

# Geographical Analysis on Socio-economic Conditions of Pegado Village Tract in Sagaing Township

Soe Sandar San<sup>1</sup>, Thin Thin Oo,<sup>2</sup> Cho Khaing Win<sup>3</sup>

## Abstract

The study area, Pegado Village Tract lies to the northwest of Sagaing town and is about 6-miles far from that urban area with easy to access. This research emphasizes the socio-economy of Pegado Village Tract from a geographical point of view as it is located on the highway of Monywa-Mandalay and it has changing livelihood for local people so as to a new institutional service (Sagaing University). By analyzing, both qualitative (by interviewing) and quantitative methods (such as questionnaires survey) with local people, quality of living index method are also applied to assess the socio-economic conditions of the study area. For the study area, (15) indicators of social and economic conditions are considered at the micro-level (i.e. Household-level). (500) questionnaire's responses are considered, out of (762) total households in Pegado Village Tract (2014). After accomplishing the analytical works, it is found that the socio-economy of Pegado Village Tract under a moderately high level (52.6 %) and high level (12.2 %). The required factors should be fulfilled by considering the facilities of health care, electricity, and upgrade of primary school in order to upgrade and to increase the socio-economic development of households (the rest of medium, moderately low and low levels-35.2 %) within Pegado Village Tract.

**Keywords:** Socio-economic, Indicators, Living Index Method, Pegado Village Tract

## Introduction

It is imperative to understand the Socio-Economic Status (SES) of the community in order to correlate its impact on health and quality of living standards. Almost all community-based studies focus on socio-economic stratification, which is the key parameter for a proper understanding of the affordability of the community of health services, amenities, and their purchasing capacity. When it is taken as a summation of education, occupation, and income, it reflects the value system expected for that level of education and occupation. The important determinant of the standard of living and health status is Socio-Economic Status of the individual/ community. (Dr. Shankar Reddy Dudala & Dr. N Arlappa, 2013).

In the study area, the variables related to some social and economic factors such as education facility, drinking water facility, the machines used in farm, luxury goods, health care facility for local people as well as a draught animal, income, housing type, solid waste disposing, and landowner, etc. were considered to solve the research problem. The present study is an attempt to compare the socio-economic conditions of the study area. There have been several attempts to develop different scales to measure the socio-economic status.

## Study Area

Pegado Village Tract lies in the Dry Zone of Central Myanmar. It lies between the latitudes of 21° 56' 19.1" North and longitudes of 95° 54' 38.2" east. It is located south of Sagaing-Monywa-Shwebo Highway at 6 miles distance from Sagaing Town. It is bounded on the east by Sitee village tract, on the west by Nyaungbinzin village tract, on the south by Maubin village tract and Kaungmudaw In (lake) and on the north by Taeinte village tract.

---

<sup>1</sup> Professor, Dr., Geography Department, University of Mandalay

<sup>2</sup> Professor and Head, Dr., Geography Department, Pakokku University

<sup>3</sup> Associate Professor, Dr., Geography Department, Loikaw University

(Map1.1). The total area of Pegado village tract is 2010.24 acres (3.141 sq-miles) and (0.65 %) of Sagaing Township. It consists of Pegado village and Aungchanthar village. There are (762) households and (715) houses in this village tract in 2014. The study area has an elongated shape. Kaungmudaw *In* is found in the southwestern part of the Pegado Village Tract. Kaungmudaw *In* is connected with the Ayeyarwady River via Maungmakan *In*. In general, Kaungmudaw *In* is dried up in the hot dry season and which is filled by overflowing of water from the flooded water during the rainy season. This *In* is used for domestic supply by diverting water from it. Sagaing Town receives Tropical Steppe Climate (BSh).

### **Hypotheses**

(1) Socio-economic conditions are unevenly distributed in the households of the Pegado Village Tract, Sagaing Township.

(2) The socio-economic status of the dwellers within the study area are largely related to the social and infrastructural development in the study area.

### **Aim and Objectives**

The main aim of the research paper is to focus on the economic and social status in the study area and the objectives are

- to find out the measures for the development of the economic and social status in Pegado Village Tract in Sagaing Township
- to examine the influencing factors for socio-economic conditions in this Village Tract

### **Literature Survey**

The paper entitled "**Quality of Living Index in Chennai: An Approach Paper**" by Dr.C.Chandramouli (2003) tried to generate a composite index on the physical quality of life. Totally 8 indicators were assumed to calculate the index of equality of living.

