	26	7	2	14	41	17	187
Area 4.	50	20	0	1	2	19	10	102
Total	258	127	78	42	45	193	84	827

Source: Field Survey, 2004.

Among the various types of grocery, and food and drinking shops. 80% are dynamic type and include such shops as dry goods, Monghinga. vegetable, quid of betel, etc. Each of them can move and open easily in every suitable place. Therefore, food and drinking shops, and grocery shops are of footloose and hence have dispersed distribution pattern.

Majority of the personal goods and fabric shops are concentrated in the town center. In nature, these shops need much investment. Such shops are static and sell the goods which are not necessary to buy everyday. Thus. it need wider market area and good accessibility. As a result, it is impossible to open in the periphery of the town.

Distribution of fabric shops are found in linear pattern along the main road and on either side of the Belu Chaung. From the nature of shop, the sellers of fabric shops have to attract customer with attractive shop decoration. So the shops are opened in beautiful layout and concentrating along the main road where large numbers of people are passing.

Personal goods shops are concentrated in the surrounding areas of Baho Market and Gan-tar-ya-wadi Market and selling specialized goods like medicine, electronic goods, gold and jewelry, etc. In addition, same kinds of goods are selling in grouping to get the advantage of *agglomeration economy*.

Building material shops have both clustered and dispersed distribution patterns. In the town center, the building material shops selling building material, like corrugated iron sheets, cement, etc. are clustered. On the other hand, building materials shops selling wood and timber, bamboo, bricks, concrete slabs, etc. are found in dispersed location. It is due to the fact that timber, bamboo, etc. need small amount of investment and large space while corrugated iron sheet and cement need relatively small space and large capital investment. In 2004, although there were only (45) building materials shops, the standard distance is relatively large as the building material shops are distributed according to their nature.

Distribution pattern of services and other shops is somewhere between the clustered and dispersed pattern due to their type of function. For example, the used car spare parts shops and TV, and services shops can be found around the market area while bicycle and cycle repairing shops can be found on either side along the roads. Some services like sewing can be found in every ward.

Spatial Variation of Retail Shop's Size by Type

Generally, different retail shops type have different size. Even within the same type, the size is different based on the area that they located. Figure (5) shows the different types and sizes of retail shops according to their respective area. In Area (1), the size of the retail shop is smaller than in Area (2). Then, the size of the retail shops decreased from Area (2) to Area (4). It is because Area (1) is center of the town and land value is highest in the town. On the other hand, Area (2) is not too far from center of the town and have relatively cheap land price. Thus, the size of the retail shops in this area is larger. Area (3) and (4) are far from the town center and population

(customer) is also sparsely distributed. Thus, it is not possible to open large shops in these two areas.

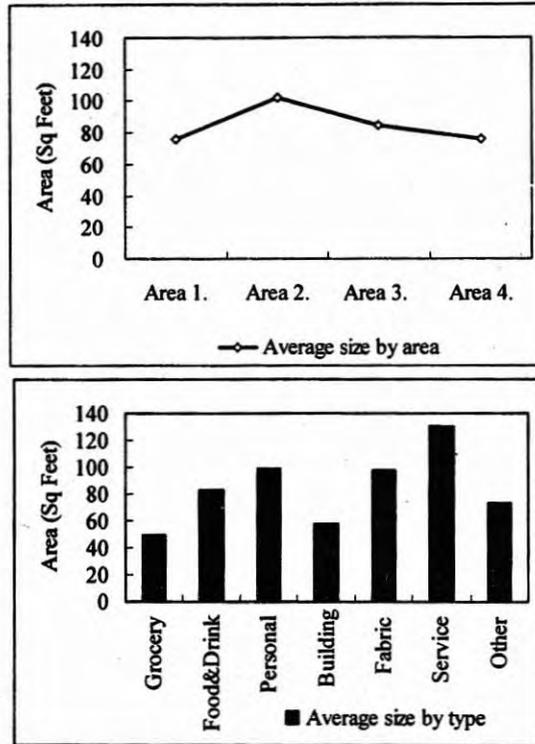


Figure (5) Average size of retail shop by area and type

Source: Field Survey (2004).

Of the type of retail shops, services, personal and fabric have relatively large size while grocery and building material shops have smaller size (Fig. 5). However, it will be varied even within the same type of retail shop related to nature of shop and locational distance from town center.

