SPATIAL ANALYSIS ON THE PATTERNS AND REASONS OF MIGRATION IN A SATELLITE TOWN, YANGON REGION

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ABSTRACT: Migration in geography usually refers to the movement of humans from one place to another. Migration is increasingly important because there is no non-migrated region in the world. Every region has migration more or less. Why do people migrate? It has many reasons. Reasons are different and controlled by various variables. The aim of the paper is to study the patterns of migration before and after 2000. The objective of the paper is to find out the reasons for migration in an urban area of a satellite town near the capital city. To study the aim and objective of the research, field survey was conducted in 2019 in Thanlyin Town, located on the other side of Yangon City and divided by Bago River. Thanlyin Town has 17 wards. Ten wards are taken as the sample. Proximity analysis is used to discover the importance of location and the proximity relationship with migration. The output information is shown by map and graphical presentation. Point distance is calculated to look at the reasons. The correlation results of point distance are between +0.22 and +0.44. These results show that migration is not the distance reason alone. Partial data are between +0.4 and +0.6. These two factors prove that migration is based on social, economic and geographic features of the area. Planning projects are major drivers for the development of a satellite town like Thanlyin.

1. INTRODUCTION

To study the number of migrants to a satellite Town and its migration reasons, Thanlyin Town is selected as the study area. It is located between north latitudes 16° 40´ and 16° 59´, and between east longitudes 96° 17´ and 96° 25´ (Figure 3.1). It is very close to Yangon City. However, its population density is lower than that of Dala Town which is also located on the either side of Yangon City and divided by Yangon River. The researcher wants to know the reasons for migration to a satellite town. Migration data are analyzed on the basis of two periods – before 2000 and after 2000 because Thanlyin-Kyauktan Regional Development Plan was started in 1989 and many universities were opened before 2000. The reasons for migration are the causes of socio-economic conditions as well as geographical features (Wright and field survey). Researchers want to know which reasons are more important, or they are complicated. The paper has five parts – the first one is introduction, the second is data and methodology, the third one is research design and the fourth is result and discussion, and the last is conclusion.

1.1 Aim and Objective

Aim

The aim of the paper is to study the patterns of migration before and after 2000.

Objective

The objective of the paper is to find out the reasons for migration in an urban area of a satellite town near the capital city.

2. DATA AND METHODOLOGY

Secondary data such as population data and base map are recorded from General Administrative Office at Thanlyin Town. Primary data are collected by field survey in 2019. Qualitative and quantitative data are needed to answer the reasons for migration to a satellite town (Kothari, 2004). Therefore, questionnaire form is structured with two data types.

Thanlyin Town has 17 wards. Migrant people in ten wards are interviewed. 12 households in each ward are interviewees. Total sample households are 120.

For quantitative data, statistical analysis techniques such as bivariate and partial correlations and proximity analysis are used to test relationships between variables. For qualitative data, thematic analysis (inductive approach) is applied to find out migrant people's opinions and experiences in host and destination places (Figure 2.1).

