Chapter Six

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Land is one of the precious gifts for humans and other living organisms. Without land surface the survival is difficult. Location, technology and human activities are the base for origin of towns and cities. The study of urban centres has been one of the well developed areas of research in geography. The present world is undergoing a tremendous change in the number of people living in urban places. The varied characteristics of urban centres make it essential to take individual cities for detailed investigation. The structure of the city involves building up of urban land uses within the city and also the territorial expansion to areas that have become urbanized beyond the city limits. The study of urban land use pattern and functional characters helps for the understanding of the nature, extent, location, demographic structure and interpretation of various types of establishments which form physical and morphological pattern of a town. The varied nature of these aspects makes some places to have high potential while some other regions lack resources. The uneven distribution of resources decides the growing status for any country, particularly for developing countries like India.

India is one of the fastest growing countries in terms of technology and other service activities. Only less than 10% of the world population lived in urban areas at the beginning of the 20th century. However in 2007, urban population exceeded rural population in absolute number making it necessary to devote more attention from the research point of view. Keeping this in mind, the present study is taking into consideration of their spatial pattern and functional characters of various urban centers in Theni district, Tamil Nadu, India.
Theni district is one of the southwestern districts of Tamil Nadu State. Geographically Theni district lies between 9° 30’ North latitude and 10° 15’ North latitude and from 77° 10’ East longitude to 77° 45’ East longitude. The district covers an area about 2869 sq.km. As per 2011 census the total population of the district is about 1245899. Among the 32 districts of Tamil Nadu, Theni is one of the smallest in terms of population since it ranks 28th as per 2011 census. The district administrative headquarters of Theni district is situated at Theni-Allinagaram town and it is one of the important market centres in the district. Theni district came into existence only in 1997. Prior to that this was part of the erstwhile Madurai district. As per 2011 census the district comprises of two Revenue Divisions viz., Periyakulam and Uthamapalayam, and five Taluks, viz., 1. Theni, 2. Periyakulam, 3. Andipatti, 4. Uthamapalayam and 5. Bodinayakanur. The taluks are further sub divided into eight Community Development (CD) Blocks viz., Andipatti, K. Myladumparai, Periyakulam, Theni, Bodinayakanur, Chinnamanur, Uthamapalayam and Kambam. Within these 8 blocks there are 80 revenue villages, 5 municipalities and 23 town panchayats.

The district lies at the eastern foot hills of Western Ghats and it is diversified by several ranges and hills. A range of hills which runs parallel to Western Ghats from north to south separate the district from neighbouring Kerala State. Physiographically the district can be divided into two natural divisions namely hilly area and central plains. Varushanad valley and Kambam valley are the two important valley regions in the district. The average elevation varies from 160 m to 2500 m. The important Reserve forests are Murugamalai in Periyakulam, Bodi north hills, Bodi west hills and Kottagudi in Bodinayakanur, Allinagaram in Theni, Andipatti in Andipatti, Gandamanur east and Gandamanur in K. Myladumparai and Kambam valley east, Kambam valley west and Suruli in Kambam. The study area has six major rivers. They
are: Vaigai, Suruli, Theni, Varahanadi, Manjalar and Varattar-Nagalar. Important reservoirs such as Vaigai Dam, Manjalar Dam, Sothuparai Dam and a number of small check dams have been constructed across these rivers. A small hydro electric power station is built across the Vaigai River at Vaigai Dam. Due to the mountainous character in the district, Theni district enjoys a salubrious climate with warm conditions throughout the year. Theni district has an average annual rainfall of about 831.1 mm. Nearly 40% of the rainfall occurs during the Northeast monsoon period. Charnockite is the predominant type of rock formation and it spreads over the entire district. Nearly 60% of the area is occupied by this type of the rock formation. Nearly 25% of the area is covered by Gneiss which is more widespread in the northeastern part of K. Myladumparai block and eastern part of Andipatti block. Khondalities, Migmatites and Unclassified Crystalline rocks have minimum area in the region. Nearly one-third of the total area is covered by Structural hill and it spreads along the reserve forest areas, from northeastern to southwestern part of the district. Pediment and the different categories of buried pediment cover nearly 50% of the study area. Bazada, Residual hill, Flood plain and Tanks cover a small portion of the study area. On the whole, the soil is categorized into five types, Younger Alluviam (Entisols), Caloariour Alluviam (Inceptisols), Red Loam (Alfisols), Red gravel and Red and Yellow soils (Ultisol). As per traditional classification of soils, the region has red soil, black soil, alluviam and forest soil. One-third of the total area is covered with Red gravel soil (forest soil). Red loam soil (Alfisols) is the second major type of soil and covers more than 30% of the study area. Caloariour alluviam and Younger alluviam soils occupy a sizable area of the western part and northern part of the district. Red and Yellow soils occupy very small part of Murugamalai forest. More than 50% of the study area has gentle slope while another one-fourth of the area has moderate slope. The northwestern and southeastern
regions have most of the steep and very steep slopes while the western border has steep moderate slope.