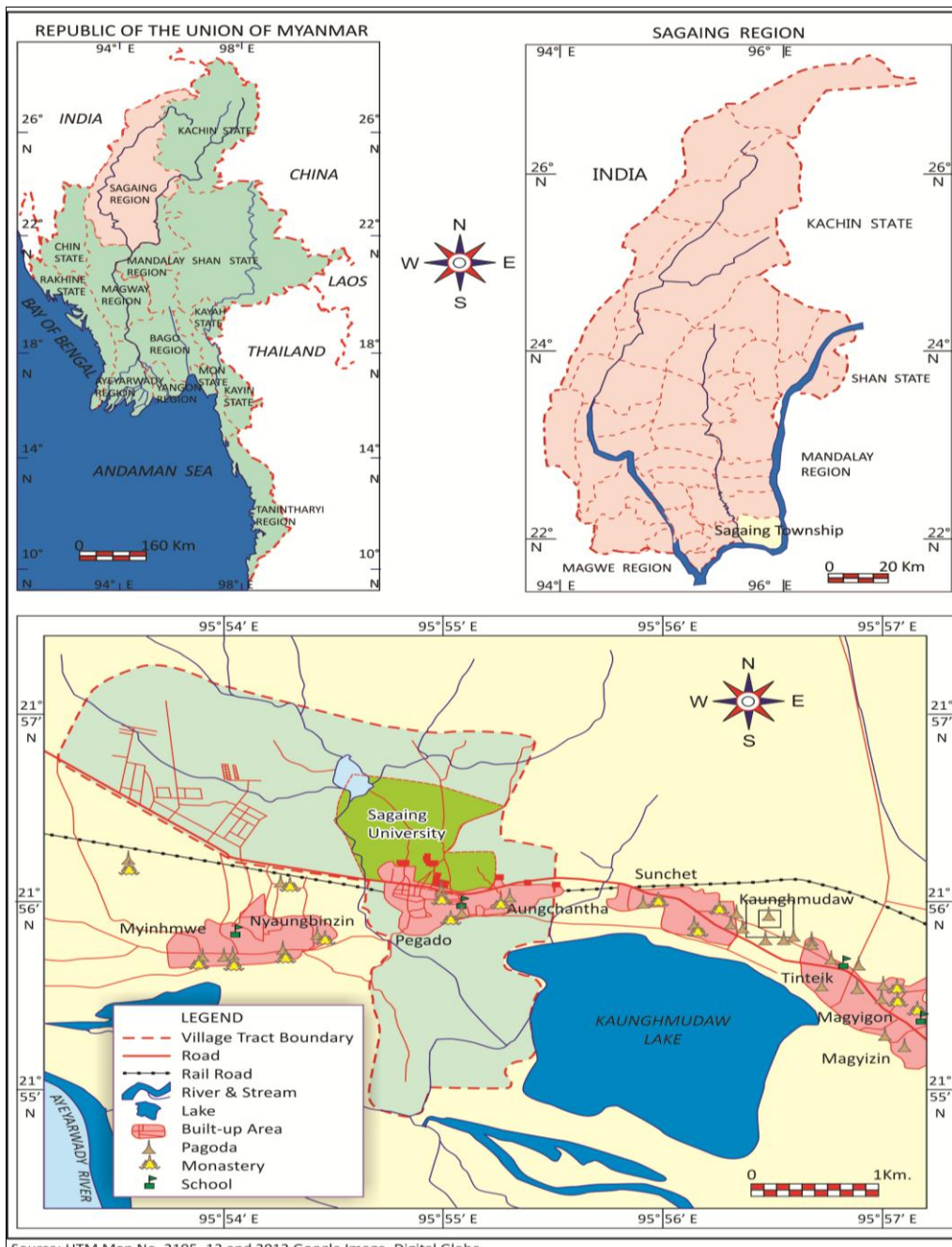
The Web paper "**A Manual for Socioeconomic Study**" by M.A Abdrabo and M.A Hassaan (June 2003) points out that the indicators for socio-economic impacts. This project paper involves an assessment of the prevailing environment and socioeconomic conditions to develop a sustainability strategy for the coastal areas of the Mediterranean.