2.1 Research Design

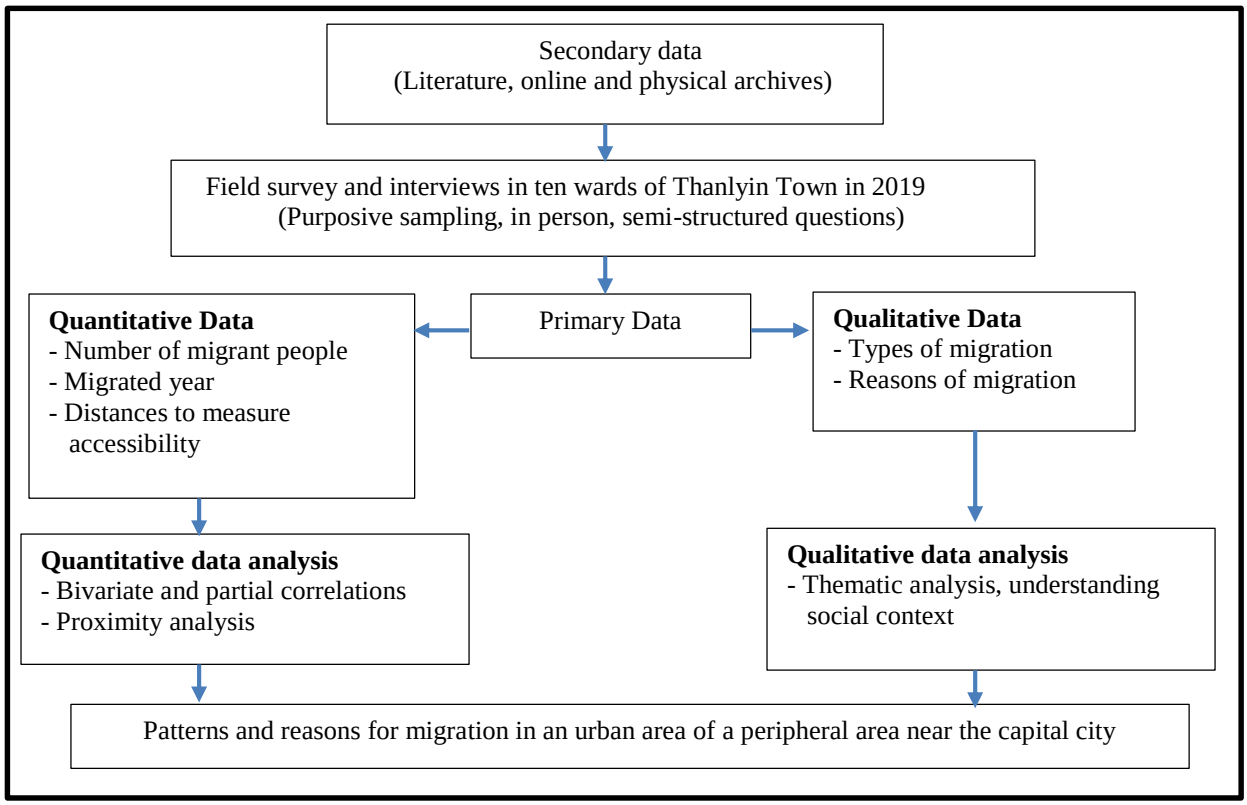

Figure 2.1. Flow chart for the study

3. RESULT AND DISCUSSION

Human capital is a mobile asset providing a gateway for a better quality of life (Schapiro, 2009). Human migration includes the movement of people from one place to another. It is a geographical process (Wright, 2016). There are many types of migration in the literature. In this study, three types of migration are considered.

Thanlyin Town comprises seventeen wards. Ten wards are selected as the study area on the basis of the distribution of the wards – northern, middle and southern.

The area of the town is 15.390 sq. km (3803 acres). It is located on the either side of Bago River (Figure 3.1). Before the opening of the Yangon-Thanlyin Bridge No.1 people had to use the boats and ships to across the river. After the opening the bridges, the number of population in the town increases due to natural increase and migration.

Housing value in this town is lower than that of the townships in Yangon City. This is one reason to migrate people to the town.

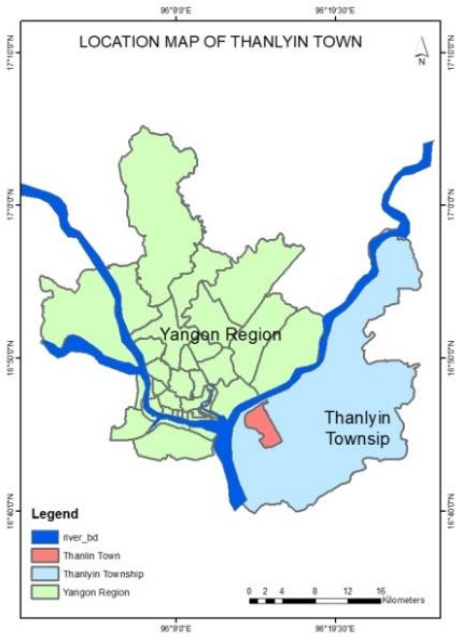

Figure 3.1. Location Map of Thanlyin Town
Source: Base Map is from Yangon City Development Committee
Note: Thanlyin Town is illustrated with pink color.