The nature of human activities mainly depends upon various characteristics of population. The total population of the study area has increased nearly four times in the last century. It increased from 318559 persons in 1901 to 1245899 persons in 2011. As per 2011 census the total population of the district is about 1245899 persons and it includes 625683 males and 620216 females. The rural population is 46.2% and urban population is 53.8%. Periyakulam and Theni blocks are more significant because each of them have more than 16% share to the total population of the District. Bodinayakanur and Kambam blocks have a share of 14.5% in the district. Andipatti, Uthamapalayam and Chinnamanur blocks have 10 to 11% share each. K. Myladumparai block has the lowest share of 6 percent. Theni district has a total of 338112 households as per 2011 census. Periyakulam Theni and Kambam blocks have the highest share in the number of households. K. Myladumparai block exhibits the lowest (21536) concentration of the households in the district. Other blocks have moderate share in households. The average population density of the district was 434 persons per sq.km as per 2011 census. The highest density of population is found in Theni block (1005 persons/sq.km) located in the central part of the district. Low density of 120 persons/sq.km. is noticed in K. Myladumparai block. Theni district has almost the same sex ratio of Tamil Nadu State. It is 996 females per 1000 males in Tamil Nadu and 991 females per 1000 males in the case of Theni district as per 2011 census. Kambam is the only block which has a positive sex ratio of 1013 females per 1000 males. K. Myladumparai block has the lowest sex ratio of 948 females per 1000 males. In the year 2011 total literacy rate in Tamil Nadu was 80.1%. Theni district has a lower literacy rate of 69.8%. It is comparatively less than the State average. On an average,
nearly 76.6% of the males are literate while only 63% of female are literate. Theni, Kambam and Uthamapalayam have a higher literacy rate than the district average. The lowest literacy rate is noticed in K. Myladumparai block (58.8%). The share of SC/ST population is high in Periyakulam block (26.9%) because the block is nearest to Kodaikanal block of Dindigul district. Only Bodinayakanur, Uthamapalayam and Kambam have a comparatively lower share of SC/ST population.

In Theni district as a whole 42.6% of the total population are engaged in various kinds of agricultural and other economy based activities. Within Theni District, K. Myladumparai and Chinnamanur blocks have higher work participation. Periyakulam block has a comparatively minimum share of 39% in work participation as per 2011 census. The average share of cultivators to the total main workers is about 6.9%. Agricultural laborers for the district as a whole account for a share of 51.9%. This indicates that in the district agricultural based activities are high. K. Myladumparai block has the highest concentration of agricultural laborers (68.3%) while a minimum share of 31.2% is noticed in Theni block because Theni is the headquarters for the district. The average share of household industrial workers is only about 2.4%. The household industrial workers are more (4.4%) in Andipatti. This is mainly because of handloom industries for which block is very famous. The average share of Other workers category is about 38.8% for the district, which is lower than the State average (53.7%). These other workers category are concentrated more in Theni block (61.7%). The lowest share is noticed in K. Myladumparai, because the block is basically rural in nature. Theni district marginal workers participation is only 4.9%. Paddy is widely cultivated in Theni, Uthamapalayam, Kambam, Chinnamanur blocks, whereas Sugarcane is cultivated in Theni and Periyakulam blocks. Rainfed crops like Cotton and Groundnut are cultivated in Andipatti. Theni district climatic condition is favorable
for growing all kinds of horticultural crops. Spices, Flowers, Mango, Grapes, Banana and Coconut are grown predominantly under irrigation. Plantation is an important agricultural as well as economy based agricultural activity. It covered nearly 15% of the total area. Cardamom, Tea, Mango and Coconut are the major plantations in the district. This is the base for to discuss the overview of urbanization in the study area.

After 1950s, development of transport, technology and communication made the world to shrink and become a global village. Thus Tertiary or Service activities started gaining greater emphasis than secondary economic activities. Therefore modern cities in most of the Developing countries have a mixture of various functions including primary, secondary, tertiary and sometimes even quaternary activities. The relative significance of these economic activities varies from one city to the other. Hence in the present study functional characteristics have been considered as a core theme for discussion.

The regional characteristics of urban process of an area may be analysed by taking two different dimensions. The first one is the level of urbanization which is nothing but the share of total urban population of an area to its total population. It is usually given as percentage share.

Class I is called ‘city’ while other classes are called towns. In general Class II and Class III are combined and known as Medium towns while Class IV, V and VI are combined together and known as Small towns. The study area did not have any Class I city so far and has only Class II, Class III, Class IV, Class V and Class VI towns. After the creation of new Theni District, there was an accelerated pace of urban growth in all blocks except Andipatti and K. Myladumparai. Though the District average was only 54.1%, Kambam block had a very high level of urbanization (85.7%). Similarly the location of District Headquarters at Theni helped that block to increase its urbanization
level from 44.6% in 1991 to 64.1% in 2001. Another main reason for increased urban population is the inclusion all Town Panchayats as urban centres as per the Definition of urban area in Census 2001. Uthamapalayam and Periyakulam blocks experienced more than two fold increase while Chinnamanur experienced slightly lesser increase. Bodinayakanur had nearly 50% increase in its level of urbanization. Andipatti is the only block which showed very little variation. Most of it is comparatively dry and the southeastern part is hilly. However, the pace of urban growth did not continue after 2001 and the status of urbanization in various blocks in 2011 has not shown increase but only a slight decline. This points out that base for urban growth is comparatively weaker in the study area.

The number of urban centres increased from 8 in 1991 to 28 in 2001. There is no increase in the number of urban centres between 2001 and 2011. Among the different methods used for analysing the distribution pattern of settlements the nearest neighbour technique is most commonly used. In 1991 the distribution pattern is random. On the other hand in 2001 and 2011 the distribution pattern has become cluster in nature. The cluster pattern indicates that the future growth will also likely to take place nearby the existing urban centres.

A number of methods are there to analyse the functional characteristics of towns. All these methods take the distribution of workers in different types of economic activities. Based on this distribution, towns are classified into different categories. In the present study Nelson’s (1955) method of classification has been used.

As per Nelson’s method, towns of Theni district could be categorized into the following groups.

