URBANISATION AND SOCIO-ECONOMIC PERFORMANCE OF KERALA ECONOMY

Thesis submitted to the University of Calicut

For the award of the degree of

Doctor of Philosophy in Economics

By

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DECLARATION

I, Glady Paul, do hereby declare that this written account entitled "**URBANISATION AND SOCIO-ECONOMIC PERFORMANCE OF KERALA ECONOMY**" is a bonafide record of research work done by me under the guidance of Dr . D. Retnaraj, Professor (Retired), Department of Economics, University of Calicut, Dr . John Matthai Centre, Thrissur. I also declare that this thesis has not been submitted by me earlier for the award of any degree, diploma, fellowship, or other similar title of recognition.

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ACKNOWLEDGEMENT

With great respect and love, I express my deep sense of gratitude to my Supervising Teacher, Dr. Retnaraj D., former Head and Professor, Department of Economics, University of Calicut, Aranattukkara, Thrissur for giving me invaluable guidance, unfailing support, and dedication towards my work. His role will remain as a source of enduring inspiration throughout my life. He has taken immense pains in the formulation of this dissertation and given me the sort of unstinted cooperation for which I can find no words adequate to express the sense of gratitude, I feel towards him. This is formal acknowledgement but an adequate expression of my gratitude.

I am greatly indebted to my co-guide Dr. Shyjan Davis, former Head and Associate Professor, Department of Economics, Dr. John Matthai Centre, Thrissur, who have read out the entire thesis and provided with fruitful and useful suggestions. His comments were extremely helpful in pointing out the faults in this thesis. I take this opportunity to acknowledge my feelings of gratitude towards him for his keen interest, constant encouragement, and dynamic supervision without which, it could not have been possible for me to complete this work.

It is a pleasure to express my indefinable gratitude to Dr . Zabeena Hameed .P, Head and Associate Professor, Department of Economics, University of Calicut for all the valuable suggestions and mentally support extended to me in all the aspects connected with this work. I record my sincere thanks to Dr. K.X. Joseph and Dr. Mani K.P and Dr . K. V. Ramachandran, Former Head of the Department for their valuable suggestions and valuable comments related to my research work.

I express my heartfelt thanks to Dr. Chacko Jose P, Head of the Department of Economics, Sacred Heart College, Chalakudy, for all sorts of encouragement and moral support rendered to me for the completion of research work. I extend my heartfelt thanks to Prof.P R Bose and Dr E.M Thomas ,Department of Economics, Christ College, Irinjalakuda for the warm encouragement, mental support rendered to me for the successful completion of this work.

I express my sincere thanks to the Librarian of Dr. John Matthai Centre Mrs. Sreeja and other non-teaching staff in the Department of Economics, especially to Bala

CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

Abbreviation	Description
CDS	Current Daily Status
CDI	Composite Development Index
CSO	Central Statistical Organization
CWS	Current Weekly Status
DDP	District Domestic Product
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
IMR	Infant Mortality Rate
LP	Labour Productivity
NSDP	Net State Domestic Product
PS	Principle Status
RI	Rural Income
UI	Urban Income
UII	Urban Intensity Index
WPR	Worker Population Ratio

Abstract

India is one of the fast-growing developing economies, also viewed a gradual increase of urban population since independence. The country had 17.3 per cent of the urban population in 1951 which increased to 31.16 per cent in 2011 census.The state Kerala witnessed rapid urbanisation among the other states in India, where the urban population increased from 25.9 per cent in 2001 to 47.7 per cent in 2011. Kerala always has a top position in many development indicators compared to the major states. It is viewed that the urbanisation in Kerala is not restricted to main cities and towns. Sudden jump of the urban population of about 93 per cent during 2001-2011 in the state provides a distinct phenomenon to the researchers. The state Kerala recorded 362 new Census Towns in 2011 census which were the rural areas in 2001 census.

The state of Kerala has been known for its features of high social development indicators without a proper economic base called a Kerala model of development. Kerala is very unique in several respects among the other states of India, such as its community structure, characterized by a rural-urban continuum.Our study tries to examine comprehensive urban growth and socioeconomic performance of each district of the Kerala economy. For this purpose, at first, we try to examine, is there any variation in the increase of the level of urbanisation in the fourteen districts of Kerala. We try to understand urban income contribution to the whole economy and examining the per capita income of urban parts of each district of the Kerala economy. Next, we look at the performance of socio-economic development indicators among the urban areas of each district which provide a clear insight into the level of disparities among districts in the Kerala economy. By studying the socio-economic development of each district, we get an impression to what extent emphasis should be given, in so far as the districts are concerned and the backward areas as to more attention should be paid especially in the social variables like, health, education, basic household amenities etc. Thus, the present study tries to explore the performance of socio-economic indicators of urban areas of each district and to pinpoint the areas and districts where more attention needed.

The present study has been based on secondary data collected from authentic sources. To have scientific interpretations and analysis of urbanisation is taken out

from the census 1971 to census 2011. The study tries to identify the performance of sub-sectors of the economy and economic growth process from 1990-91 to 2011-12 for analyzing the association between urbanisation and economic performance of the Kerala economy.Further, the General Economic Tables, General Population Tables and Migration Tables, Households and social amenities tables published by the Census of India for the years 1971, 1981, 1991,2001 and 2011 are used.

According to Urban Intensity Index in 2011, the intensity of urbanisation is remarkably high in the districts like Ernakulam, Kozhikode, Thrissur, and Kannur.The districts like Thiruvananthapuram, Alappuzha, Malappuram, Kollam, Kasaragod, Kottayam, and Palakkad had moderate level of intensity of urbanisation can be found in 2011. Similarly, Pathanamthitta, Idukki, and Wayanad had a low intensity of urbanisation according to UII in 2011.

We estimate that, in 1990-91, in India, around 43 per cent of income coming from urban areas and whereas in Kerala accounted for a mere 30 per cent of urban income. In 2000-01, the share of urban income of India was 36 per cent and in Kerala, it was only around 29 per cent. In the year 2011-12, the urban income of Kerala was around 49 per cent, and 47 per cent in India. The 2011 census showed that Kerala has 47.72 per cent of the urban population and this population produced around 49 per cent of income to the state income.

Inter-district variation in economic performances shows that in 2011, the high level achieved in the urban areas of Ernakulam district and Thiruvananthapuram district. The medium level of economic attainments achieved in the urban areas of Thrissur, Idukki, Palakkad, Kottayam, Pathanamthitta districts is above the state average. The districts like Kasaragod, Alappuzha, Kannur, Kollam, Wayanad districts also attained a medium level of an economic index. Though, these districts performed below the state average. The low level of economic index attained by the major districts like Kozhikode and Malappuram.

Relatively high values of social development indicators had achieved by the most urbanised district Ernakulam compared to other districts. Though the Pathanamthitta and Idukki, with their low urbanisation, achieved a better level of social development. The districts like Kottayam, Thrissur, Thiruvananthapuram,

Kozhikode, Kollam, Malappuram, Palakkad and Alappuzha attained a medium level of social development. Relatively low social development could be seen in the Kasaragod and Wayanad districts.

We can see that the overall performance considering socio-economic indicators (Composite Development Index), the urban area of Ernakulam and Idukki districts performed well as compared to the other districts. We can say that the districts like Kasaragod, Wayanad and Malappuram districts performed relatively extremely low as compared with other districts. The low level developed districts necessitate the progress of various aspects of the developmental indicators. It can be noted that the level of urbanisation not an indicator of development in Malappuram district. If urbanisation takes place more or not, these districts need more attention for their better performances in economic and social indicators.

Keywords : Urbanisation,Urban Intensity Index, Economic Indicators,Social Indicators,Composite Development Index

Chapter 1
Design of the Study

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Design of the Study

1.1 Introduction

The rapid growth of the urban population is observed in developing countries, which considered a key process of affecting overall development in the twenty-first century. The phenomenon of urbanisation is still ongoing in these countries. It functions as an index of transformation and modernisation i.e., a process of the socio-economic transformation of an area and people directed to the increase of non-agricultural activities which is an essential factor for general socio-economic development. It often generates remarkable socio-economic transformation in the surrounding areas. This process by which rural areas turn into towns and grow into cities. An increasing level of urbanisation is a crucial indicator of socio-economic development.

It is expected that urban growth would have a significant influence on the economy and social life. By way of urbanisation, socio-economic development has been led to increased productivity in the economy. Also, the per capita income and consumption levels have been enhanced by urbanisation. Some of the studies suggested that in countries that rapidly urbanised, their urban-rural income gap increase in the beginning stage and decrease only after a significant part of the population have transferred to the urban centre. In this situation, the development of towns and villages should become well balanced; local development will be sustainable. Therefore, it is significant to study the socio-economic performance of each region in the pace of urbanisation.

India is one of the fast-growing developing economies, also viewed a gradual increase of urban population since independence. The country had 17.3 per cent of the total population lived in urban areas in 1951 which increased 27.8 per cent in 2001 and 31.2 per cent in the 2011 census. Urbanisation is a process that is associated with social and economic impacts in urban areas. It may also be described as a function of social and economic changes taking place over time. According to the Mc Kinsey Report (2010), India's urban growth led to a change in the economic structure. India's GDP split up almost evenly distributed between urban and rural areas in 1995 and 58

per cent of overall GDP accounted for the urban share in 2008. It is estimated that by 2030, in India, urban areas will contribute almost 70 per cent of India's GDP[1].

The state Kerala witnessed rapid urbanisation among the other states in India, where the proportion of urban population enlarged from 25.9 per cent in 2001 to 47.7 per cent in 2011. Kerala always has a top position in many development indicators compared to the major states. It is viewed that the urbanisation in Kerala is not only restricted to main cities and towns but also expanded in the urban agglomerations. The sudden jump of the proportion of urban population around 93 per cent during 2001-11 in the state gives a distinct development process to the researchers. The state of Kerala recorded 362 new Census Towns in the 2011 census which were the rural areas in the 2001 census. In the state, the phenomenon of urbanisation by implosion can be seen in the emergence of these census towns. It is mainly due to the phenomenon of 'urbanisation by implosion' It is some other form of urbanisation experienced in third world countries that is proceeding mostly unrecognised in rural areas of the vast regions[2](Qadeer,2004). The significant emergence of census towns of Kerala is mainly based on this phenomena.

In a developing society, there may be a social and economic change associated with the urban style of living. Sreekumar (1993) pointed out that the settlement pattern of Kerala has certain exclusive features. Political factors and land settlement factors along with the high density of population in the state brings such unique features for the state. The state has become well known for its unique social development pattern and displays high social development indicators among the other states of India. Retnaraj (1997) viewed that Kerala witnessed rapid urbanisation in the eighties and leading to the emergence of more towns, cities, and metropolises. The heavy concentration of population in these urban centres without proper settlements and social developments would lead to poverty[3].

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[1] Mc Kinsey Global Institute (2010), India's urban awakening: Building Inclusive cities, sustaining economic growth
http://mohua.gov.in/upload/uploadfiles/files/MGI_india_urbanization_fullreport011.pdf

[2] Qadeer, M. A. (2004). Urbanization by implosion. Habitat International
https://www.sciencedirect.com/science/article/pii/S0197397502000693

[3] Retnaraj. D (1997). Urbanisation and Urban Poverty in Kerala. Indian Journal of Regional Science. Vol. XXIX, No, 2,1997.pp 117-125

The outstanding social accomplishments without a solid economic base through the intense public action known as the Kerala Model of Development. The state concentrated on stepping to economic development ahead of attractive social changes. The world-famous development economists Amartya Sen and Jean Dreze (2010) were also highlighted the Kerala Development experiences. Sen regard as an investment in capability enhancing sectors or social infrastructure will certainly bring economic development[4].The state has performed progressively in terms of social indicators with its remarkable performance in the health and education sectors. It should be noted that the achievements of social indicators like, education, health, welfare schemes should ensure a strong economic base with a balanced and equitable development in the state Kerala can become a real example of development. Without a strong economic base, it is threatened with the sustainability of social progress. So, the present study tries to analyse the socio-economic performance of urban Kerala within the path of rapid urbanisation.

1.2 Review of Literature

Earlier than entering into the study of any topic, it is required to examine the relevant literature related to it. For better understanding, we categorised related literature review with three heads.

- The urbanisation and development in world economies.
- The urbanisation and development in India and its states.
- The urbanisation and development in Kerala economy.

1.2.1 The urbanisation and development in the world economies

In the early 19th century, most of the urbanisation followed in developed countries. Fast urbanisation occurred during the industrialisation period, especially in European countries and North America. Here, we try to examine various literature related to urbanisation, modernisation and economic growth and development that occurred in various developed and developing countries.

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[4] Dreze, J., and Sen, A. (2010). India: Development and participation. Oxford: Oxford University Press.

Bairoch and Goertz (1986), examined the condition from the beginning of the industrial revolution at what time the levels of urbanisation were reliant on geographical features and historical circumstances. Through with 19th century in which agrarian production and industrialization explained the level of urbanisation. It is vital to study the several factors both economical and non-economical that help to the urbanisation in Europe along with other countries now considered as developed. Some of these countries that started their modernization early developed as the comparatively high level of urbanisation than those countries which began earlier. Their comparative econometric study found that economic growth pushed to the growth of fast urbanisation, with industrialisation presence the most significant factor for Europe. Added to the crucial elements are trade, growth of population, landscape, infrastructures like railroad networks and system of industrialisation.

Lucas (1988) clearly reflect how urbanisation influences economic growth mainly by the higher stream of knowledge and ideas connected to agglomeration in cities. Historically data deliver some perceptual experience into the growth of urbanisation and per capita income. In the US, per capita income and urbanisation rates stimulated jointly until around 1940, once the urbanisation level attained near to 60 per cent. Subsequently, per capita income extended more rapidly. Possibly, at the early phases, the rate of urbanisation and per capita income growth were about at identical rates, where a rise in productivity indicate the movement of resources from lower productivity activities.

Henderson (2003) quantitatively examined how much are the economics sufferers from substantial deviations from any ideal degrees of urban concentration. He argued that urbanisation characterizes sectoral shifts within the economy as the development process, but it is not a growing stimulant by itself. Yet, the pattern of urbanisation takes place and the degree of urbanisation had powerful effects on productivity growth. Urbanisation is a "by-product" of the change out of agriculture and the development of a modern manufacturing sector, as economic development proceeds[5]. However, it may be true that, for countries in the urbanising stage, there may be the best degree of urbanisation that promotes productivity growth.

[5] Henderson, V. (2003). The urbanization process and economic growth: The so-what question. Journal of Economic growth, 8(1), 47-71. https://doi.org/10.1023/A:1022860800744

Engelstoft and Andersen (2004), argued that cities and their surroundings are continuously altering in the last two centuries and urbanisation has exchanged a principally rural landscape for an urban landscape. While urbanisation speciously has transformed most of the western developed countries, the speed of urbanisation is nowadays highest in economically less developed countries. Still, it does not mean an end of urbanisation or steadiness of the urban landscape in highly developed countries. The study pointed out that at the more intelligible and constant process of urbanisation that comprehensive analysis has found. The possible availability of workplaces showed that the labour market concentrations and their location lead to the population concentrations.

According to UN-Habitat (2006), urbanisation is one of the most significant worldwide trends in the 21st century. Over 50 per cent of the world population now lives in urban areas, while about 60 per cent of the world's population will live in urban areas by 2030. Almost 90 per cent of the world's urban population growth between now and 2030 will occur in developing countries. From now, cities are the primary attention of significant global challenges. Urbanisation is known to be a vehicle for the global economic and social transformation of an economy. Planned urbanisation projected to carry about rapid economic progress and wealth, with industrialisation as its result. Hence, planned urbanisation will lead to higher productivity and rising standard of living and better quality of life. Cities are branded to be centres of innovation and modernisation, primarily because of the concentration of people, availability of resources and activities are likely to a favourable change[6].

Mc Granahan and Martin(2012)examined urbanisation and development experience and policies of BRICS' countries. They pointed out that a higher level of income usually is accompanying with higher levels of urbanisation, which brings benefits of urbanisation with differentiating out of agriculture. The economic advantages of urbanisation come from economies of agglomeration which include benefits related to sharing of more significant and extra efficient facilities, matching of among a more variety of suppliers and users and learning through more natural communication.

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[6] United Nations Human Settlements Programme, UN-Habitat(2006) Annual Report. https://mirror.unhabitat.org/pmss/getElectronicVersion.aspx?nr=2343andalt=1

Enlightening the urbanisation process exist key to proper economic, social, and environmental development of an economy.

Turok and McGranahan,(2013), reviewed the arguments and indications of the association between urbanisation and socio-economic development especially experienced in Africa and Asia, which helps to raise the standard of living in the economy. Their main findings are that the effect of urbanisation on evolution and the level of agglomeration economies were very flexible, and no simple linear relationships exist between urbanisation level and productivity and economic growth. The capability of urbanisation to encourage growth is expected to depend on favourable infrastructure and organised institutional settings. Take away constraints to rural-urban movements may empower economic development, with effective policies, efficient markets, and better infrastructure generations. Governments should implement ways of improving systems of urbanisation that bring economic growth, poverty reduction and a healthy environment.

Arouri, Youssef, Nguyen, and Soucat(2014), examined the consequence of urbanisation on human resources and GDP per capita of countries, especially in Africa. They showed an inverted U curve relationship between the share of urban population and GDP per capita. Urbanisation also has an effect on human capital, such as education level and health indicators. Urbanisation is restyling the sectoral composition of the economy, in the most urbanised economies, the service sector accounts for 51 per cent of GDP. In the less urbanised countries, 76.1 per cent of total employment are in the agriculture sector[7].

From the above discussion, we can derive certain conclusions about the relationship between urbanisation and economic growth and development in the developed economies. Almost all the developed countries are backed by strong industrialisation and manufacturing trading sectors. The growth of these sectors is the main driving force of urbanisation in developed regions. Therefore, increases in the rate of employment in the services sector that makes up the creation of urban jobs play a

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[7] Arouri, M. E. H., Youssef, A. B., Nguyen-Viet, C., and Soucat, A. (2014). Effects of urbanization on economic growth and human capital formation in Africa. https://www.researchgate.net/publication/281185380

significant part in economic growth. Similarly, in most developing countries, rapid urban growth is connected with demographic variables like fast population growth in urban areas or migration. The low rate of urban mortality especially in developing countries leads to a high urban natural rate of population growth than the factor of migration. The process is related to over-crowding, which provide perception support in the form of urbanisation without proper economic growth. However, the proper intervention of government authorities can bring consistent development in these countries along with fast-growing countries.

1.2.2 The urbanisation and development in India and its states

Urbanisation in India can be highlighted as uneven and leads to the growth of large cities. The process of urbanisation occurred without proper industrialisation and a stable economic base. The urban growth takes place as an outcome of demographic explosion and high level of rural poverty induced for rural-urban migration. According to Bhagat and Mohanty (2009), urbanisation arises mainly due to rural push factors. Similarly, it can be seen rural-urban migration was of poor quality which leads to the low quality of urbanisation. The process of urbanisation in all India and various states are not identical. A regional variance in urban growth can be distinctly visible in India. Several geographers, development economists, local development planners analysed these differences and brought various reasons for the process and prospects of such growth patterns.

Bose and Bhatia (1978) argued that urbanisation is treated as the child of the industrial revolution. So, with the growth of industrialisation, the speed of urbanisation increases. There are five main factors, stand out as the elements of urbanisation such as agricultural revolution, the industrial revolution, commercial revolution, increasing efficiency of transportation and demographic revolution. The process of urbanisation is an always continuing process that is not merely related to industrialisation but relates to the whole degree of factors simple the process of economic growth with social change[8].

Siva Raju and Reddy (1986) argued that urbanisation is the process of changing to urban by shifting to cities and from primary sector activities to other non-agricultural

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[8] Bose, A., and Bhatia, J. (1978). India's urbanization, 1901-2001. New Delhi: Tata McGraw-Hill

activities and change in behaviour patterns. Thus, urbanisation refers to the concentration of the population through movement and redistribution. It is linked with industrialisation or overall economic development. As a result of the move from an agricultural to an industrial-based society, production multiplies and diversifies as new products appear and the population increases rapidly. Workers leave the countryside and flock in high numbers to towards and factories. Their occupations become specialised and change towards skilled traders, and machine operations. Industrialisation affects not only the role and growth of urban areas but also the type of growth in urbanisation as well as the relative level of economic development involved in urbanisation. Some of the advantages of increasing urbanisation are more organised in nature of the economic activity, higher literacy, etc., on the other hand, housing shortages, growth of slums, problems of civic facilities, and issues of environment and lot of other problems created out of the high density of population are disadvantages of increasing urbanisation.

Kundu (2000) contended that the process of economical liberalisation or connected structural improvement could change rural-urban migration with an increasing rate of urbanisation. Connecting India with the world economy could lead to an immense flow of foreign investment and a growth in induced investment subsequent to addition in employment possibility inside or near the prevailing urban centres. The urbanisation process is firmly related to the industrial process and has an essential role in the socio-economic development of an economy. Additionally, urbanisation represents more economic development of an economy.

Datta (2006) attempted to illustrate the urbanisation process over the century particularly on the pace of urbanization and urban morphology by examining census data of India. (1901-2001). Here analysed the level of urbanisation, primacy pattern, the interstate variation of urbanisation, components of urban growth and migration trends. Bhagat and Mohanty (2009) viewed that there is an increasing chance of rural-urban migration between states, where migration or mobility is oriented towards merely some of the metropolitan cities. However, this can not significantly change the share of migrated in urban growth.

Singh(2009) examined Urbanisation and Urban Management in India during 1951-2001. He discussed the pattern of urbanisation at a macro level, changes in the pattern

of urban growth, the impact of urbanisation on the urban environment and the role of geographer in urban development and management. To set a sound urbanisation policy to achieve the urban vision a policymaker must take into perception the fact that rural regions and other urban settlements in the geographic space form the essential parts of the entire human settlements. These two geographical things have an active socio-economic relationship where urban areas create demand for rural produce and in turn offer goods and services to the rural hinterland.

Bhagat (2011) viewed that decreasing trend in the growth rate of urban population was noticed in the eighties and nineties which turned at the national level, and the degree of urbanisation raised quickly in the decade 2001-2011. The proportion of the urban population was 285 million in 2001, raised to 376 million in 2011, that is an increase of 91 million population, which is more than the increase in rural population since independence. The significant growth in the urban population has mainly resulted from the rural-urban reclassification and rural-urban migration. The vast number of new census towns entered in the last decade, which significantly contribute to the growth of urbanisation. The main challenge is to provide better urban services, infrastructure development and basic civic amenities for more productivity and good health facilities in urban areas[9].

Chatterjee (2014) viewed that there is no significant modification has been taking place in India. The change in occupation is due to a general shift from agriculture, and there is a marked transformation towards non-agricultural activities, mainly small-medium scale industries. Spreading literacy campaigns has increased the quantity of formal sector employment. Informal sector activities or unskilled work have also take a sizable part in employment. Thus, it continues as a significant challenge for the policy-makers and administrators to maintain urbanisation by emphasising good settlement designs, rising rural-urban connectivity by providing better infrastructure facilities and services.

Jaysawal and Saha (2014) opined that 'urbanisation is strongly associated with modernisation, industrialisation, and the sociological process of rationalisation. It is not only a recent phenomenon, but also a fast and historical change of social conditions on

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[9] Bhagat, R. B. (2011). Emerging pattern of urbanisation in India. Economic and political weekly, 10-12. https://www.jstor.org/stable/23017782

a universal standard, whereas primarily rural society is being speedily settled by the urban society and occurred in personally, commercially, and governmental endeavour to bring down and increasing job opportunities, educational institutions, housing facilities, and transportation services. Several rural dwellers move to cities for capturing a better standard of living and social life[10]. They viewed that cities in developing countries transformed into an over-populated and over-crowded partly through increasing natural growth of population over the decades and partly by the migration.

Mohan and Dasgupta (2015) argued that in India, the eighties and nineties were characterized by faster economic growth and non-agricultural growth rushed ahead of agricultural extension. They viewed that this is because of the defective central level economic policies with low growth in urban employment, mostly in the industrial sector. Similarly, local or state-level strategies also have not achieved success for urban growth and some other barriers to urban infrastructure investment. Inclusive and healthy economic growth inevitably required for quick urban growth to lessen the financial concern on rural areas [11].Hence, more attention required on appropriate national economic policies for urbanisation, and strategies should be adopted for sustainable urban growth.

Tumbe (2016) examined the pattern of urbanisation and urban growth in India since the nineteenth century. He argued that the urbanisation of India displays a close relationship with the growth of the economy, especially at the regional or state level. There is a wide difference between the urban and rural natural growth rate of the population since the 1970s. This indicates that agricultural productivity at a stagnant condition and low literacy rates of rural areas on the pace of urbanisation, specifically in Northern regions. The growth rate of the urban population was not significant in the eighties, however, it can find a noticeable change in the upcoming years with considerable differences observed by the infrastructure generation in certain sectors like education for human capital development, Information and Technology etc.,.