3.1 Types and Reasons of Migration

Types of migration are classified according to a range of variables. This classification is based on "Introduction to Migration [Geography] reference" and the need of field survey in 2019. In this study, the researcher points out three types of migrations. They are migration based on distances, migration based on accessibility and migration based on motive. It is worth discussing these interesting facts revealed by the results of qualitative and quantitative analyses.

3.1.1 Migration based on distances

Intra-ward migration: Intra-ward migration means movement within the ward, e.g. movements between the same wards. This type of migration is only 8.5%. Reasons of migration are expressed in term of continuing the education, the need of better health care, citing family-related motives and the characteristics of the host economy.

Inter-ward migration: It means moving house within the town, e.g. movements among one ward to another ward. Rural from nieghbouring town to urban migration also includes in this category. 29.6% of migrant people are found in this type of migration. Migrant people do so mostly for economic reasons, 39% and education reason is 12%. People migrate from the near villages to Thanlyin Town where wages are higher and more jobs are available.

Regional scale: It includes moving within a country from one township/ town to another and migration from another states and regions. Migrant people are from 16 townships among 44 townships in Yangon Region. Migration is 49.3%. The biggest migration is from Kyaunktan and Thaketa townships. The other large migrants are from North Okkalapa and Dawbon townships. Social and economic reasons of migration are selling an inherited house, quiet place and economic opportunity.

Migrant people are also from other regions of the country: Mawlamyine, Ayeyarwady, Magwe and Bago regions. Percentage of the migrant is 12.6. Near school for children is one of the reasons. Cheap housing cost is also a major reason.

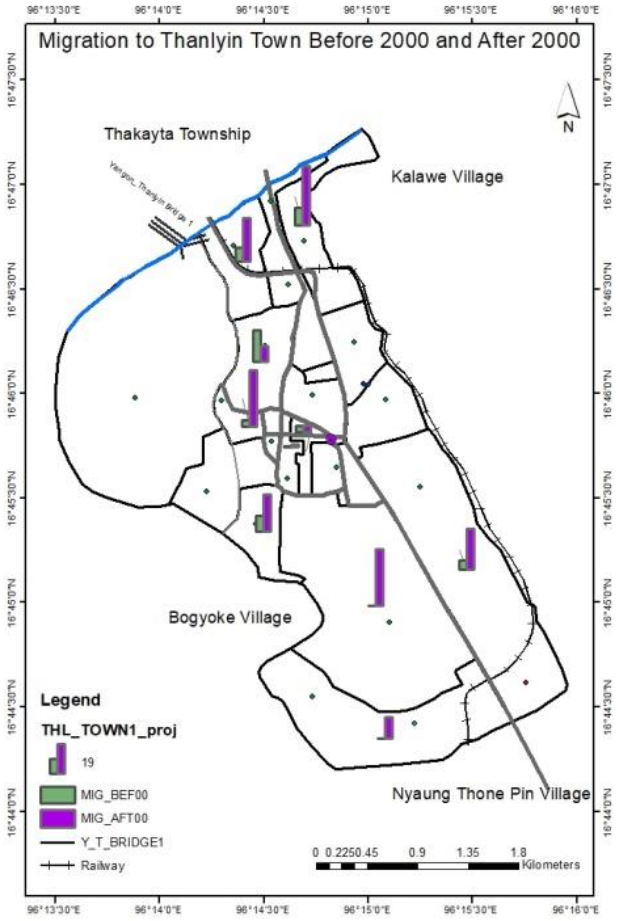

Figure 3.2. Migration in Thanlyin Town before 2000 and after 2000
Source: Field survey in 2019

After 2000 migrant survey counted a larger number of migrants than before 2000 for the developmental projects in this town. Myohaung East and Myoma North townships have the high number of migration. This is because of their location reason. The former is located near Yangon-Thanlyin Bridge – close proximity to the outlet of Yangon. The latter is in the central part of the town (Figrue 3.2). Different type of migration pattern is found in the Daraga ward. Daraga ward has the highest number of migrant people before 2000 and it has very few migrants after 2000. This ward is mainly Islam dominate.