1. Unifunctional towns
2. Bifunctional towns and
3. Non specialization towns

In the year 1991 Theni was a part of Madurai district and had only eight urban centres. Hence only they are considered for the classification. There were 3 unifunctional towns in 1991. They are Theni-Allinagaram (S), Bodinayakanur (C1) and Gudalur (A). While Theni-Allinagaram has Services as the dominant function, Agricultural Labour is most important in Gudalur. In the case of Bodinayakanur, there is a stronger specialization of Cultivation.

The bifunctional towns are notable for two major functions. Periyakulam and Andipatti-Jakkampatti are the important bifunctional towns in the year 1991. Service (S) Cultivation (C) are the dominant functions in Periyakulam while Andipatti-Jakkampatti has Service (S) and Household Industries (H). The concentration of weaving textiles is the major reason for this. In fact Andipatti-Jakkampatti is notable for the textile handloom products. The significance is indicated by the notation H4. Marketing of these products may be main factor for this town to have specialization of Services also. Of the 8 urban centres, Chinnamanur, Uthamapalayam and Kambam have diversified functions and no specialization of functions is noticed. Hence they come under Non specialization town category.

Theni was bifurcated as a new District in 1997. Further the application of Panchayat Raj Act in 1994 resulted in the inclusion of all Town Panchayats (TP) under urban category. Because of this, the number of urban centres in the study area increased from 8 in 1991 to 28 in 2001. The functional classification for 2001 indicates that there are 17 unifunctional towns, 1 bifunctional town and 10 non specialization towns.

- Chinnamanur, Uthamapalayam and Kambam continued as Non specialization towns in 2001 also.
Bodinaukanur and Periyakulam lost their specialization and became non-specialization towns in 2001.

Vadakarai, Thenkarai, Kombai, (all Class IV towns) Hanumanthampatti and Pannaipuram (Class V) are the newly added Non-specialized towns in 2001.

Odaipatti is the only bifunctional town in 2001 with specialization in cultivation and agricultural labour.

About 50% of the unifunctional towns have Agricultural labour specialization.

There is no change in the status of function as far as Theni-Allinagaram and Gudalur are concerned.

Andipatti-Jakkampatti has lost its bifunctional status in 2001 and became specialized only for Household industry.

Bodinayakanur, Periyakulam, Chinnamanur, Uthamapalayam, Kambam and Kombai continued as Non-specialization towns in 2011 also.

Odaipatti continued as a bifunctional town in 2011 also.

Andipatti-Jakkampatti again became a bifunctional town with increased specialization of Services.

Theni-Allinagaram and Palani Chettipatti continued their specialization in Services in 2011 also.

Gudalur also continued its specialization status in agriculture in 2011 also.

Boothipuram, Melachokkanathapuram, Ganguvarpatti, Kuchanur, Markayankottai, Pudupatti and Kamayakoundanpatti are the other unifunctional towns with specialization in agriculture in 2011.

Among the three Class II towns Theni-Allinagaram remained as a Service town for the past two decades. On the other hand Kambam town has diversified functions and no specialization during the same period. Bodinayakanur town
which had specialization of cultivation in 1991 lost its significance and became a diversified functional town with no specialization in 2011.

- Among the five Class III towns Chinnamanur and Uthamapalayam towns have no specialized functions during the study period. On the other hand Gudalur town continued as a unifunctional town with specialization of agriculture.

- Periyakulam which was a bifunctional town in 1991 lost its specialization in 2001 and 2011 and became a Non specialization town. Andipatti-Jakkampatti has bifunctional status in 1991 and 2011 with specialization of Household industry and Service functions. However, it lost its bifunctional status briefly in 2001.

- Among the new towns that came into existence in 2001. Odaipatti is the only bifunctional town with specialization of agriculture.

- Devadanapatti and Thenkarai towns lost their significance of specialization in agriculture. Veerapandi and Thevaram lost their specialization of cultivation and Highways Township also lost its Service function.

- Vadugapatti and Thamaraikulam became unifunctional towns with Household industry specialization while Pannaipuram and Hanumanthampatti became specialization towns for agriculture.

- In the case of other towns, there is no major change in the functional status.

Studies on medium towns are comparatively few not only in India but also at the international level. The SMESTO (Small or MEdium Sized-TOwn) project under EPSON (European Spatial Planning Observation Network, May 2006) observes that there is a dire need for more studies on small and medium towns. It also states that there is no systematic research on small or medium-sized towns although policy
making increasingly refers to them. It adds that information on them is very weak and lacks conceptual comparability.

The above observations related to the European scenario are also relevant in the Indian context. These have been kept in mind and a detailed analysis of varied characteristics of Class II and selected Class III towns have been undertaken for the present analysis. Theni-Allinagaram, Bodinayakanur and Kambam are the three Class II towns.

Theni-Allinagaran was first notified as a town in 1931 with a population of 9678. It became a third grade Municipality in the year 1964 and was upgraded as a second grade municipality in 1972. Further elevation as first grade Municipality came to the town in 1983 and is continuing till date. Bodinayakanur town is situated at the foothill of Western Ghats and it is popularly known as “Cardamom town”. Bodinayakanur town was first notified in 1916 as a third grade Municipality, which was later upgraded as a second grade Municipality in 1966. Further elevation as first grade Municipality came to the town in 1998 and is continuing till date. Kambam town is located at the foothill of Western Ghats in the Kambam valley region. The town is very popular in Coconut and Cardamom cultivation and export. Kambam town was first notified in 1958 as a third grade Municipality, with part of Uthamapuram and part of Kambam village, which was later upgraded as a second grade Municipality in 1975. Further elevation as first grade Municipality came to the town in 1991 and is continuing till date.