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[10] Jaysawal and saha (2014) Urbanization in India: An Impact Assessment. International Journal of Applied Sociology . 4(2): 60-65
http://article.sapub.org/10.5923.j.ijas.20140402.04.html
[11] Mohan, R., and Dasgupta, S. (2015). Working Paper, No . 231 Urban Development in India in the Twenty First Century : Policies for Accelerating Urban Growth.
https://www.semanticscholar.org/paper/Working-Paper-No-.-231

Pawan (2016) viewed that urbanisation is not considered a modern phenomenon. However, it brings a significant change in social life, where large rural life has largely changed by modern urban society. There is a situation which demands more water and land resources between the urban activities and agricultural sectors. In India, urbanisation fastened since independence, due to the enforcement of a mixed economic strategy, which encourages the private sector development [12] .He concluded that urbanisation is badly affected Indian economy in the sense that there is an increasing demand for resources like land, water, energy etc which rises as the urban density of population increases.

Sen (2017) said that the world experience showed that as countries develop, rural-to-urban migration increases when the urbanisation level is very high generally well over 50 per cent. However, in India, migration began slowing down when the urbanisation was below 25 per cent, and this trend consistently continued over three censuses of 1991,2001, and 2011. He explained this puzzle that India is far more urbanised than official measures propose, and is not, therefore, an outlier. Similarly, urbanisation is as well actively accompanying by rapid developments in social indicators, for instance, health and education. Health and education indicators are insistently higher in urban areas relative to rural, across and within Indian states. The empirical evidence in India clearly showed that 80 per cent of urban growth is organic in nature with the natural increase of population together with merging of nearest areas of a large town as urban agglomerations and creation of census towns.

Sharma (2018) observed the process, trend and pattern, of urbanisation in India. He focused on some essential features of India's imbalanced urban growth. Firstly, the urban system of India is clutched by a few large cities even though there is a considerable number of transitional and small towns. Most of the urban population lives in or close to megacities. There is an argument that the process of change in the large cities is in authority to force more economic investment, high population growth,

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[12] Pawan (2016)Urbanization and Its Causes and Effects: A Review. International Journal of Research and Scientific Innovation (IJRSI) Volume III, Issue IX. PP 110-112.
https://www.rsisinternational.org/virtual-library/papers/urbanization-and-its-causes-and-effects-a-review/

and improved infrastructure facilities. Secondly, the policies before and after economic liberalisation had mostly favoured the development of megacities

India, the second-largest populous country which is also one of the least urbanised countries. According to the census of 2011, 31 per cent of India's total population live in urban areas. From the above discussion, more than 60 per cent of the urban population lives in India in class I towns or highly populated towns. However, in the last census, there are certain places that are part of rural areas that had declared as census towns. These places satisfied the census criteria for the declaration of urban areas.

1.2.3 The Urbanisation and Development in Kerala Economy

Kerala is a small state with unique features among states of India located in the South West corner of the nation and has been witnessing speedy urbanisation since 1991. This section tries to examine the literature related to urbanisation and urban growth of the Kerala economy.

Sreekumar (1993) examined the spatial formation and development process of the Kerala economy. He viewed the interpretation of social categories and social processes in the developing countries based on the two approaches: modernisation theory and dependency theory. He examined the spatial structure, the main determinants of spatial forms in Kerala and urbanisation in Kerala from 1901 to 1981. According to him, in 1981, the degree of urbanisation was low as 18.8 per cent, though the town density, especially in the class I towns was remarkably high in Kerala[13]. Better infrastructure, good education and good health status, trading and commercial activities, the pattern of land utilisation etc. leading to an urban environment in the Kerala economy.

State Urbanisation Report (2012) identified a rapid increment in the share of the urban population in the state Kerala from 25.96 per cent to 47.72 per cent during the last ten years. It evaluates that the present urbanisation of Kerala is an urban spread rather than the outcome of the structural changes in the economy of the state and that it creates a significant and difficult challenge in urbanisation, the relationship between

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[13] Sreekumar, T. T., and Centre for Development Studies (Trivandrum, India). (1993). Urban process in Kerala, 1900-1981. Thiruvananthapuram: Centre for Development Studies

urban and rural areas and the economic bases of both urban and rural settlements[14].The report puts forward various recommendations meant for planned interventions for the selective concentration of urban and rural economic activities, efficient through balancing spatial order of the settlements.

Kuruvilla (2014) examined census towns and challenges of urban transformation in Kerala.He viewed that Kerala faces the phenomenon as 'urbanisation by implosion' where the high density of population, economic changes and a good level of public services leads to urban growth[15].In Kerala, the growth of census towns can be credited to the development of transport facilities, sectoral change of the male workforce from agriculture and allied activities to the shift to the tertiary sector.He suggested that formal transition from village areas to town areas along with a suitable legal framework may be essential to deal with the challenges of this urban transformation.

Sabida and Laya (2016)examined urbanisation and development in Kerala. They viewed that urbanisation in India has been relatively slow over the past few decades compared with several developing countries. The state Kerala had a low level of urbanisation till 2001, showed a rapid increase in its urban areas in 2011. Kerala has an urban share of nearly 48 per cent in 2011, and its districts also have immense growth in their urban population. The speed of urbanisation has also enlarged sharply during the decade 2001-2011. The foremost explanation for this urban growth in the state is the increasing number of census towns. The extreme density of population in urban areas has contributed to urban poverty also which manifested in many forms, such as slums, unemployment, increasing violence and crime and lack of social services. They suggested proper policies and development strategies need to implement to use urbanisation as a decisive factor to aid economic development.

Lal and Nair (2017) examined urbanisation growth in Kerala. The state has noted a high increasing rate of urban growth comparing to other states in the decade 2001–2011. The growth of the urban population showed a dynamic trend over the past three

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[14] State urbanisation report (2012).Department of Town and Country Planning. Government of Kerala. http://townplanning.kerala.gov.in/town/wp-content/uploads/2018/12/SUR.pdf

[15] Kuruvilla, Yacoub. (2014). Census Towns in Kerala: Challenges of Urban Transformation. https://www.researchgate.net/publication/265552035

decades. Even though the share of the urban population is not so large as compared to a large state like Maharashtra. During the decade 2001–2011, 92.8 per cent of the increase occurred in the state which bring some challenges to the government. They viewed that there is a sharp decline in urban growth rate in 2001 as a result of reduction of 42 towns by the Census 2001, consequently declining urban areas from 61 per cent in 1991 to 7.6 per cent in 2001. Usually, the increase in urban growth of population was the outcome of high density especially in the large cities, especially in the million-plus UAs.The urban population growth in Kerala is mainly due to the increasing number of urban areas and surrounding areas of main cities and towns as major urban centres.

1.3 Methodological Review

The existing literature suggested that existence of a close relationship between urbanisation and per capita GDP.Jones and Kone(1996),explored the relationship between urbanisation and level of income which has been the subject of significant theoretical debate and empirical study for several years[16].They used multi-country analysis to explore the degree of generality.They found that a strong positive and direct relationship exists and hold a temporally between the level of per capita GDP and per cent of the urban population.

Tamang (2013), found that economic growth is determined and highlighted by the level of urbanisation in a country. The results indicate that 86 per cent of the sample countries hold a long-run relationship between GDP and urbanisation. Moreover, urbanisation is showed to Granger causality to development, and the economic status of a nation is a significant factor in influencing the direction of causality. Marmara and Usman(2015), viewed that urbanisation is an essential part of the growth and development of economies and any country has never attained the medium level of economic growth without proper urbanisation, and no one ever attained a high level of income without active cities which are the centres of revolutions, entrepreneurship and efficiency.

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[16] Jones, B. G., and Koné, S. (1996). An exploration of relationships between urbanization and per capita income: United States and countries of the world. Papers in Regional Science, 75(2), 135-153.

These studies verified the correlation between urbanisation and development, mainly from the economic viewpoint applying the main criteria as GDP per capita. Next, we examine, some scholars who established the relationship between urbanisation and development; they included both indicators like income and quality of life. Bradshaw and Fraser (1989) showed a positive relationship between urbanisation and development using the variables like income, death rate, infant mortality rate and rate of illiterates. Fernando (2012) used a modified factor analysis method to create a composite development index for demonstrating the magnitude of urbanisation of a Divisional Secretariat in Sri Lanka. This method defined weight to each variable and the index shows a definite numeral value to the level of urbanisation in a specific area. The population density, number of houses and residential and non-residential buildings, business organisations and number of vehicles were the main indicators examined in the index [17].The scholars such as Iyengar and Sudarshan (1982), Ram and Shekhar (2006), Panda, Chakraborty and Misra (2016), Tanwar and Hooda (2016), Pradhan (2017) etc., had been used to represent and quantify the development indicators of different regions by the composite index for development.

1.4 Research Gap

The study of urbanisation, in recent years, assumed to be of increasing importance in developing countries. These urban studies have been recognised as a part of a large process of economic and social transformation. Urban areas offer positive agglomeration effects, including more abundant, more efficient labour markets, lower transaction costs, and easier knowledge spill-overs. Urbanisation is a dynamic socio-economic force and influences the surrounding areas. Some research studies have shown that the existence of the relationship between urbanisation and economic development. Most of the studies consider economic development in terms of income or per capita income of the economy. Some scholars try to identify the relationship between socio-economic indicators and urbanisation.

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[17] Fernando, M. A. C. S. S., Samita, S., and Abeynayake, R. (2012). Modified factor analysis to construct composite indices: illustration on urbanization index. http://192.248.43.136/bitstream/1/2314/2/PGIATAR-23 per cent284 per cent29-327.pdf

In Kerala, most studies have been related to urbanisation concerning the degree of urbanisation and growth of census towns. There are no more detailed studies dealing with the development aspects of urbanisation focused on the whole economy of the state. Most studies are used to measuring urbanisation by taking as the percentage of the whole population residing in the urban area and number of towns etc. Measuring the intensity of urbanisation among the fourteen districts of Kerala is significant. The present study tries to measure the intensity of urbanisation taking into account specific indicators such as the proportion of the urban population, male employment in non-agricultural activities and the urban area. Similarly, there is a need to study for the estimation of urban income share to total state domestic product of the state economy and the implication of the level of urbanisation on the socio-economic performance of the urban area of each district in the state. Therefore, the rationale behind this study is to overcome the inadequacy of research based on quantitative data for evaluating rapid urbanisation and the performance of socio-economic indicators in the fourteen districts of the Kerala economy.

1.5 Statement of the Problem

We know that the state Kerala had a low level of urbanisation till the 2001 census. However, the 2011 census shows around 48 per cent of the total population live in the urban area, it was 26 per cent in the 2001 census. The major reason for this dramatic growth of urbanisation in Kerala was the rising number of census towns. The total number of census towns increased to 520 in 2011 from 159 towns in the 2001 census. The state of Kerala has been known for its features of high social development indicators without a proper economic base called a Kerala model of development. Kerala is very unique in several respects among the other states of India, such as its community structure, characterized by a rural-urban continuum.

On this background, our study tries to examine comprehensive urban growth and socioeconomic performance of each district of the Kerala economy. For this purpose, at first, we try to examine, is there any variation in the increase of the level of urbanisation in the fourteen districts of Kerala. We try to understand urban income contribution to the whole economy and examining the per capita income of urban parts of each district of the Kerala economy. Next, we look at the performance of socio-economic development indicators among the urban areas of each district which provide

a clear insight into the level of disparities among districts in the Kerala economy. By studying the socio-economic development of each district, we get an impression to what extent emphasis should be given, in so far as the districts are concerned and the backward areas as to more attention should be paid especially in the social variables like, health, education, basic household amenities etc. Thus, the present study tries to explore the performance of socio-economic indicators of urban areas of each district and to pinpoint the areas and districts where more attention needed.

In this situation, the present study suggests certain questions to be examined.

- *Is there any variation in the intensity of urbanisation among the districts of Kerala?*

- *Have any disparity between each district of Kerala economy in terms of urban income share to District Domestic Product?*

- *Is there any inter-district variation in the economic performance of urban areas of each district?*

- *Have any disparity between each district of Kerala economy on account of the socio-economic performance of urban areas?*

1.6 Objectives of the Study

The general objective of the study based on the research questions is to recognise urbanisation and how it affects the socio-economic development in urban Kerala.

The specific objectives of the study are the following:

1. To examine the trend and pattern of the intensity of urbanisation in Kerala.
2. To analyse the implications of urbanisation on the economic performance of urban areas of the Kerala economy.
3. To examine the implications of urbanisation on the social indicators of urban areas of the Kerala economy.

1.7 Data Sources and Methodology

The present study has been logically examined based on secondary data collected from authentic sources. To have scientific interpretations and analysis of urbanisation is taken out from the census 1971 to census 2011. The major data sources for the present study is the census of India. The last census was done in 2011, so the study is limited

up to the year 2011. The data concerning population growth, level of urbanisation, the class size distribution of urban population, urban area, the density of population, pattern of land utilisation, output and employment contribution of the primary sector, secondary sectors and tertiary sector to Net State Domestic Product(NSDP)and District Domestic Product(DDP), selected socio-economic development indicators have been examined with the support of empirical data. The study tries to identify the performance of sub-sectors of the economy and economic growth process from 1990-91 to 2010-11 for analysing the association between urbanisation and socio-economic performance of the Kerala economy.

The census reports offered an immense amount of information on several demographic, socio-economic features of urbanisation of the study area. Further, the General Economic Tables, General Population Tables and Migration Tables, Households and social amenities tables provided by the Census of India for years 1971,1981,1991,2001 and 2011 also referred for getting figures at the district level. For data related to income and economic growth rate, the study depends on National Accounts Statistics announced by Central Statistical Organisation(CSO)for all India totals and economic data and state income published by the Economics and Statistics Department of the government of Kerala. To recognise the structure of employment, National Sample Survey Organisation conducted quinquennial Employment and Unemployment Rounds 1983 (38th round),1993-1994(50th round), 1999-2000 (55th round),2004-2005(61st round), and 2011-2012 (68th round) are used.

For attaining the first objective, the traditional tools of measuring the level of urbanisation can be used, such as the degree of urbanisation(per cent of urban population to the total population), the compound annual growth rate (CAGR) of the urban population, the exponential growth rate (EGR) of the urban population, coefficient of concentration method and tempo of urbanisation. The pattern of urban growth can be analysed by the class size distribution of the urban population and the number of towns of each class. Apart from these traditional tools of measuring urbanisation, we try to develop a new methodology for measuring the comprehensive urban growth that occurred in the economy; the Urban Intensity Index (UII)–the combination of demographic (proportion of the urban population), economic(the portion of the male working population engaged in non-agricultural activities)and geographical(ratio of urban area)indicators. Construction of UII based on the

methodology of construction Human Development Index. Detailed methodology is illustrated in the respective chapters.

For reaching the second objective, we try to estimate the urban share of income to the Kerala economy by using employment data and net domestic product of the economy. The detailed methodology of estimation is illustrated in the respective chapters. We use the scatter graph and correlation coefficient to examine the implications of the level of urbanisation on the major economic indicators. For examining the inter-district disparity, we use a composition of an economic index.

The third objective of this study tries to analyse the performance of the social development factors of each district of Kerala. For this purpose, we use the indicators comprising educational, health and, household amenities dimensions of development to construct a social development index. The detailed methodology of constructing a composite index are examined in the respective chapter. More details on data sources and research methodology are presenting in the respective chapters with suitable diagrams, graphs and maps represent all the findings and evaluation.

1.8 Chapter scheme of the Study

The present research thesis arranged into six chapters.

Chapter1:Design of Study

The introductory chapter focuses a brief introduction to the relevance of the study,review of related literature,find a research gap,statement of the research problem and research question,objectives of the study,data and methodology

Chapter 2:Theoretical Perspective and Conceptual Framework

The second chapter deals Theoretical Perspective and Conceptual Framework.Types and kind of data sources,concepts and variables are used for the study and analysing tools discussed in the part of the methodological analysis.

Chapter 3:Urban Intensity in Kerala

In this chapter,we try to discuss the pattern of urbanisation and urban growth in India and its states.It examines a comprehensive district-level discussion on the urbanisation and intensity of urbanisation in the state Kerala.

Chapter 4:Urbanisation and its Implications on the Economic Performance of Kerala Economy

This chapter tries to estimate the urban income of Kerala,and all India average.The implications of intensity of urbanisation on the various economic indicators are discussed in the chapter.

Chapter 5:Urbanisation and its Implications on the Social Indicators of Kerala Economy

We examine,the implications of level of urbanisation on the social development indicators of each district of the Kerala economy.Here we try to examine the inter-district variations in the selected socio-economic indicators by using a composite development index

Chapter 6:*Summary and Conclusions*

It is the final chapter which highlights the general findings and conclusions of the present thesis and their implications.The scope for additional research work has also been included in this chapter.

Chapter 2
Theoretical Perspective and Conceptual Framework

Chapter two

Theoretical Perspective and Conceptual Framework

2.1 Introduction

The present chapter tries to explore the theoretical perspective and conceptual framework for studying urbanisation and development of an economy which ongoing at the phase of the transition process. Such a long time, theories on urbanisation have blended into the theories that also related to cities, industrialisation, and globalisation. Here, we discuss such theories, which provide more relevant explanations for why and how urbanisation arises. Such theories like endogenous or self-generated urbanisation suggested that urbanisation involves two separate pre-conditions that is, the creation of excess products that attract people to the secondary and tertiary sectoral activities[1] (Childe 1950) and the attainment of a certain level of development of a society that permits larger societies to become a stable society (Lampard 1965).

Modernisation is a process of transformation from traditional society to modern societies which bring social, cultural, and political changes. The process of urbanisation primarily begins with the modernisation of society. Technology is considered more significant than the social organisation of a society in determining urbanisation. Even with unavoidable social inequalities, the trend and pattern of urbanisation among the advanced and developing countries are expecting to meet by cultural diffusion[2](Kasarda and Crenshaw 1991).

While the theory of modernisation unsuccessful to explain some of the backgrounds and effects of urbanisation in less developed countries, it answered by another theoretical alternative, the dependency perspective on urbanisation. The dependency theory relates to recent variations in the role of organisations in developing countries for the economic growth and expansion of capitalism. The dependency theorem

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[1] Childe, V. G. (1950). The urban revolution. Town planning review, 21(1), 3.
https://faculty.washington.edu/plape/citiesaut11/readings/Childe-urban per cent20revolution per cent201950.pdf

[2] Kasarda, J. D., and Crenshaw, E. M. (1991). Third world urbanization: Dimensions, theories, and determinants. Annual Review of Sociology, 17(1), pp 467-501.
http://www.jstor.org/stable/2083351?origin=JSTOR-pdf

developed by Frank(1966) and Wallerstein, and Goldfrank (1979). Assessment from the dependency viewpoint, degree of urbanisation and its rapidity in the third world countries is a key result of worldwide capitalism and its spacial structure. The fundamentally irregular process directing to the geographical variations can be seen in urban and rural areas and within the cities, especially at the beginning of urbanisation. Empirical studies have noted that the severe challenge of rapid urbanisation in such regions is the imbalance of urban and rural areas, uneven growth of cities, the remoteness of housing facilities, and inequality of income across the regions(Linn 1982, Chen and Parish 1996)

The policy of economic liberalisation and globalisation movements have reorganized the capital-labour affiliation among the advanced and less developed countries. Economic globalisation, new approach open new ways for both less-skilled jobs like handicraft workers, household manufacturing units and professional jobs like engineering, financial analysis and basic research are hired by the global corporations to be developing countries. The cost of labour is much economical in developing countries as compared to developed countries. Unskilled and professional jobs are rapidly generated in these countries. Consequently, it led to progress in highly supportive tertiary sector employment which helped to shift labours to the urban areas to catch their careers with the growing urban population(Kentor 1981). The following sections try to explore the theoretical perspective of urban growth happening in the transformation phase of an economy.

2.2 Theoretical Perspective on Urbanisation and Urban Growth

This section tries to realise each of the components of urban growth which are outlined within the theoretical perspective. It reveals the multidisciplinary research which can be used to realize in what way cities grow, such as in the viewpoint of the economical, demographical, and political transformation.

Globally, over the past two centuries, there is a wide dispersion of labours all over the rural area to urban areas where labour become densely concentrated.By itself, economic perceptions relate to urban growth with varying labour markets concerning a

comprehensive restructuring of the population[3](Todaro 1969).The migration-related works can be described between rural push and urban pull factors,mostly accrediting migration to procedures fortified by economic and technological change such as agricultural revolution and the industrial revolution.

Urban pull happens when changing surroundings in urban areas fascinate migrants from the rural area, which is utmost habitually accompanying with a search for higher wages. Further, Isard(1956)pointed out that urbanisation economies, which take advantage forfirms owing to geographical relationship across manufacturing industries, and localisation economies delivering benefits forfirms within the same sector.[4]Equally of these economies provide a more productive economy, forming more employment markets accomplished of absorbing a received population. Another prevalent pull factors consist migration as a reply to necessities of city life like education, reformation, and access to facilities(Bienen 1984), and the informal sector, if employment openings for inexperienced and untrained workers(Todaro and Smith 2012)

On the other hand,rural push factors every so often get up as a reply to limited economic opportunities in the rural area,propelling migrants in the direction of urban regions(Aerni 2016).There are several explanations behind this together with the green revolution,surplus labour,rural poverty,and natural or man-made disasters(Bairoch 1989,Gollin,Parente and Rogerson 2002).The migration literature dominated by two models.

The Dual-Sector Model developed by Arthur Lewis(1954) conveys the development of urbanisation as a shift in which surplus or excess labour from the traditional agricultural rural activities to modern industrial urban activities for earning higher wages,paying to industrialisation and constant economic development.The core

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[3] Todaro, M. P. (1969). A model of labor migration and urban unemployment in less developed countries. The American economic review, 59(1), 138-148. http://www.jstor.org/stable/1811100

[4] Isard, W. (1956). Location and space-economy: A general theory relating to industrial location, market areas, land use, trade, and urban structure. Cambridge: Published jointly by the Technology Press of Massachusetts Institute of Technology and Wiley, New York. http://www.economia.unam.mx/cedrus/descargas/locationspaceeco00isar per cent20(1).pdf

basis was supporting the dual-sector model in which surplus labour from the rural area will remain to migrate to cities until achieving an equilibrium wage between rural and urban areas.After that,the levels of migration will be declining[5].

Henderson(2003)had empirically shown that the urban transition ensues most quickly at low-income level countries,there is a significant wage disparity between rural and urban area.This theory has appreciated considerable attention for explaining the urban transformation of many developed countries;though,its incapability to explain migration because of growing levels of unemployment has confronted its applicability in most of the developing countries.

If we consider the demographic transition period, all over history, the total population of the world continued steady at a low level, go through temporary oscillations because of diseases, wars, malnutrition, and famine.Revolutions in medical technology and public health, through the post-war period, lead to significant progress in the general standard of living [6] (Dyson 2011).Later,he explained on this model,pointing a theoretical scenario in which the last stage of the transition includes the urban CDR dropping below the rural CDR ,raising the opportunity of urbanisation taking place without migration.It is the rate remarking that rural to urban migration also symbolises a selection prejudice,as migrants during the history tend to be fresher,in the sense that they are more fruitful and more probable to be of the family bearing age,that is a positive occasion can lead to moderately higher birth rates in urban areas.

While urbanisation is mainly considered as a political or administrative process,reclassification of rural areas as urban is habitually assumed to be a fruitful approach for stimulating economic development(Goldstein 1990).In recent years instigating policies that contribute to this element are altering this trend,lifting its situation as a prominent contributor to urban growth.According to the United Nation report (2001),reclassification can be shattered down into three sub components;the extension of existing urban borders,the invasion of neighboring places,and the addition

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[5] Lewis, W. A. (1954). Economic development with unlimited supplies of labour. Manchester School, 139-191
http://faculty.smu.edu/tosang/pdf/Lewis_1954.pdf

[6] Dyson, T. (2011). The role of the demographic transition in the process of urbanization. Population and Development Review(37).pp 34-54.
https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1728-4457.2011.00377.x

or reduction of new arrangements that effect outside a selected threshold[7].The most common criteria for classification of urban and rural places are the size of the population,density and percentage of the population involved in non-agricultural activity continue.

Davis (1965) viewed that urbanisation is a finite process, where the percentage of the population resided in urban areas increases over time. In this process, the nations grow with an industrial society from the agricultural society. He is well concerned about the part of urbanisation as a means of modifying the entire structure of society. He used the term"over-urbanization" where urban miseries and poverty existing at the same time (Kingsley Davis and Golden 1954)[8].Added to Davis, another scholar called Breese shows in India, urbanisation as pseudo-urbanisation' were, population increases in an urban area not because of urban pull but by rural pull factors(Breese 1969)[9].

Kundu and Moonis (1978) discussed 'dysfunctional urbanisation and urban formation' where urban growth or increasing density of population occurring only in some large cities and accompanied with proportionate economic growth. Another concept of urbanisation is urban sprawl, which is a multidimensional concept and defined as the diffusive pattern of growth of the city and suburban regions of the urban areas (Jhonson 2001).