The paper titled "**Levels of Social-Economic Development in Solapur District, (M.S) A Geographical Analysis**" is prepared by Dr. S.T.Shete, Dr. N.G. Mali, Dr. K.B Kankure, and Dr. S.J. Phule (2009). This article examined the patterns of socio-economic development in Solapur District, delineating various socio-economic development regions.

The paper titled "**A Geographical Analysis of Socio-economic Development in Myinmu Township**" by Ma Khin Myo Myo Chun (2012) pointed out the socio-economic development patterns of Myinmu Township. The socio-economic development of Myinmu Township was analyzed by applying the Composite Index of socio-economic well-being level according to Jasbir Singh.

The paper entitled "**Socio-economic Development in India: A Regional Analysis**" by Abhiman DAS (1999) has also been studied. This study examined the existing variability of inter-state development and thereby identifying the indicators responsible for the diversity in development.

MAP (1.1) LOCATION MAP OF PEGADO VILLAGE TRACT IN SAGAING TOWNSHIP



Source: UTM Map No. 2195\_13 and 2013 Google Image, Digital Globe.

**Data Sources and Methods**

Regarding the secondary data, the climatic data are collected from the Meteorology and Hydrology Department, Sagaing District which is helpful to emphasize the climate in Sagaing Township. Moreover, demographic data and infrastructural data are collected from the Immigration and National Registration Department, Land Records Department in Sagaing Township, Administrative Office (Pegado Village Tract), and General Administrative Department in Sagaing District respectively.

Primary data are available 2012 and 14 by using questionnaire and interview methods.

To measure the development and disparities in the socio-economy of the study area, **Quality of Living Index Method** formulated by Dr. C. Chandramouli (I.A.S, Director of Census Operations, Tamil Nadu) applied to generate a composite index.

### **Demographic and Infrastructural Factors**

#### **Total Population**

The distribution of the population of one place is not the same as another place. It is influenced by the geographic bases and the possibilities or opportunities for operating economic activities. In Pegado Village Tract, the population distribution was not even. This uneven distribution of the population was due to the physical factors and socio-economic factors.

In 2011, the total population of Sagaing Township was (293,744) persons. The urban population was (66,787) persons that were (22.74) percent of the total population of Sagaing Township. In 2011, the rural population in Sagaing Township was (226,957) persons, (77.26) percent of the total population of the township. In 2011, the total population of Pegado Village Tract was (3,031) persons, (1.04) percent of the total population of Sagaing Township. In 2012, the total population of Pegado Village Tract was (3,487) persons. In 2014 (Census Year), the total population of Pegado Village Tract was (3,289) persons.

#### **Population Density**

The density of the population is one of the most important indicators of geographical synthesis and economic activities. The density of population is a better surrogate for carrying capacity of the land in rural areas. Thus, indirectly it brings at the productively of land. (Kulkarni, 1984). In 2009, the population density in Pegado Village Tract was 1,212 persons per sq mile and 966 persons per sq-mile in 2011. In 2012, the population density in this Village Tract was 1,111 persons per sq-mile. In 2014 census year, the population density in Pegado Village Tract was 1,047 persons per sq-mile.

#### **Education Facility**

In the study area, Basic Education Primary School has (11) teaching staff and the total students of (314) in 2014. Therefore, the teacher-students ratio in that school was 1:40. This ratio was somewhat reliable for the potential development of rural education. There were (36) university students in Pegado Village Tract. Sagaing University is located within the Pegado Village Tract. In 2013-2014 academic year (First Intake in Sagaing University), there were (99) university teachers and (1,582) students at Sagaing University. So, the teacher-students ratio in this university was 1:16.

#### **Health Care Facility**

The study area has one health care staff in the Rural Health Care Center and it can give useful help to health care services of the whole village tract. In Pegado Village Tract, there was one Rural Health Care Centre, and two Maternity and Child Health Care Centers. The Maternity and Child Health Care is also found in Aungchanthar village.