In the year 1951 the total population was only 18670 in Theni-Allinagaram town. At present the population is about 94453 persons as per 2011 census. Thus the population has increased five fold in the last 60 years.
During the same period the total population of Bodinayakanur increased from 35912 to 75675 which is slightly more than two-fold increase only. However Kambam town experienced a slightly higher increase of population from 26908 in 1951 to 68090 in 2011.

Theni-Allinagaram town has a total of 25371 households as per 2011 census. Number of households is the highest (2270) in Ward 12. On the other hand the lowest number of households is noticed in Ward 25. Bodinayakanur town has a total of 20333 households as per 2011 census. Number of households is the highest (1331) in Ward 1 in the north. On the other hand the lowest number of households is noticed in Ward 25 in the central part of the town. Kambam town has a total of 18567 households as per 2011 census. Number of households is the highest (1300) in Ward 19 in the east. On the other hand the lowest number of households is noticed in Ward 23 in the central part of the town.

With regard to density of population Theni-Allinagaram ranks first (11048 persons / sq. km) followed by Bodinayakanur (10415) and Kambam (10363).

If we consider sex ratio, Bodinayakanur has the highest average sex ratio of 1018 followed by Kambam with 1012. Theni-Allinagaram actually has a negative sex ratio indication a comparatively higher urban character. However one ward in Theni-Allinagaram has the highest sex ratio of 2004 females per 1000 males in ward 25.

Total literacy rate in all the Class II towns was more than 75%. Theni-Allinagaram has a slightly higher literacy rate than Bodinayakanur and Kambam. All the 3 Class II towns had almost the same average male literacy rate which is around 85.5%. in the case of female literacy Theni-Allnagaram ranks first followed by Kambam and Bodinayakanur.
Similarly Theni-Allinagaram had the highest share of SC/ST population among the Class II towns, while Bodinayakanur and Kambam has almost similar share of 7.7% of their population belonging to this category.

Work participation rate is high in Theni-Allinagaram and Kambam and is slightly lower in Bodinayakanur. Cultivators are more in Bodinayakanur (4.1%) followed by Kambam (2.7%) and Theni-Allinagaram (1.5%).

With regard to Agricultural labourers, Kambam has the highest share. Nearly 50% of the total workers here belong to this group. Bodinayakanur ranks next and nearly 25% of the total workers are Agricultural labourers. Theni-Allnagaram has the lowest share with only 8.1% of its total workers as agricultural labourers. In general only 2.5% of the total workers engage themselves in household industrial activities in all the three Class II towns.

Being the headquarters, Theni-Allinagaram has the highest share of Other workers category followed by Bodinayakanur and Kambam has only 48% of its total workers in this group.

Quickbird imagery acquired on 04th January 2012 and Town and Country Planning map 2011 have been used for land use classification. The image and Town Planning maps were overlaid on a common platform.

Nearly one-third (30.9%) of the Theni-Allinagaram comes under agricultural land use and is particularly concentrated in the southeastern and western parts of the town. Ward 32 has a share of 56.7% followed by wards 30 and 31 in southeast and ward 7 in northern part. Nearly 50% of the wards, mostly in the central and northeastern part do not have this type of land use. Residential land use has a share of above one-fourth (27.4%) of the total area. Ward 18 in the central part has a high share of 92.5% for residential land use. On the other hand residential land use has the least
share of 1.6% noticed in ward 25 in the southern part. Fallow lands ranked third place in terms of area with a share of 15.3%. Fallow land has a high concentration of above 50% in ward 3 in the northern part. Nearly half of the wards do not have this type of land use. Water bodies have a share of 6.4%. Nearly 50% of the area is in the northwestern ward 15 covered by water bodies. Scrub land accounts for 4.7%. Ward 24 has a high share in terms of scrub land. Industrial, plantation and public and semipublic land use have a share of above 3% each in the total area. Public and semipublic land use accounts for a share of 47.5% in the northeastern part Ward 20, followed by central part ward 22 which has a share of about 35.5% in the total area. Industrial land use is highly concentrated in ward 14 in the northern part (20.4%). Ward 10 in the northwestern part has a high concentration of plantation land use (25%). Commercial and educational types of land use have the lowest share of less than 3% each. Ward 25 has a high concentration of this land use (25.7%) followed by ward 22 (21.3%). Out of 33 wards this type of land use is not found in 18 wards. Educational land use has a high share of about 42% in ward 27. Similarly ward 23 in south and ward 6 have about 10% of their area under this land use. Road transport is the dominant factor for urban sprawl here.

In Bodinayakanur town Agricultural land has a share of 40% and is particularly concentrated in the northern and eastern parts of the town. It has a high share of 70% in northern part ward 2. Nearly two-thirds of the wards, mostly in the central and southern parts do not have this type of land use. In Bodinayakanur town this residential land use has a share of nearly one-third (30.7%) of the total area. Wards 5 and 28 in the central part are totally residential areas. Wards 15, 16, 26 and 27 in the southern part have a share of more than 90% of their area under this land use. Bodinayakanur town is one of the important market centres for cardamom. Commercial and fallow lands have a
minimum share of 5% each. No commercial land use is noticed in the northern wards of 2, 5 and 6 and the central wards of 19, 26 and 30. On the other hand ward 25 has a high concentration of this land use (67.9%) followed by ward 12 (43.1%). The central part wards of 4, 8 14 and the western part ward 23 have about one-fifth of their area under commercial land use. Fallow land has a high concentration (24.8%) in ward 17. Educational land use has a high share of about 31% in ward 18. Similarly wards 22 and 23 have about 20% of their area under this land use. Out of 33 wards this type of land use is absent in 20 wards. Plantation and public and semipublic land use have a share of 7% each in the total area. Plantation land use concentration is high in wards 1 and 33 has above 12% each. Water bodies are found only in wards 1 and 2. The public and semipublic land use accounts for a share of 7.5% in the total town area. Since railway station is located, ward 32 in the west has 40% area under this land use. Industries are concentrated in ward 1 and 33 in the northern periphery.