In India, we can see several features which are noted by several scholars as in the above section. Here urbanisation arises without industrialisation and a strong economic base. It is primarily a consequence of population explosion and high level of poverty that tempted rural people to move the urban areas. Increasing urban growth, especially in the large cities, produces large slums accompanied by miseries, high poverty rate,

[7] United Nations (2001) Components of Urban Growth in Developing Countries. Department of Economic and Social Affairs. Population Division. ESA/P/WP.169

[8] Davis, K., and Golden, H. H. (1954). Urbanization and the development of pre-industrial areas. Economic Development and Cultural Change, 3(1), 6-26. https://www.journals.uchicago.edu/doi/pdfplus/10.1086/449673

[9] Breese, G. (1966). Urbanization in newly developing countries (No. HT151 B66). http://www.sidalc.net/cgi-bin/wxis.exe/?IsisScript=bac.xisandmethod=postandformato=2andcantidad=1andexpresion=mfn=037086

chronic unemployment, deprivation in the standard of living which leads to the poor quality of urbanisation(Bhagat 2002)[10].

Next section tries to observe the theoretical perspective of socio-economic development during the path of urbanisation and development in the transitional phase.

2.3 Socio-Economic Development

The theoretical evidence showed that the vital role of human resource development in shaping the developed society. Human resource development or human capital is defined by Schultz as the knowledge gathering possessed by the individual and the capability of the people exploiting the acquired knowledge and skill efficiently(Schultz 1961).Later years,there is rising significance of human capital development as a critical force of economic development by the scholars;such as Becker(1964), Kuznet (1966) and Physical Quality of Life Index of Morris (1978).The theoretical viewpoint of human development helps the perception of the progress of the theory of human development, indicating the different phases of the evolution of society.

The neoclassical economist Alfred Marshal had realised that capital involves a significant knowledge part and some institutions. He considered the role of knowledge is the most powerful tool of inventions. It will help to proper use of nature and resources to fulfil our wants. Human capital is in various forms, and it provides various producer and consumer services[11](Marshall 1961).The expenditure for human capital, mostly in health and nutrition, education etc., are considered crucial for attaining best job opportunities.(Knight 1944,Becker 1966). Schultz viewed that the five ways of development of human resources are:a)Provide health services generally regarded to comprise all investments which improves the life expectancy,good health of the people.b)On-the-job training for the effective employee development programmes.c)conventional and formal education .d)Training program especially for

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[10] Bhagat, R. (2002). Challenges of Rural-Urban Classification for Decentralised Governance. Economic and Political Weekly. 37. 2413-2416.
https://www.jstor.org/stable/4412268

[11] Marshall, A. (1961). Principles of Economics: Text (Vol. 1). Macmillan for the Royal Economic Society.

adults ,and e)Individuals and family migration to regulate or altering job opportunities[12].

Streeten (1979) developed the Basic Needs Approach in the mid-1970s. The basic needs of human beings are food, shelter, good health, basic education and hygiene and sanitation. He viewed that attainment of these Basic Needs is one of the main criteria for economic development and realised the main causes to encourage human capital development. Human capital development is required to achieve higher productivity. It reduces the size of the family by decreasing the birth rate. Reduced poverty brings to a flourishing civil society, high democracy, and a stable society and decrease civil conflicts and improves political stability in a nation[13].

Sen (1988) says that a society's the standard of living ought to be evaluated not by the average income level ; however,by capability of the people to lead a valued life .He asserted that commodities to be judged as the ways of improving capabilities like knowledge,health and ability to participate in an ordinary life and self-respect.Freedom from hunger,freedom to join in the political activities,getting suitable shelter,attain good education and health,etc.,mentioned as various indicators of capabilities[14].He observed that development indicates increasing capability and freedom,instead of realizing as a pure economic phenomenon. The term development estimated from the view of enriching following rights in a human being;a) Entitlements,for instance, education and good health .b) Capabilities are produced by empowerment and offer people have the freedom to take various ways of living.c)Functionings refers to the establishment of the quality of an individual's way of life in society.

Strong economic growth is also an essential element to achieve higher human development. The large scale production of goods and services should improve the living standard of the people. Developing countries required a high level of economic

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[12] Schultz, T. W. (1961). Investment in human capital. The American economic review, 51(1), 1-17.
https://www.jstor.org/stable/1818907

[13] Streeten, P. P. (1979). Basic needs: premises and promises (p. 143). World Bank.
http://documents.worldbank.org/curated/en/882331468179936655/pdf/997710english.pdf

[14] Sen, A. (1988). The standard of living. Cambridge University Press.
https://pdfs.semanticscholar.org/90df/0aeef0295608ee0fa27e47d093e825e7f3ae.pdf

growth to dropping the level of poverty, facilitate essential social services, providing of fundamental capabilities, and enable the basic infrastructure necessary for human development[15](Anderson 2014).

The factual evidence showed that people in higher-income countries have superior potentiality than the people in inferior countries. For improving human resources, achieving better economic growth is necessary and sufficient condition. The quality of economic growth is considered a crucial factor in the well-being of society. In this way, the high quality of economic growth help to achieve development and high income generally protects the life of people. It should be careful taking into consideration that is equality of income and people-centred development only bring welfare in the nation(Jahan 2003).

According to the United Nations, by 2050, around 65 per centof the world population likely to live in urban areas. Like fast urbanisation, the frame is gradually moulding the rural areas and their livelihood. Urbanisation, generally accepted as the significant trend of the 21st century. It offers excellent possibilities and challenges for the reduction in poverty both in the rural and urban areas[16](UNFPA 2007).Globally, all national economies experience significant shifts in the structure of the economy and increase the dominance of non-agricultural activities which became essential for the livelihood of even the rural people. The structural transformation of the economy has occurred from the traditional agricultural economies where the majority population employed in farming and cultivation shifted to the industrial, manufacturing and services which provide more income to the nation. Since 1980, most of the working population engaged in non-agricultural activities overtake that population working in the agricultural activities (Saterthwaite,2007).

Generally, the overall result of urbanisation was showing that the growth of large cities acting as dependent bodies demanding the people and resources of the rural area and making a gradually unhealthy urban structure. Extremely large and rapidly rising

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[15] Anderson, T. (2014). Human development, the state and participation. Development Studies Research. An Open Access Journal, 1(1), 64-74. https://www.tandfonline.com/doi/abs/10.1080/21665095.2014.933080

[16] UNFPA Annual Report (2007). https://www.unfpa.org/publications/unfpa-annual-report-2007

urban populations depict a socio-economic change, especially in less developed countries. To the contrasts with the developmental patterns that go together with structural transformation in the presently rich industrialised countries, many developing countries are accordingly said to be overurbanised countries[17](Timberlake and Kentor 1983).Considering the above well-known theories, we can reach certain generalisations concerning the bidirectional relationship between urbanisation and economic development is constructed on the experiences of the various developed economies. However, In the situation of the developed countries, strong economic pull factors were worked in the process of urbanisation. Different to this, the present-day developing countries are experiencing rapid urban growth, mainly due to massive rural outmigration due to the strong push factors functioning in rural areas.

2.4 Conceptual Framework

The geographical coverage of urban and semi-urban areas, the extension of small and medium-size towns and the classification of the rural area and the urban area are creating some challenges to separate rural area from the urban areas. In many developing countries, a growing rural-urban continuum has noticed between rural regions and urban surroundings, medium-size towns and sub-urbs, semi-urban areas and larger cities. We can see that the rural areas are turning into urban areas for getting various services, job opportunities and market for their products. At these conditions, increasing density of population in the urban areas possibly in closer cities have better accessibility, provision of more services and dynamical rural-urban relationship. The realisation of the key and healthy inter-dependency are essential for a balanced mode of investment, convenient and fair markets, financial inclusion, and good infrastructure facilities in rural and urban areas(Losch 2016).

Urbanisation positively related to growth, both in general and over its effects on the economy. In developed economies, it is well-known that urban centres are engines of regional growth (Partridge, Olfert, and Alasia 2007). Likewise, it is increasingly showed among certain developing Asian and Latin American countries, especially in

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[17] Timberlake, M., and Kentor, J. (1983). Economic dependence, overurbanization, and economic growth: a study of less developed countries. Sociological Quarterly, 24(4), 489-507.
https://www.researchgate.net/profile/Michael_Timberlake/publication/227726034_.pdf

highly urbanised areas(Henderson 2002 and Chandrasekhar 2014). Based on the theoretical perspective of urbanisation and the socio-economic development of an economy, the present section tries to construct a conceptual framework for analysing the present study.

As in the previous literature, when the economy moves to a modernised, urbanised society, there we can see a dual-sector in an economy; urban and rural. During the rapid urbanisation phase, the individual parts of the rural area also transformed into the urban area. Therefore, the urbanisation widened the geographical area of the urban sector and lessened the rural sector. In India, the 2011 census declared 2740 new Census towns which were villages and considered small towns. From this situation, it is significant to analyse the performance of the urban and rural area concerning their income generation, the structure of employment, unemployment, consumption, and other development indicators like health, education, poverty, access to household amenities. Moreover, in a vast country like India, with an extensive range of regional disparities, various models of urbanisation are detected instantaneously, reflecting dichotomy or dualism in the economic structure.

For our empirical analysis, we develop a theoretical model that demonstrates the methods measuring urbanisation and its implication on the socio-economic development of an economy. Kerala, considered as one of the rapidly growing urbanised states of India accompanied by a low rate of growth in the agriculture sector, stagnant industrial sector, and a strong tertiary sector. Here we try to examine whether urbanisation in Kerala is sustainable and analyse the contribution of urban income to improves the development of the economy. For analysing the impact of urbanisation on economic performance and social development, we try to estimate the share of urban income and its implications on the socio-economic development indicators. Hence, the present study is an effort has been intended to(1)examine the trend and pattern of the intensity of urbanisation of state Kerala,(2)to analyse the implications of urbanisation on the major economic indicators of the economy, and(3)to examine implications of urbanisation on socio-economic development indicators of Kerala economy. The study tries to examine the inter-district variations in the intensity of urbanisation and socio-economic performance of the Kerala economy. By using a Composite Development Index, we can examine the performance of the urban area of each district in terms of socio-economic indicators of development, especially at this phase of rapid

urbanisation. This will give clear insights into the more attention needed districts and socio-economic indicators.

2.5 Concepts and Terms used under the study

The present section tries to clarify the basic concepts and terms used for the study. It would help to clarify the meaning and purpose of the concepts used in work. Here we discussed the terms and concepts related to urban growth, urbanisation, economic growth, economic development, and structural change, especially sectoral economic change.

2.5.1 Urban Growth and Urbanisation

Urban growth defined as any growth of the urban environment,such as population,land area and intensive land use.There are three factors which considered as the major components of urban growth.Namely,demographic factors,economic factors,and political factors (Dyson 2011).The *demographic factors* related to the natural growth rate of population in the urban area,determined by the birth rate and death rate of the economy.The main reason for *economic factors* of urban growth related to urban pull and rural push factors which are the main component of rural - urban migration.For instance, rural push and urban pull factors are improved agricultural efficiency that banished farm workers;new inventions are essential for lower skill levels and cheap,ready-made goods,better infrastructure,good health,and education at a low cost,which are readily available in urban areas.The attractions of city life and problems and constraints of people in rural area tempted to move into the urban centres.In the urbanisation stage,there is occurred in the economy from agricultural traditional rural economy to modernised non-agricultural urban economy.Urbanisation occurs as countries shift sectoral composition taken from agriculture into industry or service sector which has technically advanced on domestic agriculture that releases labour from agriculture sector to migrate to an urban areas[18](Moomaw and Shater 1993).*Political factors* considered mainly as a political or administrative process that

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[18] Moomaw, R. L., and Shatter, A. M. (1993). Urbanization as a factor in economic growth. Journal of Economics, 19(2).pp 1-6.

use of reclassification of rural areas as per urban,which is often supposed to be a effective method for promoting economic development[19](Chen and Zlotnik 1994).

Urban growth can help to increase the economic development of an economy. It is also denoted as the extension of a metropolitan or peripheral area into the surrounding setting. It indicates the position of a country's economic status as the result of urban growth which directly influences the country's economic growth and development. If the extra-urban area grows, there will be more employment opportunities and income generation, and thus economic growth likewise takes place. Urban growth leads the country to the process of urbanisation, which in turn leads to some changes or transitions in the economy, such as demographical, socio-cultural and economic structural transformation. For instance, transform the society and bring migration to urban areas, more employment openings in urban areas, better health and educational institutions, development of infrastructure, more transporting and communication facilities and improving quality of living. Moreover, there is a structural shift from a subsistence rural style of living to a modernised, non-agricultural based urban style of life.

2.5.1.1 Measuring urbanisation

This section briefly observes existing principles and approaches to measuring urbanisation in India. At first, we can define an 'urban area'.All over the world, the government of each country defined as 'urban' and 'rural' mainly on definite criteria which are varied across countries. For instance, in Canada, the criteria for urban is the area must have 1,000 or more residents with a minimum density of population of 400 per sq. km. The countries like Argentina, Ethiopia, Israel and Austria, considered areas with 2,000 or more residents are grouped as 'urban'.one of the extreme definition of an urban area can be seen in the Republic of Korea, where 50,000 or more residents are needed for classifying urban areas[20](Aijas 2017).

In India, urban and rural settlements are labelled on the basis of certain economic and demographic qualities. There are two classifications for stating settlements as 'urban'

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[19] Chen, N, and Zlotnik, H (1994). Urbanization prospects for the 21st century. In L. Mazur (Ed.), Beyond the number: a reader on population, consumption and the environment. Washington DC: Island Press.pp. 343–358.

[20] Aijaz, R. U. M. I. (2017). Measuring Urbanisation in India. ORF Issue Brief, 218. https://www.orfonline.org/wp-content/uploads/2017/12/ORF_IssueBrief_218_Urbanisation.pdf

such as State Government definition and National Government or Census Office definition. The state governments definition is not broadly accepted due to, the norms and conditions are varied across states. Therefore, generally accepted criteria for an 'urban area' developed by the Census of India represented the national government.

For the latest Census of India 2011,the definition of the urban area is as follows.

1.The places,such as a Corporation,the municipality,Cantonment Board or Notified town area committee,etc.

2.All added places which fulfilled the following criteria:

- Minimum.population size of 5000,
- At least 75 per centof the main male workers engaged in non-agricultural pursuits,and
- The density of population of at least 400 persons per square kilometre

The first type of urban units is known as Statutory Towns which are notified under the law by the concerned State/UT Government. Such as local bodies like municipal corporations, municipalities, etc., regardless of their demographic features as estimated on 31st December 2009(census 2011)For this study, we used, the definition developed by the Census of India.

Census of India categorizes urban centres into six classes.Urban population by class-size classification is based on the following:

Class I   Population Greater than 1,00,000

Class II   Population 50,000-1,00,000

Class III   Population 20,000-50,000

Class IV   Population 10,000-20,000

Class V   Population 5,000-10,000

Class VI   Population Less than 5,000

Cities with population in between 1-5 million are called as metropolitan cities,and 5 million or more population are called as mega cities. If the population of more than 1 lakh is known as a city,and less than 1 lakh of population called as a town.

There are several measures of urbanisation.Such as(a)Degree of Urbanisation,(b)Scale of Urbanisation,(c)Scale of Population Concentration,and(d)Exponential Growth Rate.

(a)Degree of Urbanisation

The most used measure is the Degree of Urbanisation.It is defined as the proportion of urban population to the total population of a country.

$$\text{Degree of Urbanisation} = \frac{U}{P} \times 100$$

Where,U–Total urban population or population in urban areas,P–Total population

This measure is popularly used as an index of urbanisation because it is easy to understand and compute.We can use to calculate and compare the percentage of urbanisation in national and international levels.

(b)The scale of Urbanisation(SU)

There are two properties of a measure of the scale of urbanisation.First,the proportion of the concentration of urban population in different class-size of urban units.Second,the proportion of total population among various class-size of urban units.Thus,the greater the concentration of the urban population in a large size city class shows the higher the scale of concentration(Gibbs 1966).The scale of urbanisation is defined as;

$$SU = \sum_{i=1}^{n} X_i Y_i$$

Where,SU-Scale of Urbanisation

X_i-The proportion of the urban population in urban size class I and all size classes above it.

Y_i-The proportion of the total population in urban size class I and all size classes above it.

The Scale of Urbanisation shows that the concentration pattern of the urban population.The Scale of Urbanisation indicates higher the proportion of urban and total population in large cities,and conversely smaller the scale of urbanisation means that urban population is concentrated in small towns.

(c)Exponential Growth Rate

This measure assumes that the urban population growth follows the exponential distribution,which is generalised of the geometric function when time't'considered as a continuous variable.Exponential growth rate can be found as follows;

$$U_t = U_0 e^{rt}$$

Where,U_t–the Urban population at year 't',U_0–the Urban population at the previous year'0',r–the growth rate,t–the time interval between the base year and current year.

e)Tempo/Speed of Urbanisation

Speed of urbanisation denotes to the rate of change in the share of the population of an urban area over a time period.It is measured by the rate of change in the proportion of the urban population between two periods.

$$\textit{Speed of Urbanisation} = \frac{(U2/T2)-(U1/T1)}{(U1-T1)}$$

where T_1,U_1,T_2 and U_2 are the total and urban populations of two succeeding periods.

f)Urban Intensity Index(UII)

The methods mentioned above are previously used and accepted methods of measuring urbanisation and urban growth.However,there is a common restraint of all the methods as mentioned earlier these are given importance to only one variable(urban population).For overcoming this limitation,the scholar tries to develop a new index,Urban Intensity Index(UII)for measuring urban growth.Urban Intensity Index(UII)can be defined as;

$$\text{Urban intensity Index(UII)} = \sqrt[3]{UPI.UAI.UNOI}$$

Where,UPI-Urban Population Index,UAI-Urban Area Index;and

UNOI-Urban non-agricultural occupation index

The value of UII lies between 0 and 1.The detailed description of the method analysed in the following chapters.

2.5.1.2 Urban Income

The present study also tries to the estimation of urban income of an economy.When an economy moved to a path of urbanisation,the growth of the urban area and its activities expanded and consequently the other side of the economy,the rural area and its prime activities contracted.In the process of the development of an economy,there is an important feature that is income inequality between urban and rural areas.Generally,the pattern of consumption expenditures is used to measure the deviation of urban and rural standard of living.The universally accepted indicator of measuring the standard of living of a certain area by considering their per capita domestic product of a region or a nation.Thus,the income-generating from a certain physical,geographical boundary defined by the concept domestic product provides a clearer picture of a physical product,level of employment and potentiality of production of that area.By these circumstances,it is very appropriate to develop the estimates of urban and rural domestic products of a region or economy.

Urban Domestic Product or Urban Income

Urban income is defined as the total money value of goods and services produced within the territory of an urban area in an economy.It can be estimated by using worker population ratio and labour productivity of each sector in the urban economy.

Total Urban Domestic Product or Urban Income(UI) $= \sum_{i=1}^{n} Uwi * LPi$

Where,UI is the Urban Income derived from the summation of the urban domestic product of all sectors in the urban area.There are i=1,2,3…n sectors in the urban economy.

2.5.2 Demographic indicators

Demographic transitions can affect the speed of urban transitions. If studies on the growth of population and urbanisation which are based on the demographic effect of developmental projects should be taken carefully, because of urbanisation supports to form the favourite demographic changes. This section observes the influence of urbanisation on fertility rate, mortality rate and availability of medical services and basic amenities.

In advanced countries, the phase of modernisation together with socio-economic development was thoroughly related to demographic transition and urbanisation. The historical data shows eventually resulted in a low fertility rate of urban which turns into the custom even in the rural areas in these countries. Therefore, the decline fertility rate and the process of urbanisation has been closely related in the developed countries. However, It has been viewed that urban-rural fertility deviation tends to be larger in underdeveloped countries. Vital statistics can be an exceptional source of population-based data for evaluating the quality of life. The study uses vital statistics published by the Sample Registration System report and census of India.

2.5.3 Socio-cultural development indicators

Urbanisation has effects on social change and modernisation,which are linked to each other.It is argued that urban areas generate and spread innovations to less urbanised along with rural areas,develop communications mechanisms and offer ready access to technical and scientific knowledge.Some of the distinctive infrastructural facilities in the urban area consist of the essential and most favourite social services.Such as schools,colleges,health facilities,water supply,improved and other flexible means of transport facilities,communication,and entertainment openings etc.These are distinct urban areas from rural areas.On the contrary,cities establish the hubs of vice,together with several social,political,economic,and environmental problems which habitually increase sooner in these localities than in rural areas.Almost all the developing countries are revealing much about the role of cities or urban area in spatial,economic,and social change[21](UNCHS/HABITAT 1994).

As cities are lumps of new ideas, innovation, and communication, which spread into the immediate surroundings as well as in the whole country, through sustained urban-rural links. Better health and housing, favourable variations of attitudes, ambitions, behaviour, and individual relationships are all reliant upon urban living, yet slight time migrants have practised it. Cities frequently plan the image of all that change, and

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[21] United Nations Centre for Human Settlements ,Habitat (1994) Population, urbanization and quality of life,Contribution to the International Conference on Population and Development,

modernisation involves, later their vital role in every domain of life. Indeed, civilisation has rightly been defined as what goes on in cities(Boulding 1958).

Cities, historically, have been the places of learning and education, which become the centres of governmental and administrative organisations, and they have reached the function of religious or cultural rallying points. Viable transport and communication facilities in cities played a significant role in political engineering, regional incorporation, and international collaboration. Cities provide large well-occupied hospitals, universities and professional educational institutions, processing and manufacturing industries of science and technology have bounced up. As 'engines of development ', cities have strained the inflow of human capital, unskilled labour, and resources which, joined with the urban infrastructure and facilities, have prompted industrialisation, commercialisation, and all methods of required elements of development. For measuring socio-cultural change, we use some of the measures like literacy rates, education status, number of educational institutions, sex ratio, poverty ratio.

a)Literacy rate

Literacy and level of education are elementary indicators of the level of progress reached by a society. Expansion of literacy is mostly associated with essential qualities of modern civilisation such as modernisation, urbanisation, industrialisation, commerce, and communication. Literacy forms an overall development of individuals allowing them to realize their social, cultural, and political environment better and reply to it aptly. Higher levels of education and literacy forefront to greater responsiveness and contributes to the development of economic and social conditions. It turns as a catalyst for social upliftment and enhancing the returns on investment made in nearly every feature of development struggle, such as population control, health, hygiene, environmental deprivation control, employment of weaker sections of the society etc.(Census 2001)

According to the United Nations Educational Scientific and Cultural Organisation (UNESCO 2004) report, "Literacy is the ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in

their community and wider society."People acquire and apply literacy for different purposes in different situations, all of which are shaped by culture, history, language, religion and socio-economic conditions[22].

b)Sex Ratio

The sex ratio is calculated as the number of females per thousand males. Sex ratio indicates the size of the women population and shows the ratio of the number of females to that of males. Census of India provide required data for the same.

c)Poverty Ratio(Head-Count Ratio)

More and Singh(2014), defined 'poverty in terms of subsistence level has had wide acceptance as it seems to be by common sense which describes poverty as lack of the income needed to acquire the minimum necessities of life. Poverty is an extremely complex phenomenon, which manifests itself in a range of overlapping and interwoven economic, political, and social deprivations. These include lack of assets,low-income levels, hunger, poor health, insecurity, physical and psychological hardship, social exclusion, degradation and discrimination, and political powerlessness and disarticulation' [23] .According to the report of the Rangarajan Committee, the new poverty line decided as   Rs 47 in urban areas and Rs 32 in rural areas. In earlier, it was Rs 33 for Urban and Rs 27 for rural. The incidence of poverty is calculated by the poverty ratio or headcount ratio, which shows the number of poor people to the whole population and expressed as in percentage.

2.5.4 Economic Development

The concept of economic development shows a wide picture of the economy which indicates the growth rate of the national product accompanied by a betterment condition of the standard of living. The term economic development gives more emphases on socio-economic variables than the quantifiable examination of the national product. It is a measure to examine the qualitative improvement in science and

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[22] United Nations Educational Scientific and Cultural Organisation Education sector (2004),The Plurality of Literacy and Its Implications for Policies and Programmes.Position paper

[23] More, S., and Singh, N. (2014). Poverty in India: concepts, measurement and status. https://mpra.ub.uni-muenchen.de/62400/1/MPRA_paper_62400.pdf

technology, labour transformations, better standard of living, considering significant institutional variations occurring in an economy. Economic development regards the inclusive development concerning the quality of living standards of its citizens, per capita income, government facilities, opportunities of employment, the dignity of people and different evolution and transformation at the bottom level of an economy. Moreover, the term economic development better than the concept of economic growth, because the former concerns economic growth and other relevant socio-economic changes. Therefore the significant parameters of economic development help the economy to further increase of economic growth of an economy.

2.5.5 Composite Development Index

To calculate the district-wise composite development index, fourteen development indicators are selected. They are per capita income, worker population ratio, density of population, literacy rate, level of education, monthly per capita consumption expenditure, the proportion of food to non-food, infant mortality rate, child sex ratio, having electricity, toilet facility, drainage, banking facility, computer and internet facility. The Composite Index of Development is calculated as the following.

The Index used to represent and measuring the development of population resided in different regions (Iyengar and Sudarshan 1982).

Here 'x_{id}' denotes the quantity of the 'I'$_{th}$ development indicator in 'd'$_{th}$ district of the state.(i=1,2,3,4,5…..n indicators;d=1,2,3,4.5……m districts)

If the development variable 'x_i' is directly or positively related to the development of an economy, then we use the formula as following.