3.1.2 Migration based on accessibility

Migration is the family-decision making and the new economics of labour migration (Hagen, 2008). The migrants made their decision based on proximity coupled with access to basic facilities, like distances from the markets, from schools and universities for education, and transport infrastructure; distances from the major transportation modes such as land bridges and main roads.

Distances from the markets: There are 6 markets in Thanlyin Township. Markets are one of the attractive reasons for migration. The distances between wards and markets are calculated by the use of point distance tools. It is shown in Table 3.1. The correlations of the variables are from + 0.22 to +0.44. This indicates that migrants may come for more than one reason. Therefore, other controlling factors are needed to consider.

If control variables are the distances of two bridges from the studied wards, the partial correlation coefficients are from +0.4 to +0.6. This reveals that migration has complicated reasons. Partial gives clearly better results than bivariate correlation (Table 3.2).

Table 3.1. Bivariate correlation

Correlations

		POP_2014	MIGRAT_19	MIG_BEF00	MIG_AFT00	DIS_B1_KM	DIS_B2_KM	DISTANCE_YCDC_KM	DISTANCE_TTU_KM	DISTANCE_MMU_KM	DISTANCE_EYU_KM	DISTANCE_AHMUHTAN_KM	DISTANCE_AUNGCHAN_KM	DISTANCE_KANNA_KM	DISTANCE_MYOMA_KM	DISTANCE_NANTHARKONE_KM	DISTANCE_THUAKTAWOKEPHO_KM
POP_2014	Pearson Correlation	1	.486	.229	.379	.138	-.170	-.108	-.063	.009	-.105	-.010	.032	-.020	.758*	.345	.334
	Sig. (2-tailed)		.154	.525	.279	.703	.639	.767	.863	.981	.772	.979	.929	.956	.011	.329	.346
	N	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
MIGRAT_19	Pearson Correlation	.486	1	.390	.878**	-.277	-.339	.269	.323	.344	.306	.329	.346	-.328	.439	.215	.216
	Sig. (2-tailed)	.154		.266	.001	.439	.338	.453	.363	.331	.390	.353	.328	.356	.204	.551	.549
	N	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
MIG_BEF00	Pearson Correlation	.229	.390	1	.015	-.636*	-.618	.331	.637*	.646*	.600	.623	.648*	-.650*	-.135	-.423	-.414
	Sig. (2-tailed)	.525	.266		.968	.048	.057	.349	.048	.044	.067	.055	.043	.042	.711	.224	.235
	N	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
MIG_AFT00	Pearson Correlation	.379	.878**	.015	1	-.109	-.204	.117	.145	.178	.117	.140	.172	-.160	.482	.293	.291
	Sig. (2-tailed)	.279	.001	.968		.764	.572	.748	.690	.622	.747	.699	.635	.659	.158	.411	.415
	N	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