### Sanitary Facility

Those who are using the septic-tank latrine or fly proof pit latrine can be defined as those accessible to proper sanitation. In Pegado Village Tract, there were the total number of (300) fly-proof latrines in 2014.

### The facility of Fresh Water Supply

Safe drinking water is defined to be the water obtained from the safe public water, from the tube-well, and the protected tanks. There are two kinds of tube wells: hand-pump tube wells and machine pump tube wells and open wells in the study area. The Kaunhmudaw *In* is useful not only for irrigation but also for water utilization of household use and drinking for animals in this village tract.

### Facility for Electricity

Electricity has become a basic need of the population in rural areas. (80 %) of the households have access to power supply for their lighting needs. In Pegado Village Tract, there are one 110 KVA transformer, one 315 KVA transformer, and 556 electric meter units in 2014.

### Transportation and Communication Facilities

Transportation and communication lines are the arteries of an agro-economic region since they promote agricultural development. It can be seen that there were nearly 7 miles of tarred roads (Sagaing-Pegado) and 3 miles of earthen roads (within Pegado Village Tract).

Post, telegraph, and telephone services or telecommunication services were one of the infrastructural bases which indirectly support raising the socio-economic conditions of rural people. Accessibility to the market or evaluating the crop price is needed by the farmers. Hence, a telephone or telegraph or post facility can fill up this necessary action. Throughout the study area, (72 %) of the total population have been using cell phones and (3 %) of total households have been using auto phones.

## Data Analysis

### Method Used and Variables for Examining Socio-economic Conditions

To measure the socio-economic levels in the study for the year of 2012-14, the Quality of Living Index Method adopted by Dr. C. Chandramouli is used. The attempt here is to use the data collected through questionnaires and interview methods which were conducted by the researcher during 2012-2014 and to generate a composite index that would be a guide to classify the level of socio-economy in Pegado Village Tract. The composite index is computed by using the following formula:

$$Z = \frac{x - x_{\min}}{x_{\max} - x_{\min}}$$

- x = Value of the Indicator for each Household
- $x_{\max}$  = Maximum value of the indicator of Households
- $x_{\min}$  = Minimum value of the indicator of Households
- Z = Quality of socio-economic Index

By using the above formula, indices calculated for all indicators for each household. The sum of these indices divided by the number of variables gives the composite index.

$$\text{Composite Index} = \frac{Z_1 + Z_2 + Z_3 \dots Z_n}{N}$$

N = Total Number of Variables

The socio-economic level of Pegado Village Tract measured for each household with the help of certain indices. The following variables were considered for determining the levels of socio-economic conditions. There are (9) social and infrastructural indicators and (6) economic indicators.

- (1) Total Population
- (2) Working Population
- (3) Education Status
- (4) Health Care Facility
- (5) Solid Waste Disposal
- (6) Sanitation Facility
- (7) Housing Type
- (8) Material Belongings (Car, Cycle, Phones, TV & Radio, etc.,)
- (9) Domestic Water Use
- (10) Drinking-Water Use
- (11) Electricity
- (12) Land Ownership
- (13) Animals Possess
- (14) Agricultural Machines
- (15) Income (Surplus or Deficit)

### **Classification on Socio-economic Levels**

After finding the composite index for every household, it was categorized into high, moderately high, medium, moderately low, and low levels to be tabulated. Map (1.2). The highest range, which has the composite index, was more than 0.64. The next category of composite index 0.51 - 0.64 classified as moderately high. The medium level of the composite index was 0.37 - 0.50. The second last category of composite index 0.23 - 0.36 was moderately low. The last category of composite index less than 0.23 classified as low.

### **Low Level of Socio Economy**

Under this category, (22) households or (4.4 %) were found in the study area. In the entire village tract, there are (2) households in Pegado Village and (20) households in Aungchanthar Village with low level of socio-economy. In these households, the numbers of belongings were less than that of the other households. Moreover, the housing type and sanitation facilities were also lower than those of the others. Out of 22, 14 households had no

latrine at all. Most of these households were located in Aungchanthar village because of their simple living style, tradition, and custom. Some households were now proposed to access freshwater supply.