Development Index value(X_{id}) $= \dfrac{(x_{id}) - \min(x_{id})}{\max(x_{id}) - \min(x_{id})}$

If the development variable 'x_i' is inversely or negatively related to the development, then we use the formula as following.

Development Index value(X_{id}) $= \dfrac{\max(x_{id}) - (x_{id})}{\max(x_{id}) - \min(x_{id})}$

The composite development index (CDI) is calculated as the mean of all the index. The value of the index lies between 0 and 1. The CDI used for examining the

performance of development indicators of each district. The correlation coefficient is also used to understand the relationship between the development variables and the intensity or level of urbanisation of each district.

2.6 Conclusion

The chapter tried to discuss the theoretical perspective of the present study and developed a conceptual framework. We examined the main concepts and terms for the study. Methodology and tools used in the study have discoursed. More detailed and necessary explanations of tools and methods are also stating in the following chapters. Here we try to explore inter-district variation in Kerala with respect to the level of urbanisation and its implications on their socio-economic performance.

Chapter 3
Urban Intensity in Kerala

Chapter Three

Urban Intensity in Kerala

3.1 Introduction

In the context of rapid urbanisation in developing countries, the study attempts to analyse the intensity of urbanisation and socio-economic development occurring in Kerala, one of the rapidly urbanising states of India. The economy of Kerala and its developmental features have established global attention. The state was achieved progressive developmental goals as in developed economies and accomplished unusual rapidity in urbanisation, even with a low level of industrial development. The decade 2001 to 2011, we can see that from the viewpoint of urbanisation, the Kerala state witnessed rapid urban growth. Around 50 per cent of the total population resided in the urban areas and attained improved human development compared to other states in India

The present chapter focus on the first objective of the study that is to examine the trend and pattern of the urban intensity of Kerala over the period 1991 to 2011 and analysing the various factors which affect the rapid urban growth in the state. By understanding the present status of Kerala in terms of urbanisation, we should know the position of Kerala at the national level. Therefore, it is desirable to study the trend and pattern urbanisation of India and its states. Thus, in the chapter outlined as in the first section, we examine the level of urbanisation using traditional methods like percentage of the population living in the urban areas,class-wise classification of towns and cities and growth of the number of towns in an area. The second section discussed various factors which help to examine the extension of urbanisation in Kerala and construct an urbanisation index termed as Urban Intensity Index. The last part used to analyse the intensity of urbanisation of Indian states and districts of Kerala by using Urban Intensity Index.

3.2 Trend and Pattern of Urbanisation in India

India has a long history of urbanisation, but the scope of the study limited to analyse India's urbanisation since independence. In India, the urbanisation process is undergoing a stable change in the proportion of its urban population. There is an increasing number of cities and towns, which contribute significantly to the national

income, reducing the level of poverty and increase inequality of income increases. According to Kundu (2006), the factors like the natural growth rate of the population (59.4 per cent), the number of new cities and towns (6.2 per cent), migration from rural to urban areas (21 per cent) and the reclassification of several rural areas into the urban areas (13 per cent) were considered the factors of the increasing share of the urban population in the decade 1991-2001.

This section tries to examine the trends and patterns of India's urbanisation from 1971 to 2011. For examining the urbanisation trend, the data are taken from various Census reports up to the 2011 census year. The level of urbanisation can be calculated in two ways; firstly, in the demographic approach, we examine the absolute and relative growth of urban population to the entire population and its spreading pattern by the various class-size of cities or towns. Secondly, in the geographical approach, we try to examine the increasing number of towns and its extension of territorial borders of prevailing urban areas.

3.2.1 Demographic Approach

Urbanisation in India has been showing relatively slow compared to other developing countries.In India,urban population in the year 1951 was 62.4 million which was the beginning of planned development.Out of India's 1211 million population in 2011 census,377 million or 31.16 per cent live in urban areas.Population in urban areas rapidly increasing than in the rural areas,particularly in the last decade(2001-11)witnessed significant increase of urban population since Independence. Consequently,the growth rate of the rural population has been gradually falling since 1951.Figure 3.1 clearly shows that the share of the urban and rural population in India from 1951-2011.The percentage of urban population has been steadily raised to 31.1 in 2011 which means that the pace of urbanisation increased more than six times in the last 6 decades.From this situation of rapid population growth,the growth of urban population needs significant attention especially developing country like India.In the future,we can expect declaration of large number of new towns like as economic and population growth.The census of India declares urban and rural area by using specific criteria as discussed in the previous chapter.

Figure 3.1:Urban population and Rural population in India(in million)
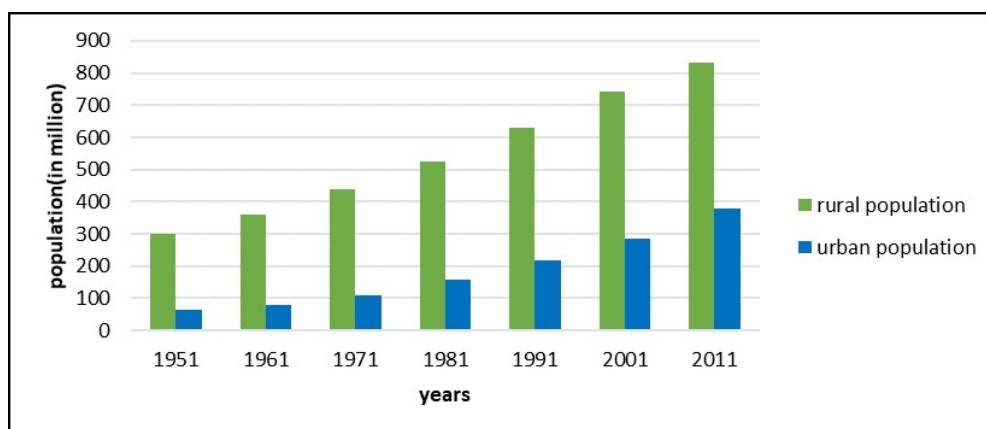
Source: Census of India (1951-2011)

In 1951, the first census after independence showed 82.71 per cent of the rural population and only 17.29 per cent of the urban population. Gradually urban population increased to 31.16 per cent in 2011 census. Correspondingly, the rural population showed a decreasing trend and reached 68.86 per cent in the 2011 census.(Table 3.1)we can see a gradual and consistent increase of urban population from 1951-2011 at the national level.

Table 3.1: Distribution of Population in India (in million)

Year	Total Population	Rural Population	Urban Population
1951	361	299 (82.71)	62 (17.29)
1961	439	360 (82.03)	79 (17.97)
1971	548	439 (80.09)	109 (19.91)
1981	683	524 (76.66)	159 (23.34)
1991	847	622 (74.26)	215 (25.71)
2001	1028	742 (72.20)	286 (27.82)
2011	1210	833 (68.86)	377 (31.16)

Source: Census of India(1951-2011)

Note: In the 1981 Census was not carry out in the state Assam, the 1991 Census was not conducted in Jammu and Kashmir: hence the population of India comprises expected figures for these states in those years. Figures in parenthesis show per cent share of the total population.

Here,there are three methods used for analysing growth rate of the urban and rural population,viz,Exponential Growth Rate(EGR),Decadal Growth Rate(DGR)and Compounded Annual Growth Rate(CAGR).We can see from the table 3.2,and the figure 3.2,exponential growth rate of the population in the urban area had increased from 2.34 per cent in 1951-61 to 3.79 per cent in 1971-81 but weakened during decades of 1981-91 and 1991-2001.Several studies noticed this slowing down pace of urbanisation.it is viewed that this decline due to fall in rural-urban migration and tend to be increasing concentration of population located near the large cities.The decrease in growth rate was,to some extent turned back during the decade 2001-2011 with 2.76 per cent.

Table 3.2:Urban and Rural Population EGR,DGR and CAGR in India
(in per cent)

Decade	EGR		DGR		CAGR	
	Rural	Urban	Rural	Urban	Rural	Urban
1951-61	1.87	2.34	20.6	26.41	1.85	2.33
1961-71	1.97	3.24	21.85	38. 23	2.09	3.28
1971-81	1.76	3.79	19.31	46.14	1.62	3.75
1981-91	1.82	3.11	20.01	36.47	1.85	3.04
1991-01	1.66	2.74	18.1	31.48	1.62	2.57
2001-11	1.15	2.76	12.25	31.8	1.15	2.8

Source:Census of India(1951-2011).*Note:calculated by the scholar*

From 1951-2011, the highest exponential growth rate, decadal growth rate, and compound annual growth rate of the urban population were found during the decade 1971-81. The growth rate of the rural population showing a gradually declining trend and the proportion of the urban population to the total population enhanced from 17.29 per cent in 1951 to 31.16 per cent in 2011. It specifies that India's urbanisation showing an increasing trend over the periods. (table 3.1).

Figure 3.2:Exponential Growth Rate of Urban and Rural Population in India

Exponential Growth Rate
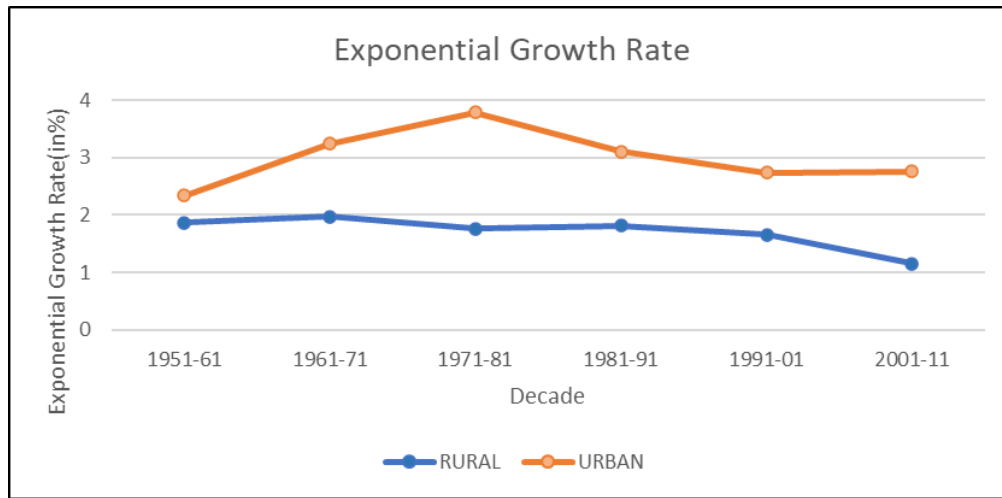
Source:Census of India(1951-2011)*Note:Exponential Growth Rate calculated by the scholar*

Census data showed that the growth rate of population in the urban areas was to be slow in the decade 1981-91 and 1991-01, the CAGR recorded as 3.04 and 2.57 per annum, respectively. But the share of the urban population stood at 17.97 per cent to 27.82 per cent during 1961-2001. It displays almost consistency towards the increase in urban population. During the decade 2001-11, the decadal growth rate of the urban population had increased to 31.8 per cent that is about 92 millions urban population added to the urban population. During the process of urbanisation, it is expected that the growth rate of the urban population more than the growth rate population in rural areas. Indian economy also follows this process during the path of development.

3.2.2 Geographic Approach

The distinctive measure of the population was relative to the land area is the density of population, since different areas vary significantly in their value for agricultural or other non-agricultural purposes. This section analyses the pattern of urbanisation concentration in India. The concentration of population in metropolises and towns rest on several factors, such as the physical location, early population size, functional features, economic structure etc. are the most important factors, which result in the growth of the population of urban areas. Fast industrialisation, job openings, transports and communications services etc. are required for the overall urban growth of a region.

In the urban areas, the population structure is found by analysing the spreading of the urban population in various size classes. The Census of India categorizes urban centres or towns into six categories based on their population.

Table 3.3:Categories of six classes of urban centres in India

Category	Population
Class I	Greater than 100000
Class II	50000-99999
Class III	20000-49999
Class IV	10000-19999
Class V	5000-9999
Class VI	Less than 5000

Source:Census of India 2001

The cities that take in population between 1-5 million are known as metropolitan cities, and mega cities accommodate more than 5 million. If the population is more than 1 lakh is titled as a city and below 1 lakh is denoted as a town.

Table 3.4:Number of cities and towns by Class wise and size in India(census 1951-2011)

Year	Class I	Class II	Class III	Class IV	Class V	Class VI	Total
1951	76 (2.72)	91 (3.26)	327 (11.7)	608 (21.75)	1124 (40.21)	569 (20.36)	2795 (100)
1961	102 (4.49)	129 (5.68)	437 (19.25)	719 (31.67)	711 (31.32)	172 (7.58)	2270 (100)
1971	148 (5.98)	173 (6.99)	558 (22.54)	827 (33.4)	623 (25.16)	147 (5.94)	2476 (100)
1981	216 (6.87)	270 (8.59)	738 (23.47)	1053 (33.48)	639 (20.32)	229 (7.28)	3145 (100)
1991	296 (8.2)	341 (9.45)	927 (25.69)	1135 (35.45)	725 (19.09)	185 (5.13)	3609 (100)
2001	441 (8.54)	496 (9.61)	1388 (26.89)	1563 (30.28)	1041 (20.17)	232 (4.5)	5161 (100)
2011	468 (7.58)	474 (7.68)	1373 (22.25)	1683 (27.27)	1749 (28.34)	424 (6.87)	6171 (100)

Source:Census of India(1951-2011).Note:*Figures in parenthesis shows per centshare in total towns*

The number of towns in each class size during the census periods from 1951–2011 are given in table 3.4. It can be detected that some variations in the number of town in the

1961 census and after because some towns were released, and some new ones were extra at each census. It was resulting in changes in the classification of urban areas and city size in the 1961 census.After1971 census, the urban definition of 1961census was adopted with a slight variation of the term 'town group's urban agglomeration(UA)by integration several towns. In the 1951 census, there were 2795 towns, and which was increased to 6171 which includes UAS and towns.

The share of the number of towns in each class of various census periods was changed from 1951 to 2011. In the case of class I, class II and class III, the share of the number of towns gently increase up to the 2001 census after that in the 2011 census their share in number slightly decreases. However, the actual number of towns increased in these classes. In the case of class IV, the percentage share of the number of towns increases up to the 1991 census, and after it slightly decreases. Towns in class V had a significant share of the number of towns. However, its share shows a decreasing trend during these periods. The share of the number of towns comparatively low in the last class that is class VI. In the census 2011, India's most significant number of towns and cities belongs to class V, class IV and class III respectively. (figure 3.3)

Figure 3.3:Share of Class Wise Towns to Total Towns in India During 1951-2011
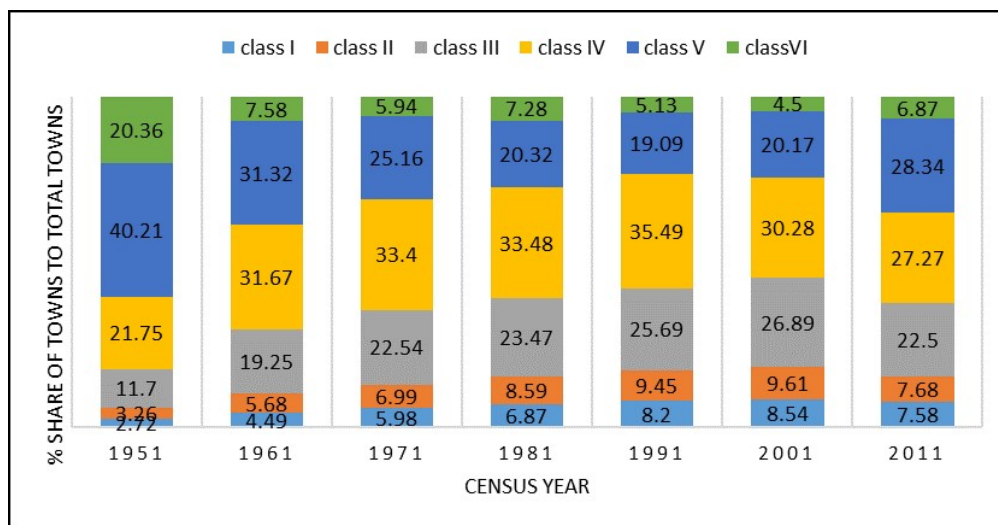
Source: Census of India (1951-2011)

Next, we examine what about the population of these towns of each type. Table 3.5 gives a clear picture of the class-wise share of towns and their population in the period of 1971-2011. In the class, I towns which contain 57.24   per cent of the urban

population in 5.98 per cent of towns in 1971, which is increased gradually in the years and the share of urban population increased to 70.2 per cent in 2011 census within the 7.8 per cent of towns and cities.

Table 3.5:Class wise share of towns and its population in India(in per cent)

Year	1971		1981		1991		2001		2011	
Category	Towns	Population	Towns	Population	Towns	Population	Towns	Population	Towns	Population
Class I	5.98	57.24	6.87	60.42	8.2	65.21	8.54	68.6	7.58	70.2
Class II	6.99	10.92	8.59	11.63	9.45	10.95	9.61	9.67	7.68	8.5
Class III	22.54	16.01	23.47	14.33	25.69	13.19	26.89	12.2	22.5	11.09
Class IV	33.4	10.94	33.48	9.55	35.49	7.77	30.28	6.8	27.27	6.37
Class V	25.16	4.45	20.32	3.58	19.09	2.6	20.17	2.3	28.34	3.36
Class VI	5.94	0.44	7.28	0.5	5.13	0.29	4.5	0.2	6.87	0.4

Source:Census of India(1971-2011)

In the class II towns,10.92 per cent of the urban population in 1971 decreased to 8.5 per cent in 2011. On the contrary, its share on account of the number of towns increased from 6.99 per cent to 7.68 per cent during the same period. At the same period, the class III and class IV, the share of the urban population decreased from 16.01 and 10.94 per cent to 11.09 and 6.37 per cent respectively. In which the percentage of the number of towns increased to 22.5 and 27.27 respectively in the census 2011. Similarly, in the case of class V and class VI, the share of the urban population decreased from 25.16 and 5.94 per cent to a mere 3.36 and 0.4 per cent respectively from 1971 to 2011.

Figure 3.4:Class wise share of Urban Population in India(in per cent)
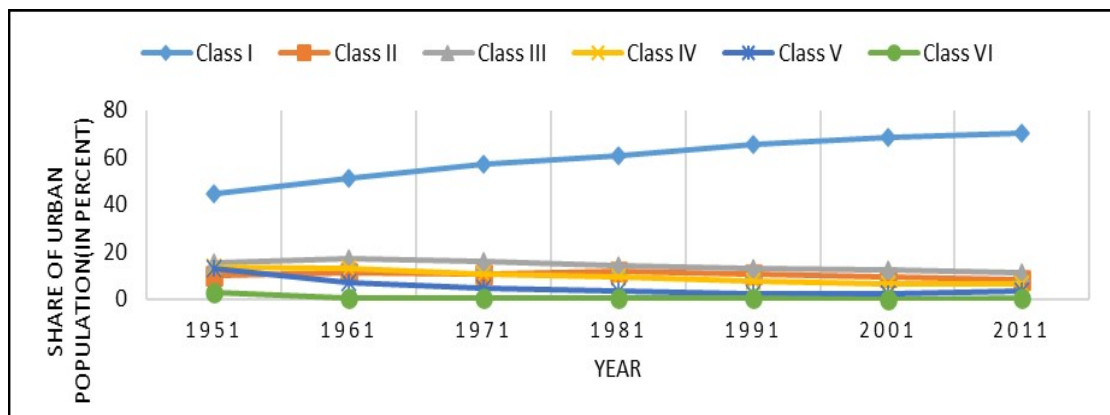
Source: Census of India (1951-2011)

From the above analysis, there is a high degree of population concentration in class I cities and towns. From the beginning onwards, the more urban population residing in class I cities and continuously increased to 70.2 per cent in the 2011 census. The remaining population around 30 per cent lies in the other class sizes. Hence, independent India's process of urbanisation has been entirely regulated by class I cities. This displays the spatial course of the growing process, particularly towards the concentration of several economic facilities and amenities introduced by the government over the decades after independence. Thus, class I cities are increasing than other classes and their progress is considerably faster than other cities and towns in the country. But the state and local governments initiate decentralisation of economic policies that leads to the development of small towns.

Table 3.6:Class-wise Urban Area in Square kilometre in India(1961-2011)

Year	Class I	Class II	Class III	Class IV	Class V	Class IV
1971	28.7	8.36	17.82	27.27	15.04	2.8
1981	34.99	8.88	19.46	24.7	9.68	2.28
1991	40.52	9.22	21.19	19.17	8.23	1.67
2001	42.46	10.88	21.21	16.97	7.47	1
2011	44.66	9.48	19.34	15.34	9.47	1.7

Source:Census of India(1951-2011).Note:*Figures in parenthesis shows per centshare to the total town area*

Table 3.6 displays the percentage share of the area of each urban classes from 1971 to 2011period.The class I cities area, increased from 28.7 per cent in 1971 to 44.66 per cent in 2011, which indicate that the tremendous urban area growth of these cities. At the same period, the number of towns increased in class I comparatively low than other classes. The figures show large and million-plus cities grow more rapidly in India and these cities comprise more than 70 per cent of the urban population in the 2011 census. We can see, a falling trend in the growth rate of population in an urban area during the census years 1981 and 1991 was changed at the national level. The level of urbanisation expanded more rapidly in the decade 2001-2011. We can see around 92 million increase in the urban population than the increment of the rural population since independence. This is mainly due to the reclassification of the urban and rural area and

migration from rural to the urban area. The last decade witnessed a rapid increase in the number of census towns.

3.3 An Overview of Urbanisation of Indian States

It is analysed that widespread changes have happened during the process of urbanisation among the various states of India. Even the smallest state, like Himachal Pradesh which reached 10 per cent of the urban population in the last census, is the lowest urbanised state. However, the National Capital of Delhi reached 98 per cent of the urban population, which is the highest urbanised place during the 2011 census. Almost all union territories have achieved a good level of urban people compared to various states. Among UTs, Andaman and Nicobar Islands have recorded the lowest share of urban population with 38 per cent during the 2011 census year.

In 1991, out of 25 states in the country, the level of the urban population in nine states was higher than the national average. In 2011, ten states had high urban population than the all India average, such as Goa, Mizoram, Maharashtra, Tamil Nadu, Kerala, Gujarat, Karnataka, Haryana, Punjab, and all Union Territories achieved much more than the level of urbanisation of all India average (31.16 per cent). Goa remained the most urbanised state with 62 per cent of the urban population. However, the backward states like Assam, Bihar, Nagaland, Sikkim, Tripura etc. are keeping less share of urban population which are below the national average(Table 3.7)

The share of the urban population in almost all the states was improved all during the decade 2001 to 2011, however, some states like Bihar, Maharashtra, Jharkhand, Chhattisgarh, West Bengal and Madhya Pradesh did not increase the share of the urban population significantly in 2011 as compared 2001 census. The states like Goa, Mizoram, Tamil Nadu, Kerala, and Maharashtra are the top five states with maximum urbanisation level according to the census 2011. In the case of UTs, they achieved much more level of the share of the urban population compared to the various states of India. The ranking of states was more or less the same in all years except in Kerala, it improved its ranking from 11th in 1981 to 4th in 2011.