Source: Figure 3.3 and 3.4

Table 3.2. Partial correlation

Partial Correlations

Control Variables			MIGRAT_19	DISTANCE_YCDC_KM	DISTANCE_TTU_KM	DISTANCE_MMU_KM	DISTANCE_EYU_KM	DISTANCE_AHMUHTAN_KM	DISTANCE_AUNGCHAN_KM	DISTANCE_KANNA_KM	DISTANCE_MYOMA_KM	DISTANCE_NANTHARKONE_KM	DISTANCE_THUAKTAWOKEPHO_KM	POP_2014
DIS_B1_KM & DIS_B2_KM	MIGRAT_19	Correlation	1.000	.406	.450	.586	.368	.319	.396	-.249	.553	.596	.594	.547
		Significance (2-tailed)		.318	.263	.127	.369	.442	.332	.552	.156	.119	.121	.161
		df	0	6	6	6	6	6	6	6	6	6	6	6
	DISTANCE_YCDC_KM	Correlation	.406	1.000	.917	.902	.948	.921	.829	-.940	.866	.895	.900	.742
		Significance (2-tailed)	.318		.001	.002	.000	.001	.011	.001	.005	.003	.002	.035
		df	6	0	6	6	6	6	6	6	6	6	6	6
	DISTANCE_TTU_KM	Correlation	.450	.917	1.000	.960	.989	.970	.934	-.860	.721	.776	.778	.781
		Significance (2-tailed)	.263	.001		.000	.000	.000	.001	.006	.044	.024	.023	.022
		df	6	6	0	6	6	6	6	6	6	6	6	6
	DISTANCE_MMU_KM	Correlation	.586	.902	.960	1.000	.935	.930	.943	-.761	.842	.884	.884	.838
		Significance (2-tailed)	.127	.002	.000		.001	.001	.000	.028	.009	.004	.004	.009
		df	6	6	6	0	6	6	6	6	6	6	6	6

Source: Figure 3.3 and 3.4

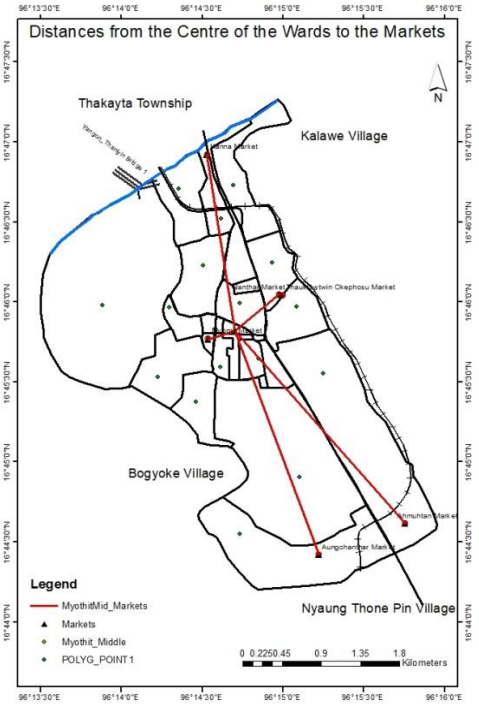

Figure 3.3. Distances from the centres of wards to the markets

Distances from universities and bridges: To find out the most common reason to relocate, the distances between the wards and universities are calculated and their relationships are between +0.27 and 0.34. It indicates that other factors are needed to consider. When the bridges which are across Bago River connecting Thanlyin and Yangon are used as the controlling factors, the correlation coefficients rise from +0.37 to +0.59.

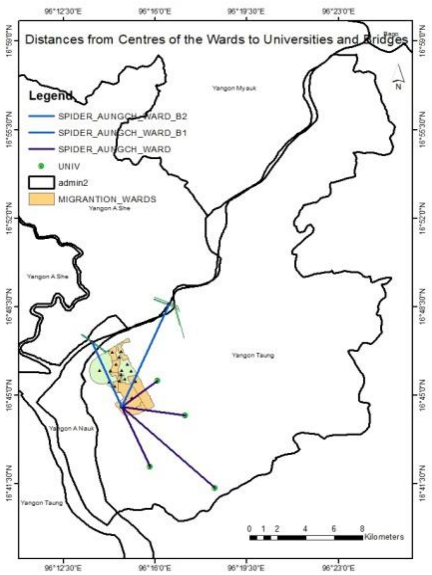

Figure 3.4. Distances from the centres of wards to universities and the bridges to across Bago River

Distances from the near the main road/ How a geographical feature influences the migration: When comparing the results of two correlations mentioned above, it is still necessary to continue to study the other reasons. What is the shortest distance between roads from the wards; accessibility of the wards? Proximity analysis can answer this.