### **Moderately Low Level of Socio Economy**

Totally (84) households fell under the level of moderately low in socio-economy. There were (66) households in Aungchanthar Village and (18) households in Pegado Village. In these households, indicators such as the number of belongings, freshwater supply, and facility of electricity were not very high like others. Hence, such indicators make those households to become the moderately low level of socio-economy. About (16.8 %) of the total questionnaire responses had moderately low level of socio-economic conditions in Pegado Village Tract. Regarding solid waste disposal and health care, the index value is more or less the same throughout the study area.

### **Medium Level of Socio Economy**

There were (70) households or (14 %) under the level of medium in 2012-2014. The numbers of freshwater supply and electricity facilities have been higher in numbers than the other low and moderately low socio-economic levels. Moreover, the numbers of the working population in those households have also been an important indicator to be medium level.

### **Moderately High Level of Socio Economy**

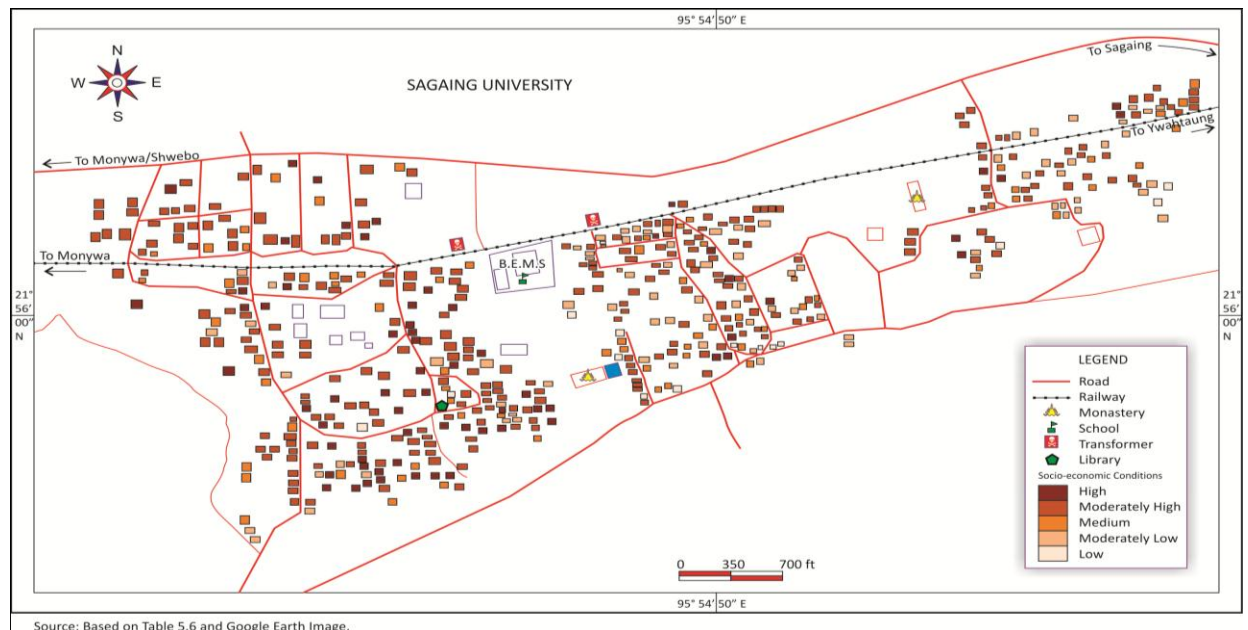
About (52.6 %) or (263) households of the total questionnaire responses had moderately high level of the socio-economic conditions in this village tract. And those households fell in the category of moderately high level of development, owing to the following reasons: being fairly total population, having accessible education facility mostly primary level, easy access to water supply, appropriate health care services, having fairly facility of electricity, sizeable landowner, animal possessing, solid waste disposing of with high awareness level and wooden building housing type. All of these factors made the medium social and infrastructural status of these households and accordingly these people could have been experienced fair socio-economic development.

### **High Level of Socio Economy**

About (12.2 %) or (61) households were found under this category of high level of socio-economy in the study area. It is mainly due to the potential human resources and working population, high levels of primary education status, high numbers of belongings, sufficient freshwater supply, and high number in surplus of daily income. Moreover, the other indicators like the number of landowners, animals possess and numbers of the agricultural machine also are higher than that of the other households. A total of (55) households of this level was found in Pegado Village.