Table 3.7:Urban population of States and UTs of India in1991-2011(in per cent)

States and UTs	1991	2001	2011	States and UTs	1991	2001	2011
Andhra Pradesh	27	27	30	Nagaland	17	17	29
Arunachal Pradesh	13	21	23	Odisha	13	15	17
Assam	11	13	14	Punjab	30	34	37
Bihar	13	10	11	Rajasthan	23	23	25
Chhattisgarh	NA	20	23	Sikkim	9	11	25
Goa	41	50	62	Tamil Nadu	34	44	48
Gujarat	34	37	43	Telangana	NA	NA	NA
Haryana	25	29	35	Tripura	15	17	26
Himachal Pradesh	9	10	10	Uttar Pradesh	20	21	22
JammuandKashmir	24**	25	27	Uttarakhand	NA	26	30
Jharkhand	NA	22	24	West Bengal	27	28	32
Karnataka	31	34	39	AndamanandNicobar Islands*	27	33	38
Kerala	26	26	48	Chandigarh*	90	90	97
Madhya Pradesh	23	26	28	DadraandNagar Haveli*	8	23	47
Maharashtra	39	42	45	DamanandDiu*	47	36	75
Manipur	28	27	29	Lakshadweep*	56	44	78
Meghalaya	19	20	20	NCT of Delhi*	90	93	98
Mizoram	46	50	52	Puducherry*	64	67	68
All India					26	28	31

Source:Census of India(1991-2011).*Note:'NA'shows Not Applicable,newly formed states.'**.'indicates that projected figure.'*'union territoriesof India.*

Figure 3.5:Share of Urban Population of Indian States 1991-2011(in per cent)
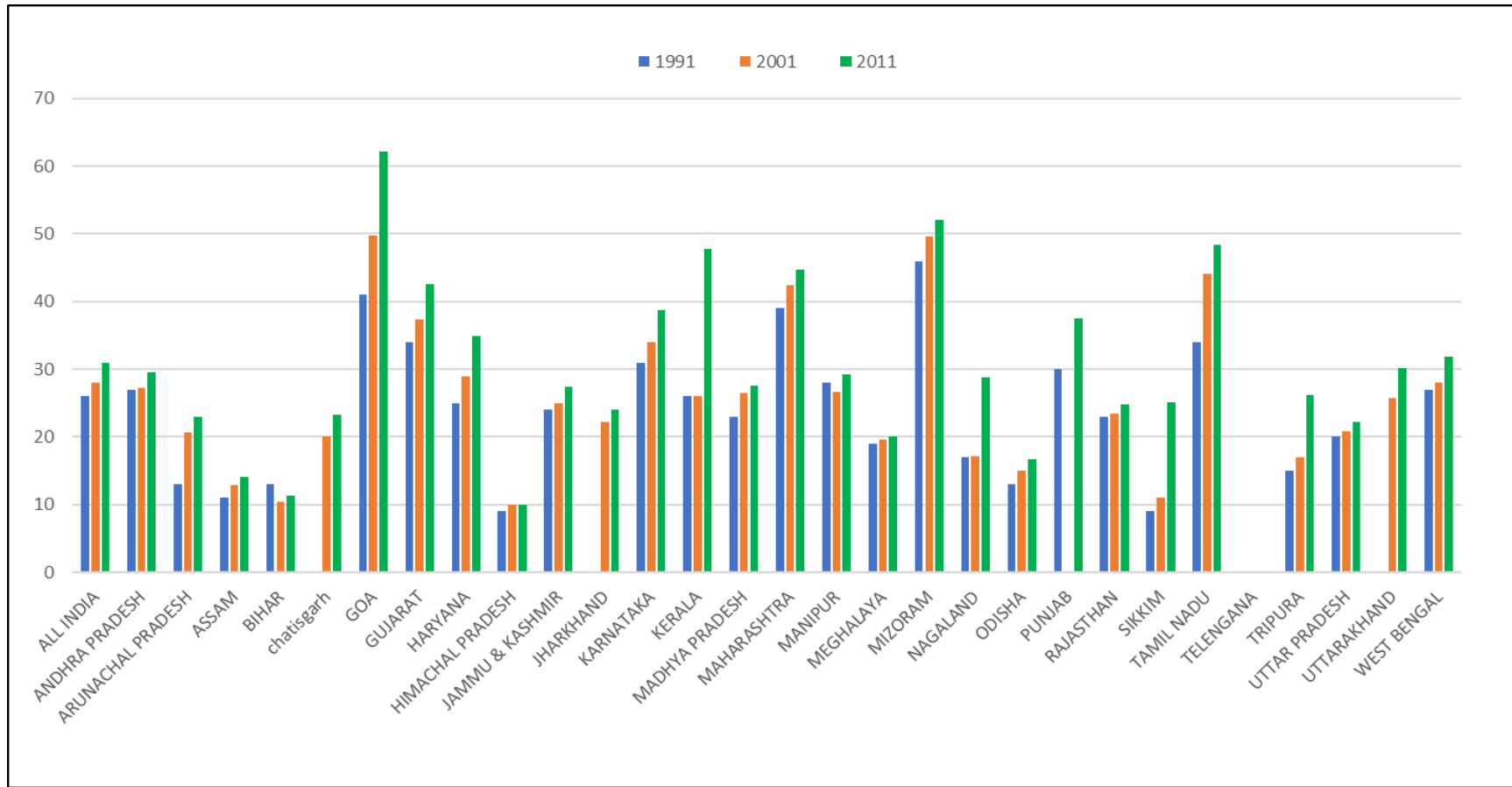
Source:Census of India(1991-2011).

It is considering that the annual exponential growth rate of urban population during the period of the last two decades between 1991-2011 the level of the urban population in majority states has exposed a steady increase. If the similar movement would remain in these decades of the national average in which 31 per cent of the urban population in the place of 28 per cent in the census of 2001.

Table 3.8:Annual Exponential Growth Rate of Urban Population(1991-2011)

States and UT$_S$	1991-01	2001-11	States and UT$_S$	1991-01	2001-11
Andhra Pradesh	1.52	3.05	Manipur	1.31	3.70
Arunachal Pradesh	7.49	3.31	Meghalaya	3.24	2.71
Assam	3.29	2.48	Mizoram	3.33	2.60
Bihar	-2.7	3.03	Nagaland	5.11	5.10
Chhattisgarh	NA	3.50	Odisha	2.68	2.39
Goa	3.41	3.02	Punjab	3.26	2.30
Gujarat	2.88	3.07	Rajasthan	2.76	2.55
Haryana	4.19	3.69	Sikkim	4.93	9.42
Himachal Pradesh	2.86	1.45	Tamil Nadu	3.72	2.39
JammuandKashmir	3.18	3.11	Telangana	NA	NA
Jharkhand	NA	2.80	Tripura	2.61	5.66
Karnataka	2.58	2.74	Uttar Pradesh	2.22	2.55
Kerala	0.74	6.56	Uttarakhand	NA	3.36
Madhya Pradesh	0.48	2.28	West Bengal	1.83	2.61
Maharashtra	3.01	2.12	All India	2.72	2.75

Source: Census of India (1991-2011).Note'*' indicates Union Territories.'NA' -not available

The above analysis indicates that in the decade 1991-2001, the growth of the urban population continues to decrease compared to earlier periods. Most of the states displayed a decrease in the annual growth rate of urban population during the period 1991-2001. But there is a gradual increase in the urban population in the decade of 2001-11 of almost states and Union Territories of India. The decade 2001-2011, shows the annual exponential growth rate of the urban population in the state Kerala

was 6.56 per cent which was the highest urban growth among the other states in India. At present, the level of urbanisation generates many towns, especially in the class size of III, IV and V, where they are eligible to the urban status due to their population size. It has been observed that, to the one side, they are providing basic infrastructure, the landscape and environment in the towns and cities had steadily help to the growth of population in the urban areas. Next, we try to examine the level and intensity of urbanisation in Kerala.

3.4 Outline of Kerala

Kerala lovingly called "God's own country", the southwestern coastal state of the Indian Peninsula. Before the independence of India, Kerala was one of the princely states in India. Later, on 1st July 1949, the princely states of Travancore and Cochin united to form the Travancore-Cochin State. Later, When the Malabar region(formerly part of Madras state)was added to the Travancore-Cochin State. The state was formed on 1 November 1956. Kerala lies between the Arabian Sea in the West and the Western Ghats in the East with an area of 38863 sq. Km. It is one of the five states in the linguistic-cultural area known as South India. The neighbouring states of Kerala are Tamil Nadu and Karnataka[1].

The location of Kerala is geographically located between 74 0 7'47"and 770 37"12"north latitudes and 80 17'30'and 12 0 47 east longitudes.Geographically Kerala is divided in the east-west direction into three parts-Highland, Mid plains, and coastal areas. The area in and around the Western Ghats or Sahyadri are mostly hilly and thick evergreen rainforests. The major rivers of Kerala originate from these highlands. Silent Valley in the Palakkad district is one of the biodiversity hotspots in the world. The highest peak in Kerala is Anamudi(2695 m).On the West, the Coastal belt lies parallel to the Western Ghats. In between, the highland and coastal plain lies the mid-lands. It is generally a combination of hills and valleys. The 41 rivers flowing to the Arabian Sea and the lakes in the west, the three east flowing rivers, the lakes and backwaters make Kerala a water-rich landmass.[2]

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[1] Government of Kerala. Official Web Portal
https://kerala.gov.in/general-administration-department

[2] ibid

3.4.1 Administrative Units of Kerala

For administrative purposes, the State is divided into 14 revenue districts: Thiruvananthapuram, Kollam, Alappuzha, Pathanamthitta, Kottayam, Idukki, Ernakulam, Thrissur, Palakkad, Malappuram, Kozhikode, Wayanad, Kannur and Kasaragod. Based on geographical, historical and cultural similarities, the districts are generally grouped into North Kerala (Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram), Central Kerala (Palakkad, Thrissur, Ernakulam, Idukki) and South Kerala (Thiruvananthapuram, Kollam, Alappuzha, Pathanamthitta, Kottayam). The districts have the same name as the important town or city in the district, the exception being Wayanad district (official web portal, Govt .of Kerala)

During the 1950s' Kerala has only eight districts. Malappuram Districts formed taking portions from Kozhikode and Malappuram. Then Wayanad and Idukki District were formed. In 1982, the Pathanamthitta district was formed by taking several areas of the Alappuzha, Kollam, and Idukki districts. At present, there are 14 districts divided into 75 Taluks. There are 14 District Panchayats,152 Block Panchayats,941 Grama Panchayats,87 Municipalities,6 Corporations and 1 Township. Some of the districts and their towns were renamed in 1990 like Thiruvananthapuram(formerly known as Trivandrum), Kollam(Quilon), Alappuzha(Alleppey), Thrissur(Trichur or Thrishivaperur), Palakkad(Palghat), Kozhikode(Calicut)and Kannur(Cannanore)[3].

Kerala enjoys unique geographical features which is the best tourist destination in the nation. The state of Kerala considered the most advanced society with a hundred per cent literacy and high social indicators. The major cities of the state are Thiruvananthapuram, Kollam, Kochi, Thrissur, and Kozhikode. Next, we try to examine the pattern and trend of urbanisation and inter-district variations of urbanisation in Kerala.

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[3] Ibid

Figure 3.6:Kerala administrative divisions in 2011

Source:census of 2011,Govt.of India

3.4.2 Demography of Kerala

One of the leading indices of an economy's performance is the high rate of economic growth which should be sustained over time. Though, there are several other factors such as economic and social, which affect the growth path. One of them is the population growth rate of the state. Kerala experienced the demographic transition to an extent by low birth rates and low death rates accompanying the growing tertiary activities and urbanisation in the last few decades.

Table 3.9:Growth of Population in Kerala 1951–2011

Census Year	Population (in lakh)	Decadal change(in per cent)	Density of population (in sq.km)
1951	135.49	22.8	349
1961	169.04	24.8	435
1971	213.47	26.3	549
1981	254.54	19.2	655
1991	290.98	14.3	749
2001	318.41	9.4	819
2011	333.87	4.8	859

Source: Census of India

Population growth of the state Kerala witnessed an increasing trend from 135.49 lakhs in 1951 to 333.87 lakhs in 2011.The decadal changes showing a decreasing trend in Kerala from 22.8 per cent in 1941-51 to 4.8 per cent, whereas in All India, it was 17.8 per cent in the 2001-2011 period. The density of the population of Kerala shows a rapid increase from 349 persons per Sq.Km in 1951 to 859 persons per Sq.Km in 2011, whereas in India, it was 117 and 382, respectively. The data shows an increasing trend of population growth with sharing less land to more persons or a high concentration of population can be seen in Kerala. (Table 3.9). The trend of population growth of Kerala shows a moving toward zero population growth. The state had the lowest population growth rate in the decade 2001-2011 compared to other states of India.

Table 3.10:Decadal Change of Population India and Kerala During 1951-2011 (In per cent)

Year	India	Kerala
1951	-	-
1961	21.6	24.8
1971	24.8	26.3
1981	24.7	19.2
1991	23.8	14.3
2001	21.4	9.4
2011	17.8	4.8

Source: Census of India (1951-2011)

We can see, Kerala is experiencing a very low population growth rate, as compared with the growth rate of the population of the nation. Kerala's declining growth rate of the population mainly due to a decline in the birth rate, a high level of literacy and education and out-migration. The state of Kerala has turned into an out-migration State from the 1930s and reached its peak level during the 1981-91 period. It is expected that Kerala is probably achieving a zero population growth rate in 25 to 30 years(Kerala Development Report 2010).

Figure 3.7:District wise Average Decadal Growth Rate of Population of Kerala(1951-2011)
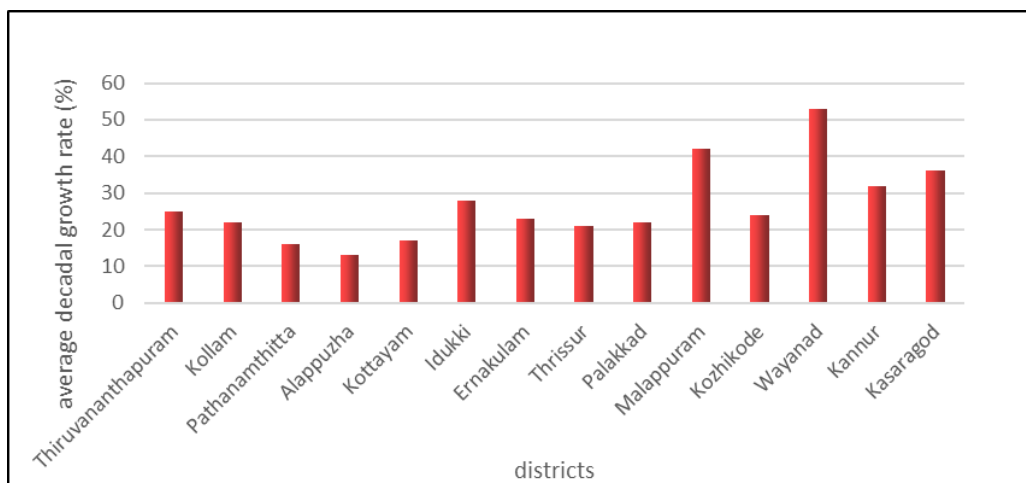
Source: Census of India(1951-2011)

If we examine the inter-district variations, it can be seen that the population size is maximum in the Malappuram district(41.11 lakhs) followed by Thiruvananthapuram district(33.07 lakhs), as per the 2011 Census data. The lowest population size has been found in the Wayanad district(8.17 lakh) and Idukki district(11.07 lakh). Both districts have a uniqueness in that sense they are hilly regions of Kerala. The Malappuram district experienced is the largest populated district in Kerala with an average decadal growth rate of 42 per cent(1951-2011)and has practised the highest population growth rate(13.39 per cent)during this period. The assessment of the population growth rate during the 1950s and at current period displayed that there is a spatial change in the high population growth rate from the southern districts towards the central and northern districts of Kerala. Where the southern districts of Kerala in the 1950s experienced the highest population growth rate, but the 2011 census shows the highest population growth rate is got in the central and northern districts of Kerala.

The natural increase of population in Kerala is only 6.98 per 1000 population as against it was 12 per 1000 population of India. From the 1960s onwards Kerala experienced a declining trend of The Total Fertility Rate. The Total Fertility Rate(TFR)for Kerala in 2016 was 1.8. Kerala is presently undergoing a progressive demographic transition as the death rate, and birth rate levels have come down. According to State Urbanisation Report (2012), the state has a low population growth rate mainly due to a low birth rate. One of the significant factors of Kerala's extraordinary performance in the reduction of fertility rate is the high level of women education.

3.5 Trend and Pattern of Urbanisation in Kerala

The present chapter mainly focuses on analysing the urban growth and urbanisation pattern of Kerala. We intended to explain the urbanisation process witnessed in Kerala within this full set. To realize the demographic and geographical measurement of urbanisation in the state, the succeeding indicators of urbanisation have been measured in this study:(a)Ratio of urban population to total population or degree of urbanisation which indicates the level of urbanisation in an area. (b)Decadal growth rate and annual exponential growth rate, which provides the

change that occurred in an urban population in percentage related to the base year. (c)The growth of the number of towns and cities shows the extent to which urban centres serve rural areas. (d)The percentage of the population in various Class sizes of cities and towns shows the domination of big cities and towns as compared to small and medium towns in the process of urbanisation.

From the available data, the study tries to analyse an inter-district variation of urbanisation during the period from 1961-2011. As we discussed in the previous chapter, the Urban Intensity Index, a composite index for measuring urban growth are also used to measure the index of urban growth in Kerala and its fourteen districts.

3.5.1 Urbanisation based on Population Growth or Degree of Urbanisation

The census data on population from 1951 to 2011 used for a systematic examination of the trend of the urban population in Kerala.The level of urbanisation or degree of urbanisation is calculated as the proportionate number of people live in urban areas in a specific place.   .

$$\text{Share of Urban population} = \frac{Urban\ Population}{Total\ Population} \times 100$$

$$\text{Share of rural population} = \frac{Rural\ Population}{Total\ Population} \times 100$$

$$\text{Urban-Rural ratio} = \frac{Urban\ Population}{Rural\ Population} \times 100$$

These are the most generally used formulas for measuring the level of urbanisation.The per cent of the urban population to total population is considered as degree of urbanisation or urban content.

Population variables are considered as both the cause and the effect variables of the development process. According to the census 2011, the total population of Kerala 333.87 lakhs with 160.21 lakh males and 173.66 lakh females. Kerala's share of the population to the nation's total population decreased from 3.10 in 2001 to 2.75 per cent in 2011. Kerala ranks 12th position among the states and union territories of India on account of its population size. In absolute number, the population of Kerala

has increased by 15.49 lakh during 2001-2011(2011 census). From 1971 onwards, the net addition in population has declined steadily during each decade.

Table 3.11:Trend of Urbanisation in Kerala 1951-2011

Year	Total Population (in persons)	Urban population (in persons)	Urban Population (per cent)	The decadal growth rate of urban population (per cent)	Annual Growth Rate(Urban) (per cent)
1951	13549118	1825832	13.48	-	-
1961	16903715	2554141	15.11	39.89	3.36
1971	21347375	3466449	16.24	35.72	3.05
1981	25453680	4771275	18.74	37.64	3.19
1991	29098518	7680294	26.39	60.97	4.76
2001	31838619	8267135	25.97	7.64	0.74
2011	33387677	15932171	47.72	92.72	6.56

Source;Census of India 2011,Series 33,Kerala.

The urban population and growth of urban area are subject to the definition of some essential criteria and their application varies in the census. The definition of a town or urban area in Kerala has kept on unchanged afterwards the 1961 census. The share of urban population to total population has raised from 13.48 per cent in 1951 to 25.97 per cent in 2001. But in the last decade from 2001-2011, Kerala witnessed a fast increase in urban population to 47.72 per cent in the 2011 census.

We can see a small decrease in the urban content from 26.39 per cent in 1991 to 25.97   per cent in 2001 or 0.43 per cent point decrease in the share of urban population was due to declassification of forty-two towns, and the urban population growth rate had slightly decreased to a low level of 7.64 per cent in 2001. Moving back from this trend, the rate of growth of the urban population has reached above 92 per cent in 2011, achieved a high rate of growth. The urban population of the state was comparatively lower than the national average up to the 2001 census and lay below 28 per cent as in the 2001 census. During the decade 2001-11, Kerala has marked the change on account of urbanisation having 47.72 per cent urban content with 92.72 per cent of decadal growth rate and 6.62 per cent of annual growth rate.

(Table 3.11). The state of Kerala was experiencing a very low population growth rate accompanied by a rapid growth rate of urban population and a negative growth rate of population in rural areas during the last decade 2001-11.

Figure 3.8:Urban and Rural share of the population in Kerala in per cent (1951-2011)
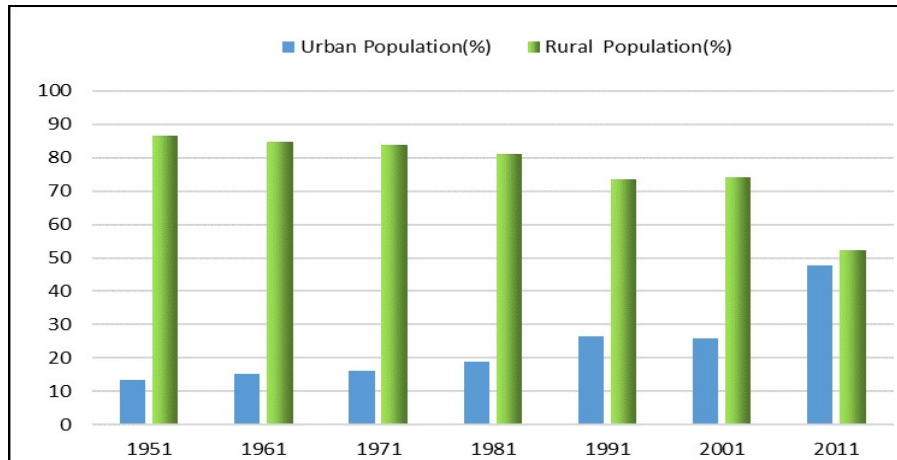
Source:Census of India(1951-2011)

We can measure the level of urbanisation by examining the trend of the rural population of a region during the same period. In 1951, before the formation of the Kerala state,86.52 per cent of the total population lived in rural areas, and 13.48 per cent of the population lived in urban areas. From 1951-2011 period, there is a declining trend of share of the rural population and decadal growth rate of the rural population. In the decade 2001-11, it was a negative growth rate of the rural population; on the other hand, the urban population growth reached its maximum level in the same period. The existing pattern of distribution of the urban and rural population of Kerala has occurred like in the advanced countries. At the level of urbanisation, the state Kerala was in the 19th rank in the 2001 census and upgraded its place to 9th rank in the 2011 census.

3.6 District-wise Level of Urbanisation in Kerala

We can see the degree of urbanisation or the share of urban population increases in all districts of Kerala since the formation of the state. In 1971, among the fourteen districts of Kerala, the highest degree of urbanisation was found in the

Kannur district (39.97 per cent) and in the Kozhikode district (30.83 per cent). Similarly, most of the districts had no significant urban population in 1971. During 1971, most of the districts had urban content below the state average (16.24 per cent).In the 2001 census, Kannur and Ernakulam reached top positions and Idukki and Wayanad had a low level of urbanisation compared to the other districts. Gradually, it increases in almost districts except for the hilly districts like Idukki and Wayanad over these years.

Table 3.12:District-wise Urban population in Kerala(in per cent)

Districts	1971	1981	1991	2001	2011
Thiruvananthapuram	26.00	25.26	33.88	33.75	53.80
Kollam	10.33	15.50	18.53	18.02	45.05
Pathanamthitta	0.00	0.00	13.05	10.03	10.99
Alappuzha	19.34	18.45	30.46	29.47	54.00
Kottayam	13.56	9.37	17.55	15.35	28.63
Idukki	2.77	3.69	3.85	5.10	4.69
Ernakulam	26.69	39.56	48.74	47.56	68.07
Thrissur	11.74	21.10	26.31	28.22	67.17
Palakkad	12.70	10.11	15.72	13.62	24.09
Malappuram	6.73	7.40	9.12	9.82	44.18
Kozhikode	30.83	27.18	38.34	38.25	67.15
Wayanad	0.00	0.00	3.54	3.79	3.87
Kannur	39.97	50.28	50.28	50.28	65.05
Kasaragod	16.68	4.94	16.45	19.41	38.78
Kerala	16.24	18.74	26.39	25.97	47.72

Source:Census of India(1971-2011)

As per the census 2011, Kerala reached around 50 per cent of the urban population. The proportion of urban population above 60 per cent of the population achieved by four districts, such as Ernakulam, Thrissur, Kozhikode, and Kannur. Among these districts, Ernakulam reached the top position with 68.07 per cent of the urban population. As followed in the earlier census, Idukki and Wayanad districts have a low urban population compared to the other districts.

Though, in the case of the share of the urban population to the state average, the top districts were Kannur(18.59 per cent)and Ernakulam(16.12 per cent) in 1971. If we take trend, the share of the urban population of each district to the state average,

the most urbanised district (Ernakulam) showed a declining trend since the 1981 census. Similarly, Thiruvananthapuram, Pathanamthitta, Alappuzha, Kottayam, Idukki, Palakkad, Kozhikode, Wayanad and Kannur districts follow a declining trend of share of urban population to the total urban population of the state average. On the other hand, Thrissur, Malappuram, Kollam, Kasaragod showed an increasing trend of the share of urban content to the state average.(Table 3.13)

Table 3.13:District wise share of the Urban population to the state average in Kerala*(in per cent)

Districts	1971	1981	1991	2001	2011
Thiruvanthpuram	14.48	12.97	13.04	13.21	11.16
Kollam	4.81	6.67	5.83	5.64	7.45
Pathanamthitta			2.02	1.50	0.83
Alappuzha	8.14	6.81	7.96	7.52	7.20
Kottayam	5.29	3.15	4.19	3.63	3.55
Idukki	0.53	0.69	0.53	0.70	0.33
Ernakulam	16.12	19.83	17.93	17.87	14.02
Thrissur	6.33	10.18	9.41	10.15	13.15
Palakkad	5.42	4.09	4.89	4.31	4.25
Malappuram	3.16	3.51	3.69	4.31	11.40
Kozhikode	14.23	12.07	13.12	13.32	13.00
Wayanad			0.58	0.59	0.41
Kannur	18.59	19.19	14.79	14.67	10.31
Kasaragod	2.89	0.85	2.30	2.83	3.17

Source:Census of India(1971-2011).*scholar's calculation

District of Idukki, Wayanad and Pathanamthitta are showing the lowest Urbanisation compared to the other districts. Central and North Kerala are subjected to high-level urbanisation, especially during 2001-2011, while the eastern part of Kerala with forest cover is feeling a low level of urbanisation including the districts like Wayanad, Idukki, Palakkad and Pathanamthitta. Almost all the coastal area of Kerala is moderately urbanised. Thus, it can be viewed that Kerala is experiencing a high level of urbanisation all over the State apart from in the high range region, especially during the last decade.