Proximity analysis calculates distance and additional proximity information between the input features and the closest feature in another layer or feature class. Five wards are more accessible than the rest. The most accessible is Myothit Middle Ward located at the centre of the town. However, its migrant number is the least. This is a reason that accessibility alone is not the major factor. The second one is Mythit East also located at the centre and its migrant number is the highest. These situations must have the complicate reasons. The least accessible is Ahmuhtan Ward located on the southeastern part of the town. However, its migrant number is the high. Ahmuhtan is located on the Thanlyin-Kyauktan Main Road. According to the findings of proximity result, the researchers have to find out other variables. These can be clearly seen in Figure 3.5 and 3.6.

The relationships between the location and migration are very interested for the mentioned above findings. The correlation between the migration and accessibility are +0.567. The high degree of correlation is found between the migration and population number. The coefficient is +0.784 (Table 3.4). Many variables are used to calculate the correlation. The purpose is to find out which reasons of migration are major drivers. Among them the lowest correlated variables are the number of migration and the location of the markets. The highest correlated variables are the number of migration and the number of population. The second highest is the accessibility.

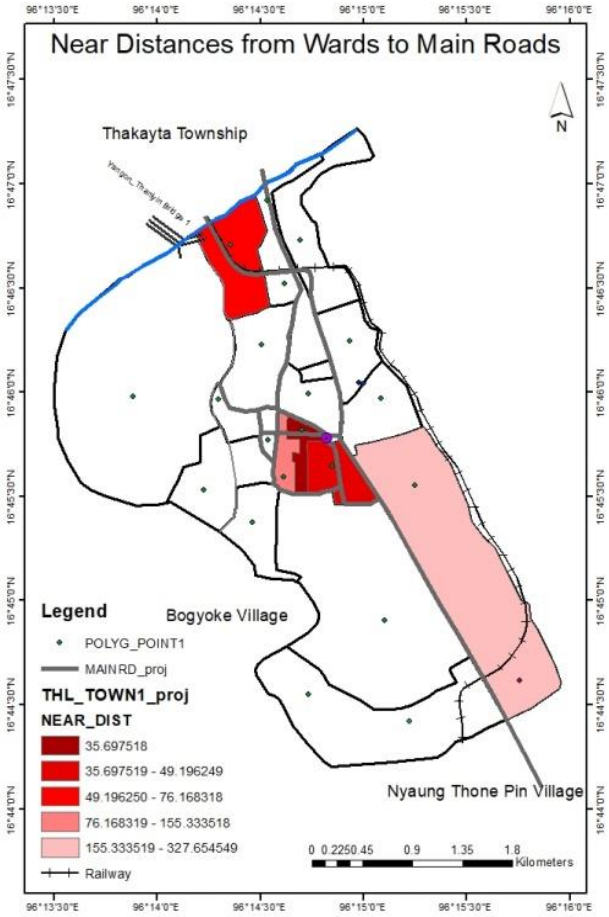

Figure 3.5. Showing the accessibility of the wards near the main roads
Note: The wards are symbolized using graduated colours based on distances to main roads, and they are stated in legend with the distance.

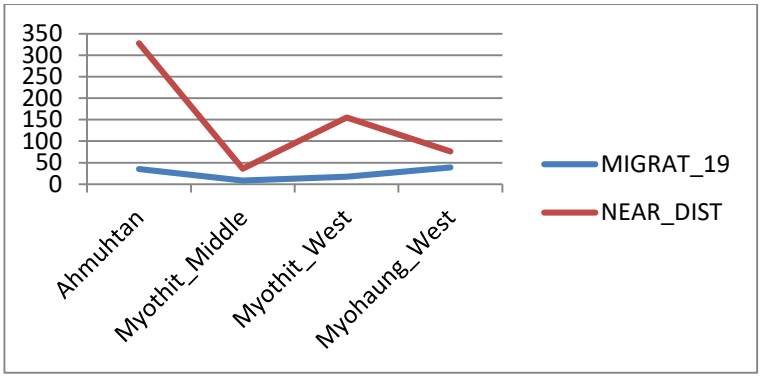

Figure 3.6. Migration in 2019 and proximity distances from main roads (NEAR_DIST)
Source: Table 3.3