In Kambam town this residential land use has a share of above one-third (36.8%) of the total area. Ward 11 in the western part has a high share of 98.1% for residential land use. On the other hand residential land use has the least share of 13.1% in ward 4 in the northeastern part. Plantation gets second rank and has a share of 24.7% in the total area. Coconut plantation is dominant here. Northeastern part ward 4 has a high concentration of 47%. Nearly 50% of the wards, mostly in the central, western and eastern part do not have this type of land use. Fallow lands ranked third place in terms of area with a share of 12.1%. High concentration of 38.7% have ward 31 in the southwestern part. On the other hand ward 25 has least share. 20 wards do not have fallow lands. Agricultural lands have a share of 7.1%. It is highly concentrated in ward 10 in the northwestern part (19%). Commercial and scrub land accounts for a share of above 5% each in terms of total area. No commercial land use is observed in the
northern wards of 6 and 7 and ward 10, 11 and 33 in the west part. On the other hand ward 17 has a high concentration of this land use (25.8%) followed by ward 22 (22.2%) and ward 21 (21.8%). Ward 1 (21.7%) in the northern part and ward 32 (18.2%) in the southern part have a high concentration of scrub land use (21.7%). Public and semipublic land use has a share of 4.1%. Ward 30 has a high share of 29.5% in the southern part of the town. On the other hand nearly 50% of the wards do not have public and semipublic type land use. The industrial and educational types of land use have the lowest share of less than 3% each. Educational land use has a high share of about 8% in ward 12. It is followed by 7.6% in ward 27 in south. Water bodies have a very low share in the town. The satellite imagery of the town has no noticeable urban sprawl in any direction.

The term function in an urban context refers to a particular service or economic activity, offered by a town or city. Each function has a certain service area in terms of distance. The buffer zone is used to identify the service area analysis. For the present study constant width buffer zone is created to identify the educational and health care service area of Class II towns in Theni district.

Theni-Allinagaram town has a total of 17 hospitals at various levels of service. Out of 33 wards only 10 wards have medical facilities in the town. Some eastern part wards have no health service in the town. On the whole almost one-third of the area (36.7%) in Theni-Allinagaram town has better health service facility. Bodinayakanur town has a total of 25 hospitals at various levels of service. Out of 33 wards only 10 wards have medical facilities in the Bodinayakanur town. Northern part and northwestern part wards have no health service. In addition some eastern part wards also have a comparatively poor service with regard to health. Kambam town has a total of 19 hospitals at various levels of service. Out of 33 wards only 8 wards have medical
facilities in the Kambam town. It is better served with regard to health facilities. On the whole, more than 50% of the total area of the town has better services with regard to health care.

Educational facilities include Primary, Middle, High and Higher Secondary schools. For the present study only school educational service has been taken for detailed analysis. Educational functions grouped into two broad category. They are, 1. Primary education and 2, Higher secondary education.

Theni-Allinagaram town has 13 schools in primary education level. These schools located in 12 wards in different places of the town. Central and northern part of Allinagaram area have better service. On the other hand eastern part wards do not have such facilities. Nearly 42% of the total area of the town is better served with regard to Primary Education. In Bodinayakanur town 61.6% of the total area has a better service with regard to primary education. A total of 17 schools are located in 11 wards in different part of the town. The primary educational function is comparatively poor in the northern and northeastern parts of the town. In Kambam town there are 15 schools at primary level. These schools are distributed throughout the town and hence the town is served better. On the other hand a small area in the northwest and another area in the south have a comparatively poor service with regard to primary education.

Altogether 6 higher secondary educational schools serve all 33 wards in Theni-Allinagaram town. More than 80% of the total area has better service. Bodinayakanur town has 5 higher secondary educational institutions which are distributed all over the town. Out of 33 wards only 5 wards have this type of facilities. A total of 61.6% area has better service in the higher secondary educational function. Altogether 6 higher secondary educational institutions serve all the 33 wards in Kambam town. Almost the entire town is better served in this higher secondary educational function.
Educational services as well as health services in Kambam town are better placed while Theni-Allinagaram and Bodinayakanur have moderate level in these service facilities.

Among 5 Class III towns, only Periyakulam and Andipatti-Jakkampatti are taken for detailed analysis. Periyakulam is one of the oldest Municipalities of the State which was constituted as early as 1886. It became a third grade Municipality in the year 1886 and was upgraded as a second grade municipality in 1966 and is continuing till date. The area of the town is about 2.11 sq km. The population as per 2011 census is about 42976. The town is sub divided into 30 wards for administrative reasons. The town is mostly a plain region. The elevation of the town is about 280 m above mean sea level. Varahanadi River flows from west to east in the central part of the town.

Andipatti-Jakkampatti town was constituted in the year of 1955 as a second grade town panchayat. It became a first grade panchayat in the year 1961 and was upgraded as a selection grade panchayat in 1978. In the year 2004 the town was called special village panchayat. In the year 2006 the town became as selection grade town panchayat and is continuing till date. The area of the town is about 5 sq km. In the year 1991 the total population was only 19153. At present the population is about 27287 persons as per 2011 census. The town is sub divided into 18 wards for administrative reasons. The physiography of the town is mostly a rolling lowland region. The elevation ranges from 280 m to 350 m above mean sea level, from northwest to southeast direction. There is no river in the town.