3.4.4.1 Growth of Cities and Towns in Kerala

An urban area can be defined by taking different criteria of demographical, physical, and economic characteristics. But then all the towns have the elementary features of being spatial concentrations of people and engaged in economic activities. In India, the urban area represents Statutory Towns, Census Towns and urban Outgrowths. Urban area and its definitions and criteria formed by the census of India are discussed in the previous chapter. In India, the number of towns and urban agglomerations has increased from 2363 in 1961 to 7935 in 2011.

Table 3.14:Growth of Towns in Kerala from 1961-2011

Year	No.of.Towns	Decadal Growth Rate	The Average Compound Growth Rate
1961	92		
1971	88	-4.34	-0.44
1981	106	20.45	1.88
1991	197	85.85	6.39
2001	159	-19.29	-2.12
2011	520	227.04	12.57

Source:Census of India(1961-2011)

During the 1961 census, there were 92 towns in the state of Kerala. In the 1981 census,32 towns of 1971 declassified as rural area and 50 towns were newly added to urban areas and the total number of towns was106.In the 1991 census, there were 91 towns newly added and increasing the total number of towns to 197. As contrary to the 1991 census, in the 2001 census 42 existed towns were declassified and 16 census towns were unified with three municipal corporations of Thrissur, Kollam and Thiruvananthapuram and 18 towns were further added to urban areas. In addition to this, two statutory towns like Eloor and Eratupetta were considered census towns. Above all, the 2011 census witnessed a rapid increase in the number of census towns in Kerala in which 361 towns were added and increased to 520 towns. The decadal growth rate of towns in 2001-2011 was 227.04 per cent in Kerala and it was only 19.54 per cent in all India. In the last decade, Kerala witnessed a tremendous increase in the number of towns and the corresponding urban population.

Table 3.15:District-wise Statutory and Census Towns in Kerala(1991 and 2011)

Districts	1991		2001		2011	
	Statutory Town	Census Town	Statutory Town	Census Town	Statutory Town	Census Town
Thiruvananthapuram	5	5	5		5	26
Kollam	3	5	3		3	24
Pathanamthitta	4		3		3	1
Alappuzha	5	9	5	6	5	33
Kottayam	4	2	4	2	4	13
Idukki	1		1		1	
Ernakulam	12	16	9	16	9	47
Thrissur	7	34	7	21	7	128
Palakkad	5		5		4	17
Malappuram	5		5		5	39
Kozhikode	2	16	3	10	3	48
Wayanad	1		1		1	
Kannur	7	31	7	30	7	60
Kasaragod	2		2		2	25

Source:Census of India(1991-2011)

Growth of statutory towns and census towns of district wise in Kerala during the years 1991-2011 are illustrated in table 3.15. As in the state figure, there are also a slight decline or declassification of certain census towns during the decade 1991-2001 which can be seen in all the districts. We can see the rapid growth of census towns in the 2011 census in all the districts except Idukki, Wayanad and Pathanamthitta. Out of the districts, Thrissur district reached the first position with 128 census towns.

Urban area includes all statutory towns, census towns, an urban agglomeration, Out growths etc. The definitions and explanations of the urban area are discussed in the previous chapters. The number of urban areas geographically allotted urban area (in sq. km) of each district depicted in table 3.16. We tried to analyse the growth of the urban area by comparing two periods between 1971 and 2011. Almost all districts have a rapid increase in their urban areas in 2011 compared to the 1971 census except Idukki, Wayanad and Pathanamthitta, where the share of the urban area to total area limited to 1 to 3 per cent. The number of urban areas is at the most level in the Thrissur District with 135 number in 2011census. The share of the urban

area to the total area in square kilometre was also showing a rising trend in 1971-2011 period. It was around 10 per cent in almost districts in 1971 period. The share of the urban area increased to more than 30 per cent in the majority of districts over this time. Low urban populated districts had witnessed low urban area growth and low urban density of population.

Figure 3.9:District-wise Number of Urban Area of Kerala in 1971 and 2011
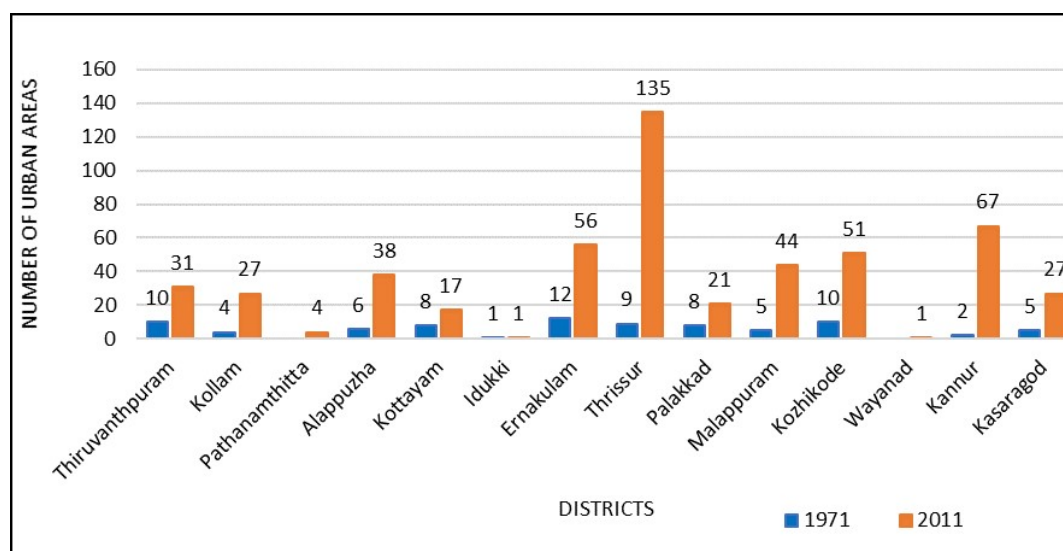
Source:Census of India,series 33.District Census Handbook.

We can see rapid jurisdictional changes which lead to rapid urbanisation and urban area growth in the state. The number of urban areas and urban area in sq. km has been showing an increasing trend. Though the urban density shows a decreasing trend from1971 to 2011, which indicated that the concentration of population decreases and emerges more urbanised areas in the state. This is due to the rapid increase of medium and small towns and urban style of living even in rural area. In the census of 2011, Kerala witnessed fast and speedy urbanisation.

According to the State Urbanisation Report (2011)of Kerala identified the rapid growth in the urban population in the state from 25.96 per cent in 2001 to 47.72 per cent in 2011. During the decade 2001-11, the urbanisation increases by 83.20 percentage than accounted in the decade 1991-2001. It forwards a main and phenomenal task on urbanisation, the association between the urban and the rural areas, and the economic sources of both urban and rural communities. Let us examine the change of urban area in geographical terms as per the square kilometre.

Table 3.16:District-wise Urban area in Kerala(in sq.km)

Districts/state	1971	1981	1991	2001	2011
Thiruvananthapuram	155.5	165.6	257.49	271.7	577.5
Kollam	35.3	59.2	73.65	73.65	416.25
Pathanamthitta*			100.3	71.86	81.27
Alappuzha	116.4	117.27	288.08	260.63	550.11
Kottayam	136.6	54.2	90.58	87.14	273.71
Idukki	35.43	35.43	35.43	67.43	35.43
Ernakulam	217.9	377.6	544.1	530.3	925.26
Thrissur	83.43	215.3	301.2	345.85	1161.17
Palakkad	116.32	94.6	221.85	144.24	399.69
Malappuram	77.9	113	172	186	899.59
Kozhikode	189.23	168.12	427.23	504.13	944.15
Wayanad*			40.74	40.74	40.74
Kannur	100	137.9	637.29	637.29	1003.66
Kasaragod	98.1	98.1	104.78	125.5	290.37
Kerala	1376.58	1674.29	3294.72	3314.46	7598.9

Source;Population abstract tables in the various census,state urbanisation report,Department of Urban Affairs.Govt.of Kerala

The State Urbanisation Report(2011)analysed the areal re-classification of a rural area as urban, because of the change in the employment structure from agriculture to non-agriculture employment reasons such as vast urbanisation in the state. The report evaluates that the current urbanisation of Kerala is an urban blow-out rather than the outcome of the structural variations in the state economy.

According to Kuruvilla(2014), Kerala witnessed the concept of"Urbanization by Implosion" where the population growth in rural areas lead to the extension of villages, multiplication of homesteads and development of homes along with fields and barrens. Though, the vast growth of census towns in the state over the period 2001 and 2011 proved this concept. He found this concept relevant in areas where there is a mixture of the agrarian economy and high density of population as in Kerala. In the state, this transformation has been backed by other elements such as high literacy rates, high wage rates, foreign remittances etc which helps small

villages turning into active towns. The increasing trend of shifting the workforce from the agriculture sector is an additional reason for this transformation. Census jurisdiction is applied and created 461 new census towns in Kerala are all in village panchayat administration.

3.6.2 Class-wise Classification of Towns in Kerala

The Census of India has categorised the towns as six classes.A class size-wise analysis of urban growth based on population in the number of towns is illustrated in table 3.17.

Table 3.17:Classification of towns by size class in Kerala(1961-2011)

Class size	1961	1971	1981	1991	2001	2011
Class I	4	5	6	7	10	9
Class II	5	7	8	20	24	29
Class III	31	40	64	100	72	254
Class IV	33	25	21	53	37	159
Class V	18	9	6	16	15	61
Class VI	7	2	1	1	1	8
Total	92	88	106	197	159	520

Source:Census of India(1961-2011)

There is a constant and continuous growth of towns in class I and class V.In the category of class I,there are only four towns in 1961 and increased to 10 in 2001 which declined to 9 towns in 2011 census.Out of the ten towns in 2001 census,Cherthala municipality had two Out Growths(Vayalar and Thanneermukkam)in 2001 census and reclassified as census towns in 2011 census.Therefore,the urban population of Cherthala(M)declined and lay in the class III towns.The number of class II towns increased continuously during the period.The number of towns in class III was 100 in 1991 census which was declined to 72 in 2001 as the reclassification of urban areas.In 2011 census the towns of Class III were 254,out of this 164 newly formed census towns and fifteen outgrowths in 2001 census,reclassified as census towns and upgraded in class III category.The decadal growth of the number of towns in class III was 252.52 per cent during the decade 2001 to 2011.

In the class IV category, the number of towns was 159 in the 2011 census; out of the 37 towns in 2001 in class IV,33 continued in this class, three towns upgraded to class III, and the Idukki township was in class IV in 2001 census, declassified as a rural area in 2011 census. The newly formed 122 census towns and one outgrowth of the 2001 census, classified as census towns in the 2011 census also belong to the class IV category. In class V,15 towns of the 2001 census increased to 61 towns in the 2011 census. Out of the 15 towns,10 maintained their status in the 2011 census, the remaining four upgraded to class IV and one degraded to class VI. Fifty-one new census towns and one OG classified as census town included in class V.In 2001, class VI had only one town, that was Kannur Cantonment and seven small census towns included in the 2011 census. Most numbers of towns belong to class III and followed by the Class IV category.

Table 3.18:Share of population in each class size in Kerala(1991-2011)

Class size	Share of Each Class(per cent)		
	1991	2001	2011
Class I	31.62	44.66	20.48
Class II	15.98	19.21	11.85
Class III	39.90	27.78	49.75
Class IV	10.77	6.85	14.77
Class V	1.67	1.44	2.93
Class VI	0.06	0.06	0.23

Source: Census of India (1991,2001,2011)

The share of the population of each class size illustrated in table 3.19. The share of the urban population in class I category was 31.62 per cent in 1991 with seven towns and an increased number of towns to 10 in 2001 and the percentage of the population increases to 44.66 per cent. However, in the 2011 census, the number of the urban area in class I declined to 9 and the population share falling to 20.48 per cent. The percentage share of the urban population is highest in Class III size with around 50 per cent in 2011 from 27.78 per cent in 2001. The class IV size bears 14.77 per cent of the urban population in 2011 as against 6.85 per cent in the 2001 census. The share of urban population was negligible in class V and class VI with 2.93 and 0.23 per cent respectively in the 2011 census. As the class size of the urban

population, the density of the population is also higher in the upper classes and less in the lower levels.

On the contrary to the previous census, the urban population is spread in all class sizes especially in the class III category mainly due to the formation of census towns in the 2011 census. In Kerala, the rapid urbanisation in effect arises new medium-size towns and spread the urban population within the 520 towns. The class size urban population changes rapidly in the 2011 census. The pattern of urban growth changes in the state of Kerala since the 2011 census; more or less 75 per cent of the urban population are living in class II, class III, and class IV size towns. This again led to the spreading effect on their surrounding areas and lead to more urban growth in future years.

3.6.3 Degree of Urban Concentration

The degree to which the people of a region is urbanised denotes that the degree of the urban concentration of that area. The value of urban concentration less than 100 indicates that the low concentration of the urban population. The districts of Kerala displayed significant disparities in their urban concentration. The districts like Kannur, Kozhikode, Palakkad, Ernakulam, Pathanamthitta and Thiruvananthapuram have shown as the trend of decrease in the degree of urban concentration throughout 1991-2011. Whereas the districts like Kasaragod, Malappuram and Thrissur have increased continuously in the degree of urban concentration over the same period.While, in the districts, Wayanad and Idukki witnessed rising urban concentration from 1991-2001 then decreased over the decade 2001-2011. Kottayam and Alappuzha districts did not find many variations in urban level over these periods.

Kollam district displayed a quick rise during the decade 2001-2011. Remarkably, only six districts have higher values with more than 100 in 2011. The degree of urban concentration is the uppermost in Ernakulam district and the lowermost in Wayanad. The district Kannur holds the highest urban concentration in 1991 and 2001 and sharply declined in 2011, whereas the Malappuram districts had a low rate of urban concentration in 1991 and 2001, yet suddenly increased in 2011. There is a

positive association between the share of urban population and the degree of urban density.

Table 3.19:District-wise Degree of Urban Concentration*of Kerala

Districts	1991	2001	2011
Thiruvananthapuram	128.37	130.02	112.74
Kollam	70.20	69.43	94.40
Pathanamthitta	49.44	38.64	23.03
Alappuzha	115.44	113.51	113.16
Kottayam	66.50	59.11	60.00
Idukki	14.58	19.65	9.83
Ernakulam	184.70	183.20	142.65
Thrissur	99.70	108.72	140.75
Palakkad	59.56	52.48	50.47
Malappuram	34.57	37.84	92.59
Kozhikode	145.28	147.33	140.73
Wayanad	13.40	14.61	8.10
Kannur	190.53	193.68	136.31
Kasaragod	62.32	74.77	81.27

Source:Census reports.*Calculated by the scholar

The change of the urban area of all districts gradually increases up to the 2001 census. Though the census 2011 makes sudden changes in the urban area of all districts except, Idukki, Wayanad and Pathanamthitta districts. District-wise growth of the urban area is illustrated in the figure, where Malappuram, Kollam, Thrissur, Kottayam, Palakkad, Kasaragod, Alappuzha etc have witnessed more than 100 per cent of change in the urban area in 2001-2011. The districts like Idukki, Wayanad, Pathanamthitta, have not reported significant changes in their urban area. The most urbanised districts like Ernakulam and Kannur witnessed around 50 per cent change in their urban area.

Table 3.20:Tempo or speed of Urbanisation

Districts/state	1991-2001	2001-2011
Thiruvananthapuram	-0.37	59.39
Kollam	-2.71	149.92
Pathanamthitta	-23.10	9.56
Alappuzha	-3.27	83.26
Kottayam	-12.56	86.59
Idukki	32.51	-7.98
Ernakulam	-2.43	43.13
Thrissur	7.27	137.98
Palakkad	-13.33	76.81
Malappuram	7.69	349.74
Kozhikode	-0.25	75.58
Wayanad	7.31	1.95
Kannur	0.00	29.38
Kasaragod	18.01	99.81
Kerala	-1.26	83.75
India	8.03	12.16

Source:Calculated by the scholar

The speed or tempo of urbanisation shows a direct relationship to the percentage change of growth of urban areas. The district-wise speed of urbanisation indicates that Malappuram, Kollam, Thrissur, and Kasaragod have relatively more speed to urban growth. similarly, the change of urban population growth can be seen highly in districts like Malappuram, Kollam, Thrissur, and Kasaragod. Thus, we can say that the rapid urbanisation of Kerala is mainly due to the reclassification of certain rural areas having the urban face to the urban area. Therefore, we can conclude that the natural increase of population in Kerala has less effect compared to the factors like migration and jurisdictional or areal changes to change in the growth of the urban population.

3.7 Urban Intensity Index(UII)

Measurement of urbanisation generally based on three approaches. For instance, the demographical approach, geographical approach, and economical approach. However, a universally accepted view of measuring urbanisation is the 'degree of urbanisation' which based on the demographical approach. Here, the degree of urbanisation can be calculated as 'the ratio of urban population to the total population of a country during a specific period'.Though, the aspects of geographical factors and economic factors also have some significance for shaping urbanisation in an economy.

The definition of the urban area clearly emphasis the basic qualities of an urban area. The smallest unit of an urban area is a census town which is treated as a village, however certain criteria for the qualification of the urban area is achieved by them. Therefore, census treated as them census towns.

For measuring the more inclusive and relative level of urbanisation the researcher tries to develop an Urban Intensity Index(UII)which measures the average attainment of key magnitudes of urbanisation; a)demographic magnitude,b)the economic magnitude and c)geographic magnitude. The UII is calculated as the geometric mean of normalised indices to each magnitude of urbanisation used as an equal weight.

The demographic magnitude is evaluated by the ratio of the urban population to the total population of a specific region, the economic magnitude is measured by the accepted level of the male employment in non-agricultural activities and the geographical magnitude is measured by the ratio of the urban area to the total area of the specific region. The scores for the three UII magnitude indices are then combined into a composite index using the geometric mean of these indices.

Where UII denoted as Urban Intensity Index, DI indicated as the demographic index, EI indicated as an economic index and GI indicated as the geographical index. For measuring magnitude indices, we are depending on the census data source. The demographic index used the data of the urban population and the total population of a specific state from 1991 to 2011. The economic index used the working population data published by the census. Here, the main male workers of urban area engaged in

non-agricultural activities are taken for calculating the economic index from 1991 to 2011. Similarly, the geographical index uses the data of the urban area in square kilometre and the corresponding total area of the respected region or state provided in the census data during the same period as 1991-2011.

Steps to calculate Urban Intensity Index

Here,we used two steps for constructing Urban Intensity Index

Step I:Generating the magnitude indices

At first,we calculate the magnitude index.For this purpose,we use the maximum-minimum method for normalising the indices.

$$Magnitude\ Index\ =\ \frac{actual\ value - minimum\ value}{maximum\ value - minimum\ value}$$

The maximum and minimum values are selected on the basis of census data of the Government of India. Here we used the same maximum and minimum value for all years of study and analysing the indices for the states and districts in Kerala which intended to analyse the relative changes that happened in the states and districts over these years. For measuring the demographical index, we used the ratio of the urban population to the total population. Here, we used the minimum value as'0'and the maximum value is'0.75'.In the case economic index, we used the percentage of the active male employed in non-agricultural activities. For this, the minimum value'20'and the maximum value'95'as selected. For calculating the geographical index, we used the ratio of the urban area to the total area and selected the minimum value as'0'and maximum value'0.70'.Minimum and maximum values strategy are the traditional method to convert the indicators stated in different units into indices lies between 0 and 1.This is the normalising procedure of different indices.

Step 2.Combining the magnitude indices to construct Urban Intensity Index

The UII is constructed as the geometric mean of the three magnitudes of urbanisation, such as demographical, economical, and geographical indices. Here, we use equal weight for all indices.

$$UII\ =\ (I_{Demographic}.I_{Economic}.I_{Geographic})^{1/3}\ or\ UII\ =\ \sqrt[3]{DI.EI.GI}$$

Here, Urban Intensity Index(UII)used as a measure that calculates the urbanisation of an economy which provides more detailed information of urbanisation instead of mere calculation of the share of the urban population to the total population. Here we analyse the position of the intensity of urbanisation of Indian states on the basis of the Urban Intensity Index.

We used a simple ranking technique based on composite indices which would be sufficient for the classification purpose. For relative comparison of different states/districts with respect to the intensity of urbanisation, it shows quite suitable to assume that the UII is greater than or equal to(Mean + Standard Deviation)are highly urbanised, if the UII lies less than or equal to(Mean - Standard Deviation)are low urbanised and those who have UII lies between(Mean + Standard Deviation) and (Mean- Standard Deviation) is considered as a medium level of urbanisation.

3.7.1 Urban Intensity Index of Indian States

Here, we examine the characteristics of urbanisation on account of demographic,economic and geographic magnitude as explained in the above section. The demographic index of Indian states shows increasing from 1991 to 2011. The economic index as the percentage of the urban male working population engaged in non-agricultural activities. almost all states had a similar economic index in all the years. However, in the case of a geographical index, as measured the percentage of the urban area to the total geographical area of a specific region where comparatively high values can be seen in the state of Goa and Kerala.The detailed illustration of these indices and the composite analysis illustrated in the Appendix.

The UII index in the years 1991,2001 and 2011 are discussed in the table which shows the overall intensity of urbanisation in the states of India. As discussed in the earlier sections, the percentage of the urban population to the total population was highest in the state Mizoram (46 per cent) in India. However, in the position based on Urban Intensity Index, the status of Mizoram was 8th during the same period. The state Goa attained the 1st position(0.425)and the state Kerala reached 2nd place as per UII in 1991. Almost all states have a similar level of economic index indicates that the majority of male active workers engaged in non-agricultural activities. The state Kerala has some unique features of urbanisation which had comparatively high

geographical index indicates that more proportion of urban area compared to the other states and all India average which led to Kerala for attaining a second position as per UII after Goa, followed by Tamil Nadu, Maharashtra, West Bengal etc. The state of Arunachal Pradesh had the lowest UII(0.031)and all India UII was 0.210 in 1991.

In the census 2001, the percentage of urban population or degree of urbanisation was highest in Mizoram, Goa, Tamil Nadu, Maharashtra etc. If we take UII in the same period, Goa(0.463)attained 1st place, UII of Kerala(0.343)improved slightly and hold second place with a comparatively high geographical index among the other states of India. Still, Arunachal Pradesh was the lowest UII(0.036) and a little improved its position from 1991. The UII of all India(0.257)and all other states improved slightly as compared with the UII of 1991.

In the last census, that is in 2011, there is a tremendous increase in the level of urban population among the states. The degree of urbanisation shows an increasing trend towards the growth of urbanisation. In the 2011 census, UII of Goa increased to(0.635)from(0.463)in 2001 and maintained its 1st position in the year 2011. The UII of Kerala(0.555)improves its position and again reached 2nd position in the census 2011. We can see a common feature to almost all the states that, most of them consistently improved their position to the path of their urban growth. The analysis and concentrated on the various states of India for better understanding and comparison.The   components of UII in 1991,2001 and 2011 are illustrated in the *Annexure(A 3.1, A 3.2 and A 3.3)*

It is interesting to note that the intensity of urbanisation of the state Kerala is lying more than the other major states like Tamil Nadu, Maharashtra, Gujarat etc. Hence, it is interesting to analyse a district level of study in Kerala. In the next section, we tried to construct UII among the fourteen districts of Kerala.