Table 3.3. Number of Population and Migrant People and Accessibility of the Wards

Names of the wards	Population in 2014	Migration in 2019	Near distances from main roads
Ahmuhtan	12009	35	327.65
Myothit_Middle	860	8	35.70
Myothit_West	579	17	155.33
Myohaung_West	6082	39	76.17

Source: Figure 3.5

Table 3.4. Correlation between Migrant People and Proximity Distances from Main Roads

		Pop_ 2014	Migrant_2019	Near Distance
Pop_ 2014	Pearson Correlation	1	0.784	0.799
	Sig. (2-tailed)		0.117	0.105
	N	5	5	5
Migrant_2019	Pearson Correlation	0.784	1	0.567
	Sig. (2-tailed)	0.117		0.318
	N	5	5	5
Near Distance	Pearson Correlation	0.799	0.567	1
	Sig. (2-tailed)	0.105	0.318	
	N	5	5	5

Source: Table 3.3

3.1.3 Migration based on Motive

Personal aspiration: It is desiring to get an improved standard of living for oneself or family through achieving economic and social benefits; economic migrant people. In the study area, economic migrant people are to open tea shops, tailoring and working as bicycle carriers. Most of the migrants are economic reasons, 39%. 31% of migration is for social reasons such as to live closer to relatives, moving to form new family units and house rent being cheaper than other townships in Yangon City.

Personal well-being: Migration for health reasons and education is 17%.

Forced (Environment): Forced migration, which is the consequence of natural disaster is rarely found in the study area. Some encountered a region of flood, flooding in Ayeyarwady Region in Nargic 2008.

4. CONCLUSION

Researchers are interested in the study of migration in Thanlyin Town for the following reasons: The study of migration is important for the transfer of manpower and their skills. It is one of the consequences of urban development. The population of Yangon city has been increasing for it is the commercial city of the country. As a result, some urban populations move to a satellite town like Thanlyin. Thanlyin town is a major port city of Myanmar, which is located near the capital city of the country. The movement of people has many reasons and is a complicated theme; the researchers want to know the patterns of population movement for each ward and the controlling factors for migration before and after 2000.

When the migration of the areas is studied, interaction of push and full factors are needed to be considered.

The number of migration to Thanlyin increases after opening Yangon-Thanlyin Bridge No.1 and Bridge No.2. The cost for real estate is lower than the neighbouring urban areas. These are the pull factors for migration. The common push factors are to establish the new family in suburban area, to continue to study higher education, to be suffered from the natural disaster, Cyclone Nargis in 2008 and to spend higher rent in where they lived before moving.

Three type of migration are found. Intra-ward migration is the lowest. Inter-ward migration is middle and the highest is regional scale migration; more than half of the migrants.

Migration is studied on the basis of two periods, before 2000 and after 2000 due to the developmental projects. The latter period has more migration number.

Migration is the result of a complex combination of many controlling factors; social, economic, education, health and the location and accessibility factor of the destination. Partial correlation and proximity analysis are applied to know the important controlling factors. The construction of the bridges and accessibility are the major drivers of migration.

Now government is planning two new projects to connect Thanlyin Township and Yangon City. The first one is a circular road outside Yangon City which is passing through five townships such as Hlegu, Dagon Myothit (East), Dagon Myothit (Seikkan), Thanlyin and Kyauktan townships. Another project is third Yangon-Thanlyin Bridge through Thaketa-Yangon to across Bago River. These projects may improve the number of migrants to Thanlyin Town in the future.

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