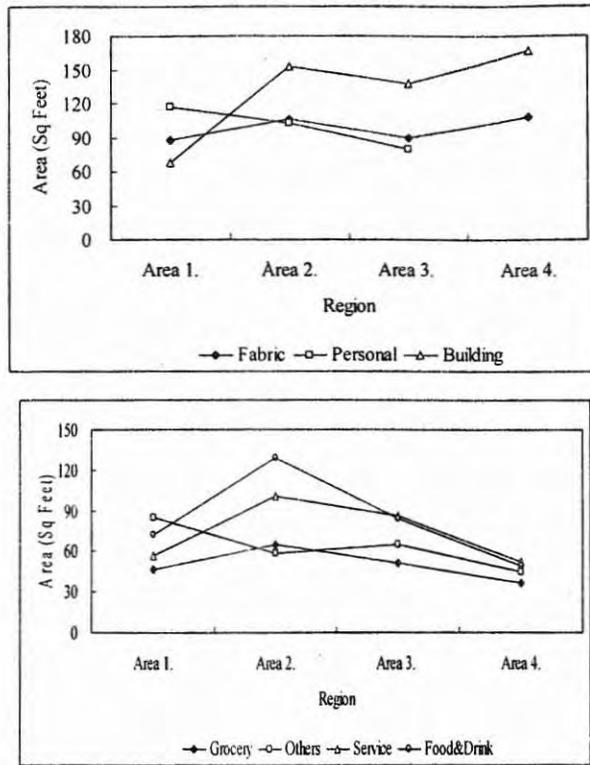


Figure (6) Spatial variation of shop size by each retail type

Source: Field Survey (2004)

Figure (6) shows spatial variation of retail shop in size by type. Grocery, food and drink, and service shops have smaller size as many of them are located in the town center. But it increased in size in Area (2) and again decreased with distance from town center (Area 3 & 4). Size of the other shops continuously decreased from town center to periphery (Area 4). Fabric and building materials shops have different characteristics in terms of size. They have relatively smaller size in the town center and increased their size in Area (2) then decreased again in Area (3), before become increased again in Area (4). As mentioned before there are two types of building materials with different nature of value and space requirement. These different natures created spatial variation of size. Shops selling personal goods only found in Area (1), (2), and (3). The size of it is gradually decreased from the town center. It is due to agglomeration economic effect. Since personal goods are not necessary to buy everyday, it needs wider market area. Alternatively,

shops located in the town center that has wider market area and more develop (wider floor space) than peripheral areas.

Factors Controlling the Distribution of Retail Shops

As controlling factors of retail shop distribution, population, transportation network, and nearness to the town centers were considered.

Population

To examine the relationship between population and distribution of retail shop, population and number of retail shop for 13 wards are analyzed by *Pearson's Correlation Coefficient Method*. Correlation coefficient between Number of retail shops and number of population is (0.04). This result reflects very little relationship between the distribution pattern of retail shops and population. This result is quit different from the previous results of Yin Mar Wai (2002) and Wa Wa Win (2002) which indicate high relationship between population and number of retail shops. The result of present study may be explained by two facts: the position of Loikaw in Kayah State and the shopping habit of customers in that town. The former is that Loikaw is the gateway of the whole state. The rest of the other 6 townships in Kayah State depend upon Loikaw town. The customers from other 6 townships do shopping in Loikaw. Therefore, the market area of the retail shops in Loikaw depend both on the town itself and others towns. Since Loikaw and other townships are connected by roads and buses, the commercial activities are greatly developed near the bus terminal and municipal markets (town center). On the other hand, some peoples were moved out to the periphery due to extensions of new ward after 1996. In general, although town population is dispersed, economic activities are concentrated in the town center. Result is that "there is no relationship between population and number of retail shop in Loikaw Town".

The later fact is related to the traditional five-day-market system still practiced in Shan-Kayah regions. The retailers do selling by cars travel around on five-day-market of each town in that region. On every five-day-market of Loikaw town, the customers and retailers from various region concentrate there and various kinds of goods can be sold and buy there. For example, *Ngapi*, dried fishes, etc., from Inlay region, and green-tea, fermented-soya-bean, garlic, dried chilies etc. from Aung Pan, are sold at fairly cheaper prices.

So, the customers buy and collect the goods as much as they want at every five-day-market. Thus, interdependencies between customers and retailer of Loikaw are weaker than interdependencies between Loikaw retailers and customer from other townships of Kayah State.

Transportation

Among the controlling factors of the retail shop distribution pattern in Loikaw Town, transportation network should be one of the major factors. To examine the relationship between roads network and retail shop distribution, roads in the towns were classified into three types: main roads, secondary roads and branch roads. However, only main road and secondary roads were consider for the analysis (Fig. 7). Then, accessibility indices (Links and Step) are calculated for each road segment. If a road segment has more direct link, the more accessibility it has since it can go more conveniently to the other segment of network. On the other hand, the smaller the number of step that need to go to the farthest segment of network, the better the accessibility of this road segment since the segment could be easily access from any part of the network (Lee and Wong, 2000).