Table 3.21:Urban Intensity Index of Indian states(1991-2011)*

1991		2001		2011	
STATE	UII	STATE	UII	STATE	UII
Goa	0.425	Goa	0.463	Goa	0.635
Kerala	0.320	Kerala	0.343	Kerala	0.555
Tamil Nadu	0.306	Tamil Nadu	0.329	Tamil Nadu	0.444
Maharashtra	0.260	Maharashtra	0.269	Punjab	0.323
West Bengal	0.259	West Bengal	0.263	West Bengal	0.319
Gujarat	0.250	Mizoram	0.262	Gujarat	0.311
Punjab	0.246	Punjab	0.262	Haryana	0.301
Mizoram	0.245	Gujarat	0.243	Maharashtra	0.290
Haryana	0.224	Chhattisgarh	0.241	Karnataka	0.279
Karnataka	0.223	Haryana	0.239	Mizoram	0.272
Andhra Pradesh	0.196	Karnataka	0.235	Tripura	0.261
Madhya Pradesh	0.189	Jharkhand	0.218	Andhra Pradesh	0.244
Rajasthan	0.177	Andhra Pradesh	0.200	Jharkhand	0.231
Uttar Pradesh	0.176	Madhya Pradesh	0.200	Chhattisgarh	0.226
Nagaland	0.168	Uttarakhand	0.194	Madhya Pradesh	0.225
Bihar	0.161	Rajasthan	0.180	Uttar Pradesh	0.221
Tripura	0.154	Uttar Pradesh	0.178	Uttarakhand	0.210
Sikkim	0.153	Nagaland	0.174	Rajasthan	0.204
Odisha	0.144	Tripura	0.166	Nagaland	0.195
Meghalaya	0.134	Sikkim	0.166	Odisha	0.184
Assam	0.127	Odisha	0.157	Meghalaya	0.168
Manipur	0.121	Bihar	0.150	Assam	0.161
Himachal Pradesh	0.092	Assam	0.137	Bihar	0.157
Arunachal Pradesh	0.031	Meghalaya	0.135	Manipur	0.148
		Manipur	0.133	JammuandKashmir	0.140
		JammuandKashmir	0.130	Sikkim	0.138
		Himachal Pradesh	0.097	Himachal Pradesh	0.097
		Arunachal Pradesh	0.036	Arunachal Pradesh	0.060
All India average	0.210	All India average	0.257	All India average	0.297

Source:Census of India(1991-2011).Note:UII constructed by the scholar.*excluded union territories

Table 3.22:Level of Urban Intensity in Indian States

<table>
<tr><th colspan="4">Level of Urban Intensity in Indian States</th></tr>
<tr><th>1991</th><th>High</th><th>Medium</th><th>Low</th></tr>
<tr>
<td>UII</td>
<td>Goa
Kerala
Tamil Nadu
Maharashtra</td>
<td>West Bengal,Gujarat,Punjab,Mizoram,
Haryana,Karnataka,Andhra Pradesh
Madhya Pradesh,Rajasthan,Uttar Pradesh
Nagaland,Bihar,Tripura,Sikkim,Orissa
Meghalaya,Assam,Manipur</td>
<td>Arunachal
Pradesh
Himachal
Pradesh</td>
</tr>
<tr>
<td>2001
UII</td>
<td>Goa
Kerala
Tamil Nadu
Maharashtra</td>
<td>West
Bengal,Punjab,Mizoram,Chhattisgarh
Haryana,Karnataka,Gujarat,Jharkhand
Madhya Pradesh,Andhra Pradesh
Uttarakhand,Rajasthan,Uttar Pradesh
Nagaland,Tripura,Sikkim,Odisha,Bihar
Assam,Meghalaya,Manipur</td>
<td>Arunachal
Pradesh
Himachal
Pradesh
JammuandKash
mir</td>
</tr>
<tr>
<td>2011
UII</td>
<td>Goa,Kerala
Tamil Nadu
Punjab
West Bengal
Gujarat,Haryana
Maharashtra</td>
<td>Karnataka,Mizoram,Tripura,Andhra
Pradesh   Jharkhand,Chandigarh,Madhya
Pradesh
Uttar Pradesh,Uttarakhand,Rajasthan
Nagaland,Odisha,Meghalaya,Assam
Bihar,Manipur</td>
<td>Arunachal
Pradesh
Himachal
Pradesh
Sikkim
JammuandKash
mir</td>
</tr>
</table>

Source:Constructed by the scholar

   If we compare the relative intensity of urbanisation,the majority of Indian states
are in the medium level of intensity of urbanisation in all years.In 2001 and 2011 all
India average of UII is also relatively in the higher compared to its some of
districts.The state Goa attained first place in all years followed by the small state
Kerala due to the geographical index value is greater in these states compared to the
other major states.We can see,ten states had high UII in 1991,seven states in 2001
and seven states in 2011 than the national average of urban intensity index.

3.7.2 Urban Intensity Index of districts of Kerala

We can see from the above section that geographically smaller state Kerala had attained the second position in account of UII compared to the other major states of India. It is interesting to examine the demographic, economic and geographical magnitude of urbanisation in each district of Kerala is relevant. The various districts of Kerala witnessed unique features of urbanisation.Sreekumar(1993)observed that political economy factors and ecological factors had a significant impact on the spatial pattern and urban process in Kerala. For examining the intensity of urbanisation in the various districts of Kerala, it should be analysing the magnitudes of urbanisation. Such as in the demographic, economic and geographic magnitude of urbanisation of each district of Kerala is examined and construct a composite index of urbanisation(UII).

The state of Kerala has some unique urbanisation features with a substantial increase in urbanisation from 25 per cent in the 2001 census to 47 per cent in the 2011 census. It is discussed that the significant role of this increase was on account of the rise in the number of census towns that are governed by rural local bodies. The urban characteristics of rural areas help them to include census towns. Therefore, we try for a detailed examination of urbanisation. Here we use, the Urban Intensity Index which helps to know the intensity of urbanisation in the state in the period 1991 to 2011.

A)Demographic Index

The demographic index calculated as the urban population to the total population classified in the census 1991,2001 and 2011 in each of the districts of Kerala. It indicates the number of people who lives in urban areas in each district. The relative comparison can be possible by examining the demographic index of urbanisation. Table 3.23 illustrates the demographic index of each district by using census data.

Table 3.23 Inter-District Demographic Index of Kerala

Districts	Demographic Index		
	1991	**2001**	**2011**
Thiruvanthpuram	0.452	0.450	0.717
Kollam	0.247	0.240	0.601
Pathanamthitta	0.174	0.134	0.147
Alappuzha	0.234	0.205	0.382
Kottayam	0.234	0.205	0.382
Idukki	0.051	0.068	0.063
Ernakulam	0.650	0.634	0.908
Thrissur	0.351	0.376	0.896
Palakkad	0.210	0.182	0.321
Malappuram	0.122	0.131	0.589
Kozhikode	0.511	0.510	0.895
Wayanad	0.047	0.051	0.052
Kannur	0.670	0.670	0.867
Kasaragod	0.219	0.259	0.517
Kerala	0.347	0.347	0.640

Source:Constructed by the scholar

In 1991,the demographic index was highest in Kannur district(0.67)followed by Ernakulam district(0.65).The high land districts like Idukki, Wayanad, Pathanamthitta districts had a comparatively low demographic index in all the years. The southern districts like Malappuram witnessed a significant growth of demographic index in 2001-2011. The central districts like Ernakulam and Thrissur attained first and second position according to the demographic index of 2011, which indicates that compared to other districts, the urban population was highest in these districts

B) Economic Index

As stated in the previous section, the economic index of urbanisation calculated as the proportion of male workers involved in non-agricultural activities in the urban areas of each district. In Kerala, there is a difficulty to differentiate between urban and rural area due to highly densely villages. Here we used census data for identifying urban areas and male employment in non-agricultural activities. The

relative participation of non-agricultural employment by males of each district illustrated in table 3.24

Table 3.24 Inter-District Economic Index of Kerala

Districts	Economic Index		
	1991	2001	2011
Thiruvanthpuram	0.709	0.972	0.967
Kollam	0.686	0.985	0.944
Pathanamthitta	0.485	0.826	0.887
Alappuzha	0.760	0.944	0.958
Kottayam	0.739	0.831	0.951
Idukki	0.550	0.952	0.899
Ernakulam	0.888	0.987	0.998
Thrissur	0.855	0.955	0.955
Palakkad	0.780	0.891	0.931
Malappuram	0.590	0.909	0.913
Kozhikode	0.833	0.991	0.982
Wayanad	0.539	0.932	0.903
Kannur	0.841	0.954	0.975
Kasaragod	0.670	0.906	0.949
Kerala	0.788	0.965	0.962

Source:Constructed by the scholar

The economic index was highest in Ernakulam district in 1991 as compared to all other districts. The economic index value increased in all districts during the period 1991 to 2011 which means that in all the districts the male workers are mostly engaged in non-agricultural activities.

C) Geographic Index

The geographic index of urbanisation can be calculated by using the proportion of urban area(in Sq. Km)to the total geographical area of a particular district. The area-based extension of urbanisation was seeing much slower during 1991-2001 compared to 2001-2011.These areal extensions in the urban areas mainly due to the increasing number of census towns during the census period. The relative index of the urban area of each district illustrated in table 3.25

Table 3.25 Inter-District Geographic Index of Kerala

Districts	Geographic Index		
	1991	2001	2011
Thiruvananthapuram	0.191	0.201	0.428
Kollam	0.044	0.044	0.250
Pathanamthitta	0.057	0.041	0.046
Alappuzha	0.384	0.347	0.732
Kottayam	0.064	0.061	0.193
Idukki	0.010	0.010	0.010
Ernakulam	0.423	0.413	0.720
Thrissur	0.160	0.183	0.616
Palakkad	0.075	0.048	0.134
Malappuram	0.073	0.079	0.381
Kozhikode	0.306	0.361	0.677
Wayanad	0.028	0.028	0.028
Kannur	0.392	0.392	0.618
Kasaragod	0.081	0.097	0.223
Kerala	0.121	0.122	0.279

Source:Constructed by the scholar

As different from the demographic index and economic index, we can see the significant variation of geographical index among the districts of Kerala. From 1991onwards Ernakulam district have a high value of the geographic index. There is no change that can be seen in Idukki and Wayanad districts over these years. In 2011, the geographic index was highest in the Alappuzha district. The geographical index had increased in 2011 in almost districts due to a large number of adding census towns in the 2011 census. This indicates that the urban characteristics or style of living can be seen in rural areas also. In Kerala, the density of population and employment in the non-agriculture sector also very high in rural areas which will further lead to increasing census towns or extension of urban areas in the future except high land regions like Idukki, Wayanad, Pathanamthitta etc.

The composition of the three indices such as demographic, economic and geographic indices give us the urban intensity index constructed by following the methodology stated in section 3.5.

Table 3.26:District Wise Urban Intensity Index of Kerala(1991-2011)

Districts	Urban Intensity Index(UII)		
	1991	2001	2011
Thiruvanthpuram	0.394	0.445	0.667
Kollam	0.196	0.219	0.521
Pathanamthitta	0.169	0.165	0.182
Alappuzha	0.409	0.406	0.645
Kottayam	0.223	0.219	0.412
Idukki	0.066	0.087	0.083
Ernakulam	0.625	0.641	0.867
Thrissur	0.363	0.404	0.808
Palakkad	0.23	0.199	0.342
Malappuram	0.174	0.211	0.589
Kozhikode	0.507	0.569	0.841
Wayanad	0.089	0.109	0.109
Kannur	0.605	0.631	0.805
Kasaragod	0.228	0.283	0.479
Kerala	0.32	0.343	0.555
India	0.210	0.257	0.297

Source:Census of India(1991-2011).Note UII calculated by the scholar.

According to UII, in 1991, the intensity of urbanisation was highest in the Ernakulam district(0.625), followed by Kannur and Kozhikode districts. In 1991, the value of UII mainly determined by the demographic index. In the case of an economic index, almost districts have an equal range except for Pathanamthitta, Idukki, Malappuram and Wayanad districts which shows a comparatively low level of non-agricultural active male workers participation as compared to the other districts of the state. The low value of the demographic and geographical index of the Wayanad and Idukki districts leads to a low value of UII. Therefore, the intensity of urbanisation is found to be exceptionally low in these hilly districts.

From 1991 to 2001, the UII tends to increase in all districts except the districts like Pathanamthitta, Alappuzha, Kottayam, and Palakkad. These districts experienced a decrease in the demographic index, though the economic index improved in these districts. In the 2001 census, certain areas as declared urban in the previous census degraded as rural area. Therefore, the geographical index also slightly decreased in the 2001 census in certain districts. The declining natural growth rate of urban

population and out-migration are also some of the reasons for declining the value of the demographic index of these districts. The value of UII shows in 2001, the Ernakulam(0.641)and Kannur(0.631)districts have a high intensity of urbanisation. The lowest urbanised districts such as Idukki and Wayanad districts slightly improved their UII values due to increasing their economic index.

Table 3.27:Level of Urban Intensity in Districts of Kerala(UII)

	Level of Urban Intensity in districts of Kerala		
	High	**Medium**	**Low**
1991 UII	Ernakulam Kannur Kozhikode	Alappuzha,Thiruvanthpuram Thrissur,Palakkad,Kasaragod Kottayam,Kollam,Malappuram Pathanamthitta	Pathanamthitta Wayanad Idukki
2001 UII	Ernakulam Kannur Kozhikode	Thiruvanthpuram,Alappuzha Thrissur,Kasaragod,Kottayam Kollam,Malappuram Palakkad,Pathanamthitta	Wayanad Idukki
2011 UII	Ernakulam Kozhikode Thrissur Kannur	Thiruvanthpuram,Alappuzha Malappuram,Kollam Kasaragod,Kottayam Palakkad	Pathanamthitta Wayanad Idukki

Source:Constructed by the scholar

It is remarkable to note that some districts' level of urbanisation depending on the growth of census towns which lead to increasing the geographical index significantly causing the high value of UII in 2011. In the 2001 census, the state had only one district, Kannur which reported more than 50 per cent of the urban population. However, the 2011 census reported six districts such as Ernakulam, Thrissur, Kozhikode, Kannur, Alappuzha and Thiruvananthapuram more than 50 per cent of the urban population. The three districts like Malappuram, Kollam and Thiruvananthapuram which contributed around 20 per cent of census towns in the 2011 census, whereas they had no census towns reported in the 2001 census. As in

the previous years, the Idukki and Wayanad districts had no census towns reported in the 2011 census. Therefore, their geographical index value does not change in 2011.

According to UII in 2011, the intensity of urbanisation is remarkably high in the districts like Ernakulam, Kozhikode, Thrissur, and Kannur. Thiruvananthapuram, Alappuzha. Malappuram, Kollam, Kasaragod, Kottayam, and Palakkad districts had a medium level of urbanisation. Similarly, Pathanamthitta, Idukki, and Wayanad had a low intensity of urbanisation on account of UII in 2011.

The Urban Intensity Index for analysing urbanisation, we get a clearer picture or intensity of urbanisation experienced in each district. Generally, the degree of urbanisation or population content of an urban area only considers the demographic status. Moreover, the UII considers not only demographic features but also economical and geographical features. We can justify more clearly the intensity of urbanisation. It is interesting to note that the four districts, namely, Ernakulam, Kozhikode, Thrissur, and Kannur, achieved high status in urbanisation comparing to the other districts and the state average. The pioneering work of Sreekumar(1993)on the urban process in Kerala, noted that the settlement pattern of Kerala has certain unique features with a high density of population in rural areas also lead to difficult to differentiate rural and urban areas. Kerala's this unique feature that is rural-urban continuum form provides more opportunities to expand small towns as a way for enhancing economic performance and a better quality of life.

3.8 Conclusion

From the above discussion, we may conclude with certain basic facts of urbanisation trends in India and Kerala. The share of the urban population in India is shown to a gradual increase over the period. Among the major states of the country, the state Kerala dominates a substantial place in terms of urbanisation. The urban growth of India mainly focused on industrial clusters, established and administrative centres involving tourist centres and state headquarters. However, the state Kerala showed its pattern of urban growth is exclusively different features as displayed in other states Kerala's urban growth specifically followed certain settlement pattern and unique way of living standards. The rural-urban divide in the state Kerala is so difficult to define where towns end and village starts. Most of the towns in the state

developed either as trading or business, marketing, and administrative centres. The number of towns in Kerala has displayed a decreasing trend from 1991 and which again declined in the census year 2001. However, in the 2011 census, the state of Kerala had a rapid increase in the number of census towns, in which 361 new towns were added to the existing urban areas. The pattern of urbanisation is mostly due to the urban jurisdiction backed by the development characteristics of the economy.

The results of the present chapter exhibited a positive trend in urbanisation in Kerala. We can get a clearer picture by analysing the district-wise urbanisation that occurred in the state. From the above discussion, in terms of the Urban Intensity Index, that the districts like Ernakulam, Kozhikode, Thrissur and Kannur districts have a high level of urbanisation; the districts like Thiruvananthapuram, Malappuram, Alappuzha and Kollam are also in the growth path of urbanisation and the remaining districts like Kasaragod, Kottayam, Palakkad, Pathanamthitta, Wayanad and Idukki had a comparatively low level of urbanisation.

The high densely population across the state of Kerala except the hilly districts had a significant contribution to the state. According to the UII, Kerala is the second most urbanised state among the major states of India. The state of Kerala had some unique characteristics of urbanisation with the inclusion of a large number of rural areas in the urban frame. This transformation is mainly due to the grouping of several rural areas as census towns due to structural change in employment in non-agricultural sector activities. On this background of the path of urbanisation in Kerala, the study tries to examine its implications on the economic performance and social performance of the Kerala economy in the following chapters.

Chapter 4

Urbanisation and its Implications on the Economic Performance of Kerala Economy

Chapter Four

Urbanisation and its Implications on the Economic Performance of Kerala Economy

4.1 Introduction

The development of an economy throughout the process of an economic change is an inevitable fact, in which the people primarily working in agricultural activities goes into a shift towards more productive non-agricultural activities. This process leads to a better modern urban culture and way of living in the surrounding areas which slowly turned into an urban area. In the previous chapter, we made the Urban Intensity Index, which examines the level of urbanisation with three significant magnitudes, such as demographic, economic, and geographical magnitudes. The decomposition of these magnitudes explores several differences in the level of urbanisation among the various states and all India level. The state of Kerala had some unique features of urbanisation and within the state also we can see several differences among the districts. It is relevant to study the level of urbanisation and the economic and social performance of the Kerala economy.

The present chapter tries to examine the economic performance of the Kerala economy on account of the rapid urbanisation phase. For a better understanding economic performance of the urban areas, it is good to know the contribution of urban income to the total economy. Next, we try to examine the implications of the intensity of urbanisation on certain economic indicators like Worker Population Ratio(WPR), unemployment rate, poverty level, consumption pattern and availability of banking services. The universally accepted indicator of measuring the standard of living of an area is their per capita domestic product of a region or a nation. There is a fundamental association between income distribution and economic growth which makes changes in the contribution of urban and rural income to the economy(Rao

1965)[1].Under these circumstances, it is very suitable for estimates of urban and rural domestic products of a region or economy.

In India, the socio-cultural varieties of various regions and states needed adaptation and integration. The comparative prosperity and standard of living of people in diverse regions are regularly measured in terms of the per-capita income of that region. Though, there is no standardized methodology used for estimating urban or rural level GDP. Generally, the people in urban India contribute a distant higher share in the country's GDP, which was more than the percentage of their population. The Central Statistics Office (CSO) of India issues special statements of the disaggregated GDP data of rural and urban areas(1970-71,1980-81,1993-94,1999-00,2004-05 and 2009-10).However, the state-level disaggregated state domestic product data directly not available from the CSO statements.

There are a few researchers like Chakravarty (1960), Rao (1965)Dholakia (1978) and Dholakia and Pandya(2011) who recognised the significance and scope of the estimation of urban and rural income separately. The National Statistical Commission(2001)as well suggested the estimation of urban and rural income and recommended to CSO for developing a standardized methodology for the state-level estimation of urban income and rural income. Consequently, the Central Statistical Office (2008)has developed an elaborate guideline for this purpose. Still, there is scarcely any estimation on urban income and rural income processed at the state level except the works of Dholakia and Pandya in 2011 for the state of Gujarat[2]

As we look at in the previous chapter, the state of Kerala achieved some uniqueness in urbanisation among the other states of India. Geographically, it is a smaller state with a high density of population even in the rural area and low

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[1] Rao VKRV (1965) Economic Growth and Rural-Urban Income Distribution-1950-51 to 1960-61,Economic and Political Weekly. Vol. 17, Issue No. 8.
https://www.epw.in/journal/1965/8/special-articles/economic-growth-and-rural-urban-income-distribution-1950-51-1960-61

[2] Dholakia, R.H and Pandya. M (2011). Estimating Urban and Rural Incomes in Gujarat, 1993-94 to 2004-05. W.P. No. 2011-09-02.
https://www.researchgate.net/publication/254423854_Estimating_Urban_and_Rural_Incomes_in_Gujarat_1993-94_to_2004-05

economic performance compared to the other major states of India, though it achieved better performance in socio-cultural and health indicators. In the last decade 2001-2011, Kerala witnessed rapid urbanisation with 47.72 per cent of the population lives in urban areas. It is interesting to know the performance and contribution of the urban area to the state economy on account of the state domestic product.

Therefore, in the present chapter, we make use of readily available data which regarded as in the form of comparable and logically possible format. The method of estimation of urban and rural income is borrowed from the work of Dholakia and Pandya(2014), which are applicable and suitable for estimating state level and district level of urban and rural income[3].The detailed framework of the method and source of data are described in the *Annexure(A 4.1).*

Here we try to estimate the share of urban income in the fourteen districts of the state Kerala and all India. The last section examines the intensity of urbanisation and its implications on the major economic indicators and constructs an economic index that helps to examine the inter-district performance of urban areas of each district for economic development.

4.2 Estimation of Urban Net Domestic Products of Kerala and India

We can estimate urban and rural net domestic product by using the methodology explained in the first section of this chapter. Where NDP(Net Domestic Product), NSDP (Net State Domestic Product) and DDP (District Domestic Product) are getting from the CSO data and the state income data from the Economics and Statistics Department, Government of Kerala.

Let us estimate the urban and rural income of each district by the assumption of the same level of productivity in both urban and rural areas in each sector(i.e., primary, secondary, and tertiary sectors). The overall labour productivity multiplied by the number of workers of each sector in an urban area, we get the income or output produced in the urban area. Here we used the net domestic product at current

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[3] Dholakia, R. H., Pandya, M., and Pateriya, P. M. (2014). Urban–Rural Income Differential in Major States: Contribution of Structural Factors. http://vslir.iima.ac.in:8080/jspui/bitstream/11718/13306/1/WP002379.pdf

prices in each district for the calculation of overall labour productivity. Therefore, the income or output of an urban area considered as Urban Net Domestic Product(UNDP). Similarly, if we multiplied the number of workers in a rural area engaged in a sector by its overall labour productivity, we get rural income or output termed as Rural Net Domestic Product(RNDP). The estimation of urban and rural income in the figures(Rs in lakhs)is illustrated in *Annexure (A 4.10,A 4.11 and A 4.12)*

Table 4.1:Contribution of Urban and Rural Income to Total Income of Districts of Kerala and all India in 1990-91,2000-01 and 2010-11(in per cent)

Districts/State	1990-91		2000-01		2010-11	
	UNDP	RNDP	UNDP	RNDP	UNDP	RNDP
Thiruvananthapuram	40.05	59.95	38.66	61.34	57.18	42.82
Kollam	19.44	80.56	19.16	80.84	47.64	52.36
Pathanamthitta	14.65	85.35	10.81	89.19	11.54	88.46
Alappuzha	32.83	67.17	39.01	61.02	56.78	43.22
Kottayam	19.24	80.76	17.35	82.65	29.57	70.43
Idukki	6.41	93.59	5.21	94.79	3.91	96.1
Ernakulam	50.39	49.61	47.93	52.07	66.53	33.47
Thrissur	28.59	71.41	30.31	69.69	68.06	31.94
Palakkad	19.6	80.4	16.94	83.06	25.18	74.82
Malappuram	10.03	89.97	10.74	89.26	44.15	55.85
Kozhikode	42.7	57.3	40.31	59.69	69.25	30.75
Wayanad	4.32	95.68	5.21	94.79	4.11	95.9
Kannur	51.52	48.48	50.02	49.98	67.79	32.21
Kasaragod	17.57	82.43	20.38	79.62	48.52	51.48
Kerala	29.83	70.17	28.57	71.43	49.09	50.91
India	43.05	56.95	36.45	63.55	46.70	53.30

Source:Estimated by the scholar

Dholakia and Dholakia(1978)estimated urban-rural income differentials of India,in which they estimated urban income of Kerala 21.6 per cent with 16 per cent of urban population and rural income was 78.4 per cent in 1970-71 period[4].They showed the urban income of all India average was 37.8 per cent with 19.9 per cent of the urban population in 1970-71.

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[4] Dholakia B H and Dholakia. R H(1977). "Urban-Rural Income Differentials in India: An Inter-Regional Analysis," IIMA Working Papers WP1977-10-01_00256, Indian Institute of Management Ahmedabad, Research and Publication Department.

Here, we estimate that, in 1990-91, in India, around 43 per cent of income coming from urban areas and whereas in Kerala it is accounted for a mere 30 per cent of income as urban share. In 2000-01, the share of urban income in India was 36 per cent and in Kerala, it was around 29 per cent. In the year 2011-12, the urban income of Kerala was around 49 per cent, and 47 per cent in India. The 2011 census declared that Kerala has 47.72 per cent of the urban population and this population produced around 49 per cent of income to the state income. It can be noted that the share of urban income is slightly above the share of the urban population. If we compare the performance of urban and rural income of Kerala and all India average, the urban income of national average lies above the urban Income of Kerala except the period 2011-12.

In 1990-91, the urban income of Kannur (52 per cent), Ernakulam (50 per cent), Kozhikode (43 per cent) and Thiruvananthapuram(40 per cent) districts were more than the state urban income. The least urbanised districts like Wayanad(4 per cent)and Idukki(6 per cent)had low urban income and the highest share of rural income among the other districts of Kerala economy. In 2000-01, the urbanisation level of Kerala was not significantly changed. In some districts witnessed a decreasing level of urbanisation during the decade 1991-2001. Out of the fourteen districts, nine districts' share of urban income declined compared to the period 1990-1991 period. Five districts like Alappuzha, Thrissur, Malappuram, Wayanad and Kasaragod have slightly improved their urban income in the 2000-01 period.

The decade 2000-2011, witnessed rapid urbanisation in almost districts except, Idukki, Wayanad, Pathanamthitta etc. The districts like Kozhikode (69 per cent), Thrissur (68 per cent), Kannur (68 per cent), Ernakulam (67 per cent), Thiruvananthapuram (57 per cent) and Alappuzha (57 per cent) were shared more than 50 per cent of urban income to the districts total income. At that time, the state average was 49 per cent urban income. The least urbanised districts had urban income only around 4 per cent and their rural area produced over 95 per cent of the total income of the district.