## MAP (1.2) Composite Socio-Economic Conditions For Each Household In Pegado Village Tract (2014)



### Results and Discussion

In studying the index values of (15) indicators to identify the spatial pattern of socio-economic conditions in Pegado Village Tract, it is observed that indicators regarding with facility of freshwater supply was the dominant factor for the development of socio-economic level. Most of the people in Pegado Village Tract had good access for drinking and domestic water uses within their premises, while a few people who had to go for that far away. Secondly, the working population and education status followed to determine the socio-economic level. (71%) of working people are served at government offices. The remaining (29 %) of the population are engaged in their private business, mainly agricultural industry, handicraft, and other odd jobs. Then, regarding material belongings (car, motorcycle, cell phones, radio and television sets, etc.) also showed the development levels of socio-economy in Pegado Village Tract. For example, radio and television were potential media to spread, awareness about the incidence, spread, and prevention of diseases and also the status of the environment. It was also effective in bringing about lifestyle changes in society. The media should be effectively harnessed to disseminate knowledge. The division categorized as high level was in a cluster pattern in the southwestern part in the study area. (Map 1.2). Moreover, it can be noted that moderately high socio-economic levels were found in this village tract which is located easy access to the road.

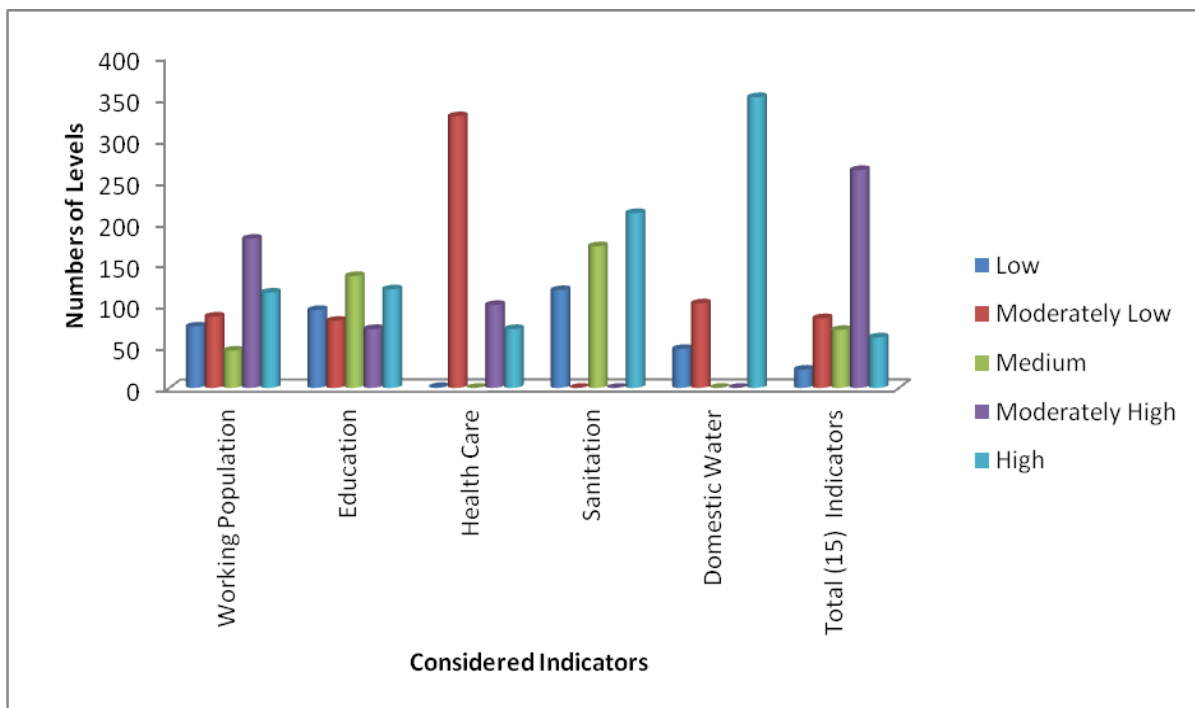
By the comparative study of socio-economic levels with each indicator and total indicators in Pegado Village Tract (2012-2014), it was also found that Table (1.1) and Figure (1.1). By considering (15) indicators of socio-economic conditions in Pegado Village Tract, regarding with facility of **fresh water supply** and the **working population** and its index values was the dominant factor for the socio-economic development. Besides, **education status** and some of the **sanitation facilities** could also be considered as leading factors to improve the social welfare of the local people. Moreover, agriculture, livestock breeding and non-agricultural activities such as cottage industries, students bordering are also determinants for the economic development of the study area, but very less in weight. Table (1.1) and Figure (1.1).