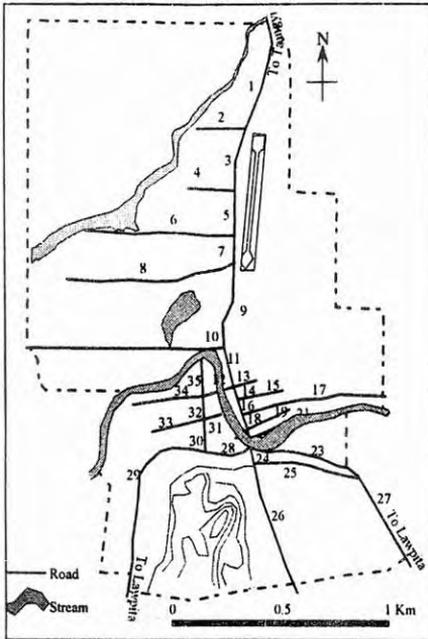


Figure (7) Accessibility and distribution of retail shops in Loikaw

Source: Field Survey (2004)

Id	Link	Step	Shop No.
1	2	12	0
2	2	12	3
3	4	11	0
4	2	11	3
5	4	10	1
6	2	10	5
7	4	9	3
8	2	9	6
9	4	8	32
10	4	8	12
11	5	7	18
12	6	7	56
13	3	7	10
14	5	6	12
15	2	7	10
16	4	7	11
17	2	8	22
18	4	8	15
19	2	9	21
20	4	9	13
21	2	10	18
22	5	10	14
23	5	11	29
24	5	11	8
25	4	12	10
26	2	12	12
27	2	12	6
28	5	11	12
29	2	12	33
30	4	12	12
31	3	9	10
32	6	8	39
33	3	9	20
34	3	8	22
35	5	9	31
36	2	9	30

Source: Calculated from the map.

The correlation between number of shops and the number of steps (required to reach the furthest parts of the set work) is -0.34 (significant at the 0.05 level). Therefore, the number of shops is inversely proportional to the number of step. The larger the number of step the lower the accessibility of that road segment and the less number of shops can be found on that road.

The correlation between number of shops and number of link is +0.36 (significant at the 0.05 level). It mean that the more direct link a road segment has the larger number of retail shops are located in that road segment. It could

confirm above results of correlation between number of step and retail shop. Therefore, we could clearly conclude that *the distribution patterns of retail shops are closely related to the transportation network of Loikaw Town.*

Nearness to Town Center

Nearness to the town center should be one of the controlling factors on the distribution pattern of retail shops. To analyze this point, average distance from each ward (centroid) to town center (Mean center of all retail shops) was calculate and counted number of shop included in respective ward before calculating shop density (Table 3).

Table (3) Distance from town center and density of shop

Ward	Density of Retail Shop	Density of Retail Shop (Log)	Distance from Town Center
Damayone	166.67	2.22	0.37
Dawnaku	138.89	2.14	0.5
Dawtama	80.25	1.90	1.25
Daw U Khu	82.07	1.91	0.62
Lawdama	96.49	1.98	0.55
Minsu	309.52	2.49	0.47
Minelone	93.33	1.97	0.7
Mingala	461.54	2.66	0.35
Naun Ya (ka)	19.39	1.29	0.53
Naun Ya (kha)	50.93	1.71	1.2
Shansu	714.29	2.85	0.15
Shwetaung	1611.11	3.21	0.1
Zayping	2145.83	3.33	0.2
Skewness	1.95	0.39	1.03

Source: Distance are calculated based on the centroid of each ward and mean center of all retail shops.

The correlation between shop density (use log value since original values have high skewness) and distance from the town center is - 0.70 (significant at the 0.01 level). It means that if the distance from the town center increases, the number retail shop will decrease. Therefore, it is very significant that the development of retail shops is related to the distance from the town center (defined by distribution of retail shop). Retail shops are concentrated near the market in the down town area and dispersed with the growing distance from the town center.

In general, the distribution pattern of retail shop in Loikaw towns is controlled by the transportation pattern and nearness to the town center. Population which is one of the important controlling factors in previous studies of War War Win and Yin Mar Wai are not too effective in case of Loikaw.

Conclusions and Future Pattern of Retail Shop

Through this paper it is become clear that there is spatial and temporal variation of retail shop distribution in Loikaw Town. These spatial distribution patterns of retail shops are related to the physical and functional development pattern of Loikaw Town. In addition, it is also depend on type and functions of each retail shop.