In the year 1951 the total population was only 31000 in Periyakulam town. At present the population is about 42976 persons as per 2011 census. Thus the population has increased slightly in the last 60 years. Periyakulam town has a total of 25371 households as per 2011 census. Number of households is the highest (669) in Ward 1.
On the other hand the lowest number of households is noticed in Ward 23 in the south. Andipatti-Jakkampatti town has a total of 7512 households as per 2011 census. Number of households is the highest (747) in Ward 8 in the east. On the other hand the lowest number of households is noticed in Ward 10 in the central part of the town.

The average population density of Periyakulam town is 19516 persons per sq. km. in 2011 and it varies from 3889 persons to 101909 persons/sq km in the town. Andipatti-Jakkampatti town is 5485 persons per sq km. in 2011. Ward 2 in the central part has a high density of 26100 persons/sq.km.

Periyakulam town has an average sex ratio of 1013 females per 1000 males in 2011. It is comparatively high sex ratio. High sex ratio of 1095 females/1000 males is noticed in Ward 9 in the eastern part. On the other hand low sex ratio of 919 is found in Ward 23 in the southern part. Andipatti-Jakkampatti town has an average sex ratio of 1003 females per 1000 males in 2011. A very high sex ratio of 1189 females/1000 males is noticed in Ward 16 in the northwestern part. On the other hand low sex ratio of 893 is found in Ward 2 in the central part.

In the year 2011 total literacy rate (Excluding 0-6 Population) in Periyakulam town was 79.8%. A very high literacy rate of 89.1% is noticed in the southern part Ward 23. On the other hand the lowest level of 66.1% is noticed in the eastern part Ward 28. In Andipatti-Jakkampatti town was 76.7%. A very high literacy rate of 88.3% is noticed in the southern part Ward 8. On the other hand the lowest level of 55.8% is noticed in the northwestern part Ward 17.

Periyakulam town has the highest male literacy of 84%. Central part Ward 18 had the highest level in the town. However ward 24 in the southern part has the lowest level of male literacy rate (70.5%). Andipatti-Jakkampatti town has a high male literacy of 82.7%. Southeastern part Ward 8 has the highest level of 88.3% in the town.
However ward 17 in the northwestern part has the lowest level of male literacy rate (68.1%).

Periyakulam town has a female literacy of about 75.8%. Highest level of 89.3% is noticed in Ward 23 in the southern part. On the other hand the lowest level of 57.6% is noticed in the ward 28 in the eastern part. Andippatti-Jakkampatti town has a female literacy of about 70.7% which is comparatively high than the district average (63%). Highest level of 86.8% is noticed in Ward 10 in the southern part. On the other hand the lowest level of 43.5% is noticed in the ward 17 in the northwestern part.

The percentage share of SC/ST population in Periyakulam town is about 15%. Ward 28 has very high share of 95% in the year 2011. However the nearest ward 10 has no SC/ST population during the study period. High concentration of SC/ST population is noticed in the eastern part of Periyakulam town. In Andippatti-Jakkampatti town is about 9.9%. Among the wards ward 6 has very high share of 55% in the year 2011. On the other hand the least share of SC/ST population concentrated in ward 11 in central part.

In Periyakulam town as a whole, 31.2% of the total population are engaged in various kinds of economy based activities. The maximum of 37.6% is found in Ward 8 and the minimum of 16.9% work participation rate found in Ward 28. In Andippatti-Jakkampatti town as a whole, 37.1% of the total population are engaged in various kinds of economy based activities. The maximum of 62% is found in Ward 17 in the northwestern part and the minimum of 28.9% work participation rate found in Ward 7 in the northeastern part.

The total number of cultivators in Periyakulam town is only 523 (1.4%) persons in 2011 census. However the share of cultivators varies from a minimum of 0.3% in ward 30 in the eastern part to a maximum of 9.4% in ward 4 in the northwestern part.
Andipatti-Jakkampatti town is only 124 persons. It has a very minimum share of 1.3% in the total main workers, because the study area is basically a town. Andipatti-Jakkampatti town has the highest share of cultivators in the ward 6 in the northeastern part. On the other hand ward 13 in the southwestern part has a minimum share. Wards 14 and 16 have no cultivators of the town.

Of the total, only about one fifth (21.3%) of people are engaged as labourers in agricultural activities in Periyakulam town. In the northern part Ward 1 has the highest concentration of 80.5% agricultural workers in the town. On the other hand ward 26 in the central part has a low share of 0.2% agricultural workers. In the case of Andipatti-Jakkampatti only about 7.7% of people are engaged as labourers in agricultural activities in the town. The central part ward 2 has the highest concentration of 32.6% agricultural workers in the town. On the other hand ward 14 in the northwestern part has a low share of 0.1% agricultural workers.

In Periyakulam town the household industrial workers have a low share of only 3.5% in the occupational structure. However the share of Household industrial workers varies from a minimum of 0.2% in ward 18 in the central part to a maximum of 20.2% in ward 7 in the northeastern part. Textile based, Engineering and allied and Chemical and Pharmaceutical based industries have a notable concentration in this town. In Andipatti-Jakkampatti town the household industrial workers have a share of 11.4% in the occupational structure. Jakkampatti area is very famous for handloom industries particularly sungudi sarees. Textile based industries have a notable concentration in this town. However the share of Household industrial workers varies from a minimum of 0.5% in ward 10 in the central part to a maximum share of 68.1% in ward 14 in the northwestern part.
The average share of Other workers category in Periyakulam town is about 73.8%, which is very high than the district average (38.8%). Among the wards the concentration of other workers group is high (92.3%) in ward 23 in the central part, while low (17.3%) in the ward 1 in the northern part of the town. In Andipatti-Jakkampatti town the average share of Other workers category is about 79.6%. Among the wards the concentration of other workers group is high (97.8%) in ward 10 in the central part, and low (31.8%) in the ward 14 in the northwestern part of the town.