**Table (1.1) Comparative Study of Socio-economic Levels by Considered Indicators in Pegado Village Tract (2012-2014)**

Sr. No	Indicators	Socio-economic Levels				
		Low	Moderately Low	Medium	Moderately High	High
1	Working Population	74	86	45	<b>180</b>	115
2	Education	94	81	<b>135</b>	71	119
3	Health Care	1	<b>328</b>	0	100	71
4	Sanitation	118	0	171	0	<b>211</b>
5	Domestic Water	47	102	0	0	<b>351</b>
6	Total (15) Indicators	22	84	70	<b>263</b>	61

Source: Computed by researchers based on the questionnaire responses (2012-14)



**Figure 1.1 Comparative Study of Socio-economic Levels with Indicators in Pegado Village Tract (2014)**

Source: Based on Table (1.1)

## Conclusion

Pegado Village Tract is located on the Sagaing-Monywa-Shwebo Highway at a distance of 6 miles from Sagaing Town. The area of Pegado village tract is 2010.24 acres (3.141 sq-miles). For the study area, (15) indicators of social and economic conditions were considered for the year 2012 to 2014 at the micro-level (i.e. Household-level). To measure the socio-economic levels in the study for the year of 2012-14, the Quality of Living Index Method adopted by Dr. C. Chandramouli used. About (52.6 %) or (263) households of the total questionnaire responses had a moderately high level of the socio-economic condition in this village tract. The socio-economic status of the dwellers within the study area largely depends on the social and infrastructural development in socio-economic conditions.

## Acknowledgements

We also wish to express our thanks to Dr. Than Than Win, Professor, and Head of Geography Department, Sagaing University for her genuine encouragement and suggestions. We are also greatly indebted to U Tint Lwin, General Administrative Officer, Pegado Village Tract, for his valuable assistance. We would like to extend our special thanks to U Win Naing, who is from Aungchanthar Village and 2014-2015 Academic Year Ph.D. preliminary students for their help in our field observations in Pegado Village Tract.

## References

- Aung Win Kyi, Maung (2009): **"A Geographical Analysis on the Agricultural Land Use Based on the Types of Landform in Sagaing District"**, Ph.D. Dissertation, University of Mandalay
- Chandramouli, C. Dr. (2003): **"Quality of Living Index in Chennai: An Approach Paper"** *Proceedings of the Third International Conference on Environment and Health, Chennai, India, 15-17 December 2003.* Chennai: Department of Geography, University of Madras and Faculty of Environmental Studies, York University. Page 75-81.
- Khin Myo Myo Chun, Ma (2012): **"A Geographical Analysis of Socio-economic Development in Myinmu Township"** Ph.D. Dissertation, University of Mandalay
- Singh Jasbir & Dhillon S.S. (2004): **"Agricultural Geography"**, 3<sup>rd</sup> Edition, Ta Ta McGraw Hill Co. Ltd., New Delhi, India.
- Shankar Reddy Dudala, Dr. & Arlappa N, Dr.(2013): **"An Updated Prasad's Socio Economic Status Classification for 2013"**, International Journal of Research and Development of Health, Vol 1(2), Pg-26-28
- Shete, S.T Dr., Mali, N.G. Dr., Kankure, K.B. Dr. & Phule, S.J. Dr. (2009): **"Levels of Social-Economic Development in Solapur District, (M.S) A Geographical Analysis"** Shodh, Samiksha aur Mulyankan ( International Research Journal) Vol II, Issue 5
- Tin Thandar Oo, Ma (2012): **"Diversified Cropping Patterns and their Influences on Socio-economic Conditions of Tada-U Township"**, Ph.D. Dissertation of Department of Geography, Mandalay University.