Population which is considered as one of the most important factors in the distribution of retail shop is not clear in the case of Loikaw. It is because spatial structure of retail development in Loikaw is more depend on the other towns of Kayah State than Loikaw Town itself. However, the distribution pattern of retail shops is strongly related to transportation network and distance from the city center.

The future location pattern of retail shops in Loikaw can be speculated by studying spatio-temporal distribution pattern of retail shops. Retail shops are concentrated around Area (2) during 9 years period (1996 to 2004), (Fig. 8).

As the Loikaw Town is the gateway of the Kayah State, other 6 townships of state are mainly depended upon Loikaw. During the less security time, the customers of these townships come to Loikaw and bought the goods only in five day market. After 1996, insurgent national races had entered into legal fold. As a result, the security and the transportation have been developing and the interdependency of the town within state has been

improved. Thus, the customers from other towns come to Loikaw and buy goods everyday.

After 1996, newly opened retail shops are concentrated in the downtown and its nearest region, especially along the No (1) and No (2) Main Roads which are connected with that area. Area (1) is a market area and the shops density is the highest. As this area is small, it has little chance to open more new shops. Therefore, a number of newly open retail shops are found in Area (2) which is the nearest area with Area (1) and also has the good transportation place and relatively wider space (Fig. 8). The new retail shops are opened and old ones expand their market area along the main road which connects with that market especially for the customers, entering from the southern part of Kayah State, by using Loikaw-Demawso Road.

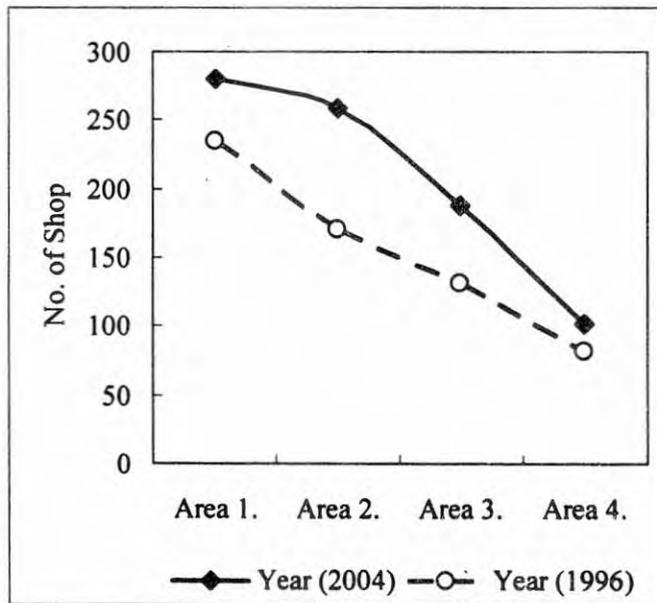


Figure (8) Spatio-temporal distribution of retail shop

Source: Field Survey (2004).

Area (3) is a nearest region with Area (2) and contains the wards which are situated at the east edge and west edge. As the Area (3) is far from the main road, the birth of retail shops depends only on the customers within its wards. As the Area (4) is the periphery region, the probability of concentrating the future location pattern of retail shops is very little.

Therefore, as long as the importance of Loikaw is being existence and being the gateways of Kayah State the retail shops will be concentrated in the downtown area, especially in Area (2) in the near future.

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Appendix 1. Classification of retail shops

Eating and Drinking- Tea shop, coffee shop, beer station, cold drink shop, liquor house, restaurant, *Kayah Khaung Ye* (traditional liquor) shop, rice and curry shop, *Monhinga* (rice noodle with fish paste) shop, *Myee Shay* (traditional Shan food) shop, noodle salad shops, and snack shop.

Grocery Shops- Grocery shop, rice and edible oil shop, vegetable shop, flower shops, firewood and charcoal shop, *Ngapi* and dried fish shop, tea leaf pickle shop, betel and cheroot shop, seasonal fruit shops.

Personal Goods Shops- Gold shop, medicine store, cosmetic stores, hardware shops, monk's robe and utensils shop, pottery shop, slipper shop, toy shop.

Fabric Shops - Textile shop, fashion shop, clothes shop.

Building Material Shops- Timber shop, bamboo shops, brick and sand shop, ceiling plate shop, marble tiles shop, etc.

Services - Beauty saloon, barber's shop, photo shop, lottery shop, pawn shop, photo copy service, clinic, car workshop, car washing, T.V and radio repairing service, bicycle service, Karaoke lounge, VCD and book shops.

Others Shops- Furniture house, agro-chemical shops, publishing house, recycle mental shop, tin smith, animal food shops, horse and bullock cart's spoke and wheel making shop, etc.