In Periyakulam town this residential land use has a share of 42.9% of the total area. Ward 12 in the central part of Vadakarai area has a high share of 92% for residential land use. On the other hand residential land use has the least share 9.4% in ward 30 in the eastern part. The plantation land use has a share of 19% in terms of total area. Mango, Coconut and Banana plantations are dominant here. Northwestern part ward 3 has a high concentration of 64.4% in plantation land use. Nearly 40% of the wards, mostly in the northern and southern part, do not have this type of land use.

Agricultural land is the next most important type of land use which has a share of 9.5%. Ward 16 which has a share of 36.9% followed by ward 15 in southwest and ward 1 in northern part. On the other hand Ward 19 has the least share of 12.8% in their total area.

Public and Semipublic land use have a share of 32.1% in Ward 14 in the western part of the town. However ward 1 has the least share (0.7%) in this land use. 14 wards do not have this type of land use.

Fallow lands, Water bodies, Commercial and Educational land use have a share of 4.8% each. There are no major industries in the town. Commercial land use is highly concentrated in the southern part. Ward 14 has the least share of 0.6% in this land use category. On the other hand ward 23 has a high concentration of this land use (40%).
Educational land use has a high share of about 26.8% in ward 4 in the northern part, followed by ward 5 and 6 (15% each). Out of 30 wards this type of land use is not found in 12 wards. Out of 30 wards fallow land use is not found in more than 75% of wards. Fallow land has a high concentration (17.8%) in ward 1 in the northern part. River Varahanadi is the important water source in this town. Out of 30 wards only 14 wards have water bodies. Ward 28 in the eastern part has a high concentration of this land use category.

In Andipatti-Jakkampatti town, fallow land use has a share of 34.7% of the total area. Out of 18 wards this type of land use is not found only in 2 wards. Fallow land has a high concentration (66.8%) in ward 3 in the northern part. On the other hand ward 11 in the central part has the least share of 4.2%. Agricultural land is the next most important type of land use which is the share of 33.7%. Ward 1 in the southeastern part have a high concentration of agricultural land use which has a share of 53.4% followed by wards 6 and 7 in northeast, ward 12 in southwest and 14 in the northwestern part has high concentration of agricultural land use. However the residential land use has a share of only 23.5%. It comes third place in the town. Wards 15 and 18 in the northwestern part of Jakkampatti area have 100% for residential land use. On the other hand residential land use has the least share 9.1% in ward 1 in the southwestern part. Scrub lands ranked fourth place in terms of area with a share of 4.9%. Plantation land use has a share of 2.4%. Water bodies have the least share of 0.9% in the town. There are no major industries in the town.

Scrub, Plantation and Water bodies have a low share of less than 10% in the total area. Scrub land concentration is found in only 6 wards and ward 1 has the highest share of 19.5% in the town. The plantation land use has a share of 2.4% in terms of
total area. Central part ward 11 has a high concentration of 8.4% in plantation land use. Water bodies are found only in wards 1 and 6.

Periyakulam town has 26 hospitals distributed in different wards. Out of 30 wards only 12 wards have medical facilities in the town. Northern part and northeastern part wards have no health service within the 200 m zone. Within 500 m zone almost all wards have better service in health. Out of 18 wards 11 wards have medical facilities in the Andipatti-Jakkampatti town. If the buffer zone of 200 m is considered, it may be reason that nearly 70% of the town is poor in health service. On the other hand 500 m buffer zone highlighted that nearly 66% of total area has better service in health.

Periyakulam town has 27 schools in primary education level. These schools are located in 20 wards in different places of the town on the whole, more than 95% of the total area of the town has better services with regard to primary education. In Andipatti-Jakkampatti town there are 11 schools at primary level. These schools are located in 10 wards in different places of the town. On the other hand southern part wards do not have such facilities.

Periyakulam town has only 3 higher secondary educational schools which serve all the 30 wards. Almost 100% of the total area has better service. Altogether 3 higher secondary educational institutions serve all the 18 wards in Andipatti-Jakkampatti town. Almost 80% area of the town is better served in this higher secondary education function.

Chinnamanur town was constituted as a municipality 1977 and was upgraded as a second grade municipality in the year 1984. The area of the town is about 26 sq. km. of which 6.65 sq. km. in under various types of urban uses and the rest of 19.35 sq. km. under non urban use agricultural activities. The elevation of the town is about 350 m to
550 m above mean sea level. In the year 1951 the town had a population of about 18914. At present the population is about 42305 persons as per 2011 census. Chinnamanur town is subdivided into 27 wards for administrative reasons. The town has a total number of 11545 households. The population density of the town is 1627 persons per sq km. The town has an average sex ratio of 1007 females per 1000 males. In the year 2011 total literacy rate (Excluding 0-6 Population) of the town was 75.6%. Male literacy is higher (80.4%) than the average literacy. On the other hand female literacy is comparatively less (70.9%) in the town. SC/ST population has a share of 17.1% to the total population. Work participation rate is low level and amount to 36.7%. Of the total work participation rate Other workers category has the highest concentration of about 69.9%. The agricultural labourers have a share of one-fourth (24.7%) in the town. Cultivators and Household industrial workers have least share.

Gudalur town was constituted as a town panchayat 1968 and was upgraded a third grade municipality in the year 2004. The total area of the town is about 40 sq. km. Gudalur town is subdivided into 21 wards for administrative reasons. In the year 1961 the town had a population of about 24635. At present the population is about 41915 persons as per 2011 census. The town has a total of almost 12000 households. The population density of the town is 1047 persons per sq km. The town has a positive sex ratio of about 1006 females per 1000 males. Nearly 70% of people are literates in the town. Male literacy is higher (75.3%) than female literacy (58.4%) in the town. Less than 10% peoples belong to SC/ST category. Work participation rate is at a moderate level of 45.9% in the town. Of the total work participation rate agricultural labourers category has the highest concentration of about 70.6%. This may be due to a higher concentration of tea plantation workers who move from this town to nearby areas of
Tamil Nadu and Kerala. Other workers have a one-fifth share of total workers in the town. Cultivators and Household industrial workers have the least share.

The total area of the town is about 11.9 sq. km. The Uthamapalayam town is subdivided into 18 wards for administrative purpose. As per 2011 census the population is about 29050 persons. The town has a total number of 7508 households. The population density of the town is 2441 persons per sq km. The town has an average sex ratio is 1009 females per 1000 males. In the year 2011 total literacy rate (Excluding 0-6 Population) in the town was 76.8%. Male literacy is higher (80.6%) than the average literacy. On the other hand female literacy is comparatively less (73.1%) in the town. SC/ST population has a share of 12.8% to the total population. Work participation rate is at a low level of 35.7% in the town. Of the total work participation rate Agricultural labourers and Other workers category have the highest concentration of above 45% each. The remaining work participation category of Cultivators and Household industrial workers has the least share in the town.

Theni district has 15 Class IV towns as per 2011 census. Of these Class IV towns total population is high (19285) in Devadanapatti town. On the other hand Hanumandanpatti has the lowest total population. Other towns have moderate population. Households also exhibit same status as population. Palani Chettipatti town has the highest density of population. Thevaram has the lowest density of 448 persons per sq. km. 50% of the towns have a density of below 1000 persons per sq. km. Kamayagoundanpatti town has a high sex ratio of 1058 females per 1000 males. One-third of the towns has positive sex ratio. Palani Chettipati town has a high literacy rate of 78.6% in total population and also the same status in male and female literacy. Genguvarpatti town has the least share (63.9%) in total literacy rate and also in male/female literacy. Thamaraikulam town has a share of 44.6% of SC/ST population.
On the other hand Kamayagoundanpatti has the least share of 5.4%. Odaipatti town has a high concentration of total main workers. Cultivators are high in Melachokkanathapuram. Odaipatti town has one-third of workers engaged in agricultural activities. On the other hand household industrial workers concentration is high (more than 4%) in Vadugapatti and Thamaraikulam towns. Other workers are comparatively high (91.2%) in Palani Chettipatti town, because the town is located adjacent to Theni-Allinagaram town.

Pannaipuram town has high population and also a higher number of households compared to the other Class V towns. Population density is high (981 persons per sq. km) in B. Meenakshipuram town. On the other hand the least (426) density is found in Kuchanur. B. Meenakshipuram and Markayankottai towns have a negative sex ratio of 984 females per 1000 males. Nearly 70% of peoples come under literates category. Male/female literacy is also moderate in the towns. 50% of people are engaged in workers category. Agricultural labourers has the highest share of nearly 70% in work participation category compared to the other workers.

Highways Township is only town in Class VI category. The town has a population is about 4882 persons as per 2011 census. Female population is high compared to the male population. However male literacy is higher than the female literacy rate. SC/ST population has a share of 66.3% in the town. More than 70% of people are engaged in Other workers category. One-third of work participation category is agricultural labourers in the town. The remaining workers category has the least share in this town.

From the detailed analysis of the spatial pattern and functional character of urban centres in Theni District the following broad inferences are drawn.

1. All the Class III towns have low urban pull power
2. All the Class II towns have shown only minimal growth

3. Agriculture and related activities dominate the entire district and marketing of these products forms the basis for urban functions

4. No major industries are located and most of the manufacturing sector is under small scale category

5. There is large scope for food processing, textile and forest based products which can increase the pull power of the urban centres.

6. Though rail transport is present, road transport is the most crucial factor in urban expansion.

7. All selected Class III towns had a higher literacy rate than the Class II towns.

8. Even in Class II towns agriculture, fallow land and plantations have the maximum share in land use than residential, commercial and public and semipublic land use types.

9. The available characteristics of towns indicate that urban growth will be minimum in the near future.

10. Most of the small towns and even some of the Class III towns exhibit characteristics of “outgrown villages” and not true urban characters.

11. Kambam town has good transport facilities but this did not help to further urban growth, mainly because of heavy its dependence on agricultural activities.

12. Improvement of recreation facilities such as tourism attractions may help to accelerate the urban pull power character of Kambam and Periyakulam towns.

13. The study area as a whole does not exhibit ‘true’ urban character in the towns and dominance of agricultural based activities makes the towns to have only retarded growth in the near future. As suggested above, development of agro
based / forest based product based industries and tourism may infuse better urban characters to the towns.

14. One of the advantages for industrial growth is the availability of wind power which is now being harnessed in the study area. Wind energy and hydel power may help the industrial growth so that urban base of the towns can be strengthened.

Scope for Further Research

The present study has not taken all categories of towns in Theni district. However, each town has to be analysed in detail with regard to the spatial pattern and their function. Hence Class IV, V and VI towns may be taken separately for a detailed investigation. The study can be extended to bring out temporal variation by taking two time points in each town. This may help the improvement of urban services in these settlements in future.