Figure 4.1:Urban and Rural Income to Total Income of Districts of Kerala(%)
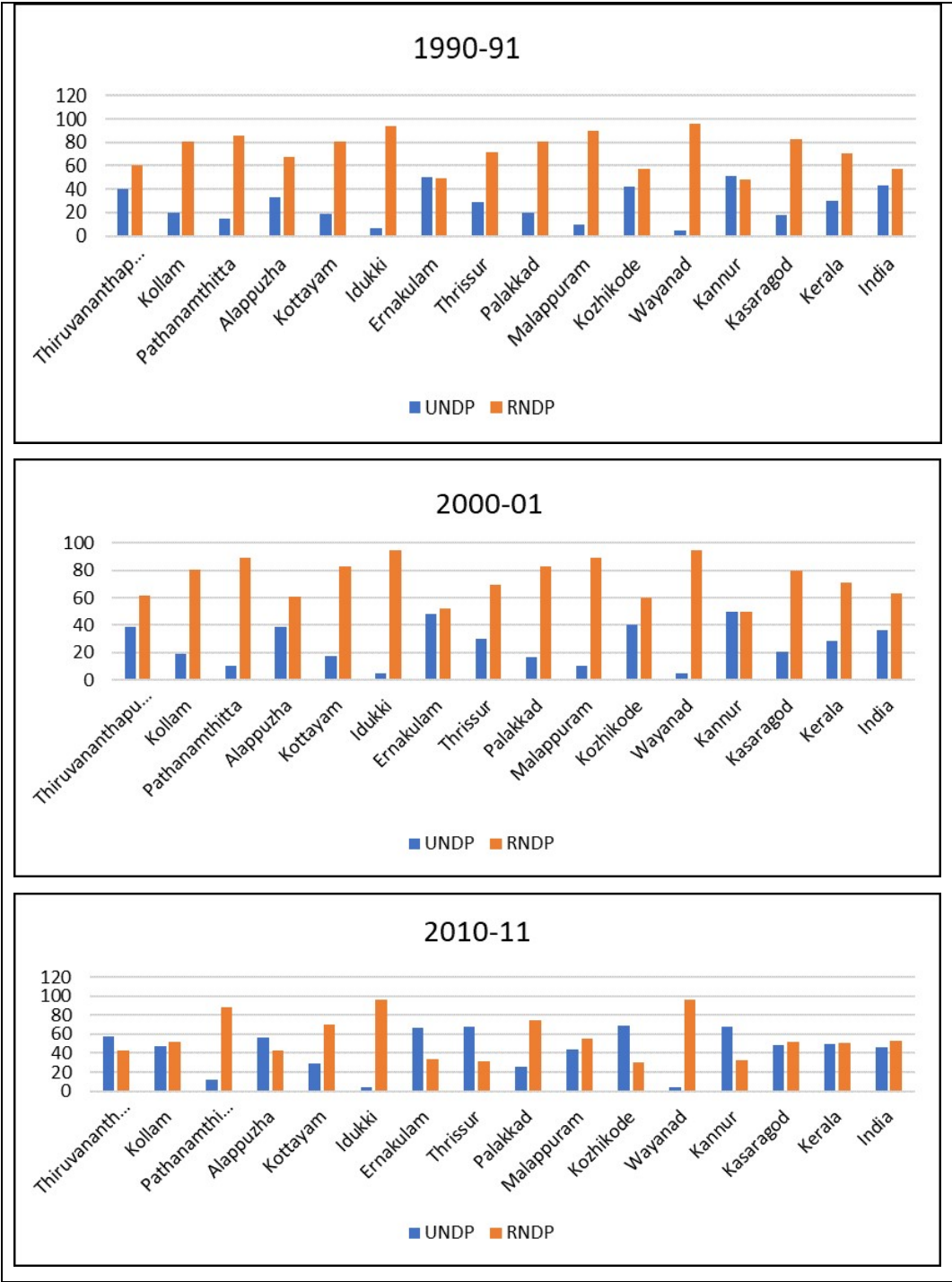
Source:Estimated by the scholar

The estimated share of urban and rural income to the district domestic product shows a direct relationship between level of urbanisation and contribution of urban areas.Rapid urbanised districts had high contribution of urban income and vice versa.

4.2.1 Sectoral Distribution of Urban income

The estimates of urban and rural income in the districts of Kerala and India are discussed in the previous section.Here,we examine the sectoral share of urban income of the districts of Kerala and Indian economy during the period 1990-91,2000-01 and 2010-11.

It is to be interesting to note that,the share of primary sector to the urban income of all India average was 3.24 per cent in 1990-91,it was again decreased to 1.74 per cent in 2010-11.The secondary or industrial sector contribution to urban income declined from 28 per cent to 16.16 per cent in 2010-11,indicates that the industrial performance of urban India tends to be declining over this period.In urban India,the service sector domination can be seen in the sectoral distribution of urban income and it tend to increase from 69 per cent in 1990-91 to 82 per cent in 2010-11.

In the case of urban Kerala,the share of primary sector was 12 per cent in 1990-91,it was decreased to 6 per cent in 2010-2011,the share of secondary sector declined from 33 per cent to 19 per cent and the share of tertiary sector increased from 55 per cent to 75 per cent during the same period.We can see more structural change in the state than the national average on account of urban income.

It is to be noted that the share of urban income increased both in Kerala and the national level. The sectoral distribution of urban income significantly dominates a service-oriented economy in both Kerala and all India average. Similarly, another feature that, there is a significant fall in the share of income from the industrial sector. For a higher rate of economic growth, it is necessary to progress modern sectors of the economy in the urban areas.

Table 4.2:Sectoral Share of Urban Income in the districts of Kerala and all India in 1990-91,2000-01 and 2010-11(in per cent)

District/State	1990-91			2000-01			2010-11		
	Primary sector	Secondary sector	Tertiary sector	Primary sector	Secondary sector	Tertiary sector	Primary sector	Secondary sector	Tertiary sector
Thiruvananthapuram	10.15	23.11	66.74	7.84	15.79	76.37	4.78	16.64	78.58
Kollam	18.32	27.26	54.42	14.20	21.29	64.51	6.78	11.70	81.52
Pathanamthitta	22.73	25.30	51.97	12.88	14.07	73.05	6.79	18.33	74.88
Alappuzha	15.41	32.52	52.07	6.23	40.10	53.67	6.34	18.02	75.64
Kottayam	16.75	16.78	66.47	7.00	16.80	76.20	8.00	14.65	77.35
Idukki	14.26	49.96	35.78	14.19	16.75	69.06	17.30	11.64	71.06
Ernakulam	8.95	43.69	47.36	6.43	28.92	64.65	4.92	32.80	62.28
Thrissur	10.78	31.39	57.83	7.53	25.88	66.59	6.13	21.43	72.45
Palakkad	11.84	25.95	62.21	7.59	19.44	72.97	2.67	23.92	73.41
Malappuram	22.54	14.60	62.86	15.47	15.81	68.72	13.54	13.50	72.97
Kozhikode	11.88	38.63	49.49	11.80	24.09	64.11	3.41	20.42	76.16
Wayanad	30.11	28.99	40.90	22.84	9.19	67.97	19.78	5.93	74.29
Kannur	16.27	32.02	51.71	10.37	28.63	61.00	5.26	19.10	75.65
Kasaragod	20.55	23.01	56.44	13.45	24.34	62.21	5.15	9.94	84.91
Kerala	12.36	32.87	54.77	8.83	23.50	67.67	5.78	19.31	74.91
India	3.24	28.01	68.75	1.90	15.87	82.24	1.74	16.16	82.10

Source:Estimated by the scholar

Let us examine, the sectoral share of urban income of each district in Kerala. In 1990-91, the share of the primary sector to the urban income was highest in Wayanad district (30 per cent) and the lowest in Ernakulam district (9 per cent). The contribution of the secondary sector to urban income was higher in the Idukki district (50 per cent) and lowest in the Malappuram district(15 per cent). The tertiary sector contribution to the urban income was highest in the Thiruvananthapuram district (67 per cent) and the lowest in the Idukki district(36 per cent).

After thirty years, in the 2010-11 period, the primary sector share to urban income declined in all districts except in the Idukki district. The contribution of the primary sector to the urban income was highest in Wayanad (20 per cent) and Idukki(17 per cent)and the lowest in Kozhikode and Palakkad districts (3 per cent). The contribution of the secondary sector to the urban was highest in Ernakulam (33 per cent)and lowest in Wayanad (6 per cent)districts. The tertiary sector share of the urban income was highest in Kasaragod district(85 per cent)and lowest in Ernakulam district(62 per cent). The highest urbanised district Ernakulam witnessed a strong secondary sector both in urban and rural areas among the other districts of Kerala. The share of each sector in the rural areas of all districts Kerala and all India are illustrated in *Annexure(A 4.10, A 4.11 and A 4.12)*

4.3 Estimation of Urban and Rural Per capita Income of Kerala and all India

Per Capita income of an economy is measured by dividing the economy's income by population size, which indicates the average income of a person in an economic year. This is a significant alternative indicator applied in decision-making procedures for preparing policies and development plans; however, the income of the economy replicated through Per Capita Income is not consistently circulated in the economy. The state of Kerala comprising of fourteen districts, having diverse socio-economic, cultural, inhabitants, basis of livelihood and landscape environments. Each district in Kerala is dissimilar from others and suggest diverse strengths to the state economy. It would not be completed to the procedure of analysing urbanisation and growth of the state without given the economic performance at district levels. The present section estimates per capita income in both urban and rural area of each district.

It highlights inter-district disparities in the urban-rural areas that would help to know the urbanisation and its consequences on the economy of urban and rural area of

each district for the years of 1990-91,2000-01 and 2010-11.The urban and rural per capita income of each district in Kerala and all India are illustrated in the estimated figures(in rupees)in the *Annexure(A 4.13)*

Here we examine the urban-rural disparity in the per capita income of fourteen districts of in the years of 1990-91,2000-01 and 2010-11.The ratio of urban to rural per capita income is a measure to use for the examination of urban and rural disparity in the districts of Kerala during the time.

Table 4.3:Urban-rural variation in the per capita income of each district in Kerala (ratio of urban per capita income to rural per capita income)

District/State	1990-91	2000-01	2010-11
Thiruvananthapuram	1.30	1.24	1.15
Kollam	1.06	1.08	1.11
Pathanamthitta	1.14	1.09	1.06
Alappuzha	1.12	1.53	1.12
Kottayam	1.12	1.16	1.05
Idukki	1.38	1.02	0.83
Ernakulam	1.07	1.02	0.93
Thrissur	1.12	1.11	1.04
Palakkad	1.31	1.29	1.06
Malappuram	1.11	1.10	1.00
Kozhikode	1.20	1.09	1.10
Wayanad	1.28	1.39	1.06
Kannur	1.03	0.99	1.13
Kasaragod	1.08	1.06	1.49
Kerala	1.19	1.14	1.06
India	2.19	1.49	1.94

Source:Estimated by the scholar

The value of the ratio of more than one indicates that the urban per capita income lies more than the rural per capita income. Therefore, high ratio values indicate that high inequality between the urban and rural area regarding the per capita income of that district and vice versa. Comparing all India ratio, the districts of Kerala and state average lies above which indicates that in all India level, the urban-rural disparity is

relatively high in all periods.In 1990-91,high ratio values found in Idukki district(1.38)followed by Palakkad(1.31)Wayanad(1.28)etc.In 1991, Kannur district was the most urbanised district; the ratio value is 1.03 and Ernakulam district had 1.07. After one decade, from 1990-91, the ratio value of almost districts decreased, which indicates that the variation between urban and rural per capita income decreases in these districts.

The decade 2001-2011, shows rapid urbanisation and development of all districts, which reflects in the ratio of urban to per capita income of each district in the state. Almost all districts urban to rural per capita income declines during this time, especially in Idukki and Ernakulam. It is a contradictory phenomenon that can be seen in these districts. Idukki is a low urbanised district with around 5 per cent of the urban population and produces around 4 per cent urban income to total income; therefore rural per capita income of Idukki district more than the urban per capita income in 2011. In the case of Ernakulam district, the highest urbanised district in the state had more than 68 per cent of urban population which produces merely 66 per cent of urban income; consequently, the lower population of rural area(31 per cent)produces 33 per cent of rural income. On the contrary to the other eleven districts of Kerala, Kasaragod, Kannur, and Kollam districts show the increasing disparity between urban and rural per capita income over time. Out of the fourteen districts, twelve districts follows high urban per capita income compared to their rural areas.

We already discussed the contribution of urban and rural income to the domestic product of the economy. The next section tries to find the implications of the intensity of urbanisation on the various economic indicators.

4.4 Urbanisation and Economic Performance

It is accepted that urbanisation has a vital role for the socio-economic development.There is a casual link between the level of urbanisation and the economic growth(Jacobs 1969,Beall,Jo and Sean Fox 2009).One of the easiest method is to compare the level of urbanisation with some of the economic measures like,national output,per capita income or social development indicators are used to test for a statistical relationship between urbanisation and development.Many scholars suggested that there is a broad empirical regularity exists which brings highly urbanised countries be likely to be more prosperous.Henderson(2010) established that a positive

correlation (R^2 0.57)between the share of urban population and Per capita National Income for the countries in the year 2004.There are some more studies explores the correlation between some agglomeration index such as city size or density of population and some economic indicators like per capita income,output growth,found that no relationship exists(Martin 2008)

   Here,we try to check the relationship between level of urbanisation and some measures of economic indicators.For the measure of urbanisation,we consider Urban Intensity Index(constructed in the last chapter)and economic indicators are the share of urban income,NSDP/DDP,per capita net domestic product,Worker Population Ratio,unemployment rate,poverty and banking availability of households.

4.4.1 Urbanisation and Urban Income

   The cities or urban centres are considered as growth centres that create agglomeration economies by clustering firms and people, a broad network of physical infrastructure, new information and innovative ideas. There is a close relationship between the level of urbanisation and economic growth (Fay and Opal 1999, Duranton,2009). Their studies found a high correlation between economic growth and urbanisation. Though, these studies have been unable to confirm, if urbanisation leads to economic growth and vice versa.

   According to CSO estimates, in India, the share of urban income was 37.6 per cent in 1970-71, increased to 51 per cent in 2004-05. It indicates that the share of the urban population was lies below the proportion of urban income to the total income of the economy.Our study tries to estimate urban income to the net domestic product of the economy.Now we are going to examine the association that exists between the intensity of urbanisation and the share of urban income in a particular economy.The intensity of urbanisation measured by the constructed Urban Intensity Index, the share of the urban income measured from the estimation of urban income done in the earlier section of this chapter. We examine UII and share of urban income for the periods 1990-91,2000-01, and 2010-11 used fourteen districts of Kerala, state average and all India average.

Figure 4.2:Urban Intensity Index and Share of Urban Income

1991

y = 89.409x - 1.4231
R² = 0.9459

x-axis: Urban Intensity Index
y-axis: share of Urban income

2001

y = 80.814x - 1.3382
R² = 0.9539

x-axis: Urban Intensity Index
y-axis: share of urban income

2011

y = 87.385x - 3.0065
R² = 0.9709

x-axis: Urban Intensity Index
y-axis: share of urban income
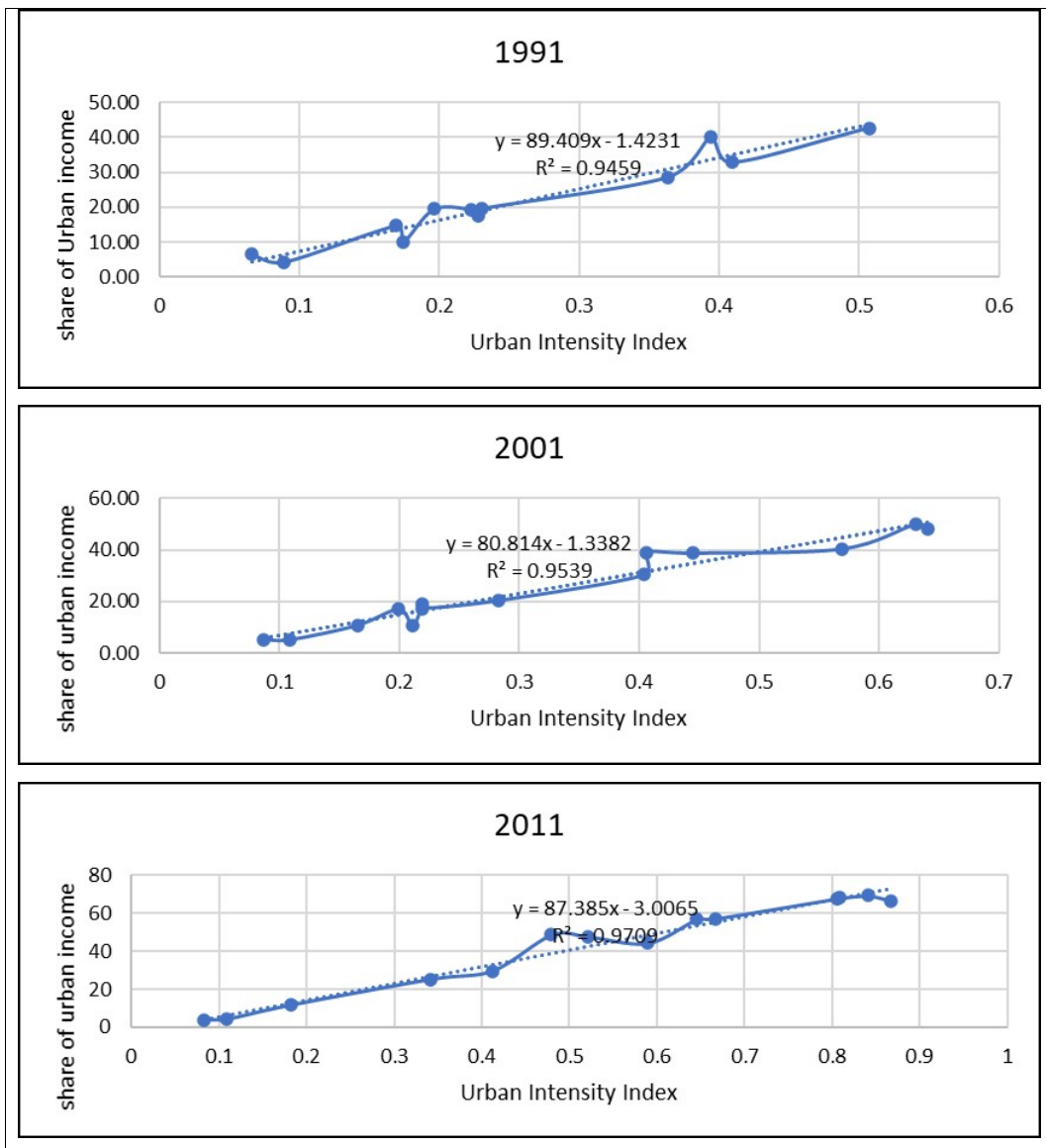
Source:Estimated by the scholar

   In all years, the trend equation shows a positive relationship exists between the intensity of urbanisation and the contribution of urban income to the whole economy with a very high degree of positive correlation in all years. This supports the observations of Jacobs(1969) and Duranton(2009), which shows that the cities bring more prosperity to the nation. If the intensity of urbanisation increases in an economy, it tends to increase the proportion of urban income to the economy.

4.4.2 Urbanisation and Net Domestic Product

Next, we try to examine the level of urbanisation on the overall performance of an economy. Henderson (2003) established that a strong positive correlation exists of around 0.85 between the log of GDP and level of urbanisation,which indicated that there is a close association between level of urbanisation and output formation of an economy

Figure 4.3:Urban Intensity Index and District Domestic Product
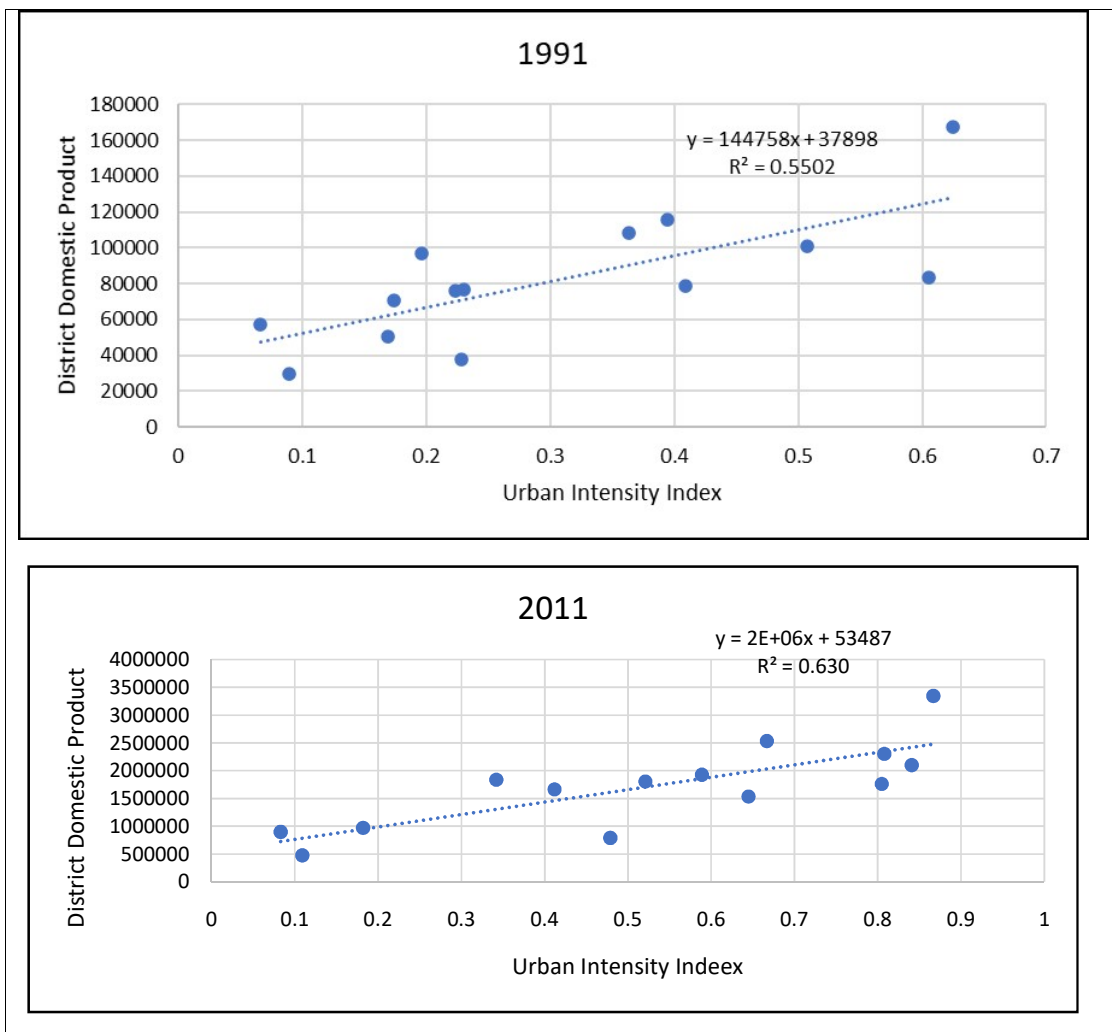
Source:Estimated by the scholar

For measuring overall economic performance, we used the total Net domestic product of the economy. Here we used district domestic product at current prices of each district of Kerala for measuring overall economic performance and Urban Intensity Index for the level of urbanisation for the period of 1990-91,2000-01 and 2010-11.

From the above analysis, we can derive a certain positive association between the intensity of urbanisation and the total domestic product of the economy. There is a strong positive correlation exists between UII and the domestic product of the economy in all years especially in 2011. This analysis also supports the literature related to the positive relationship that exists between urbanisation and economic growth (Bairoch 1988,Bloom, Canning,and Funk 2008).

4.4.3 Urbanisation and Structural Transformation

Urbanisation, in which a high concentration of people in cities and towns is one of the remarkable features of economic development(Rogerson 2008). The intensity of urbanisation boosting the density of population, mechanisation in agriculture sectors improves the productivity growth than in non-agriculture sectors and inelastic demand for these sectors lead to a decrease in the relative price of agricultural products which induces a reallocation of employment distribution from agricultural activities to non-agricultural sector, correspondingly the contribution of agriculture sector income declines and increases non-agriculture sectoral income and employment(Baumol 1967).

Here we try to examine the relationship between urbanisation and the share of agriculture sector income to the total income generated in an urban area. For this, we use, urban intensity index of each district of Kerala for measuring the level of urbanisation and share of primary sector to the net domestic product of an economy used as the measure of structural transformation.

Figure 4.4:Urban Intensity Index and share of primary sector to DDP

1991

y = -58.978x + 50.858
R² = 0.6556

share of primary sector (y-axis: 0, 10, 20, 30, 40, 50, 60, 70)

Urban intensity Index (x-axis: 0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6)

2011

y = -25.28x + 30.064
R² = 0.723

share of primary sector (y-axis: 0, 5, 10, 15, 20, 25, 30, 35, 40)

Urban intensity Index (x-axis: 0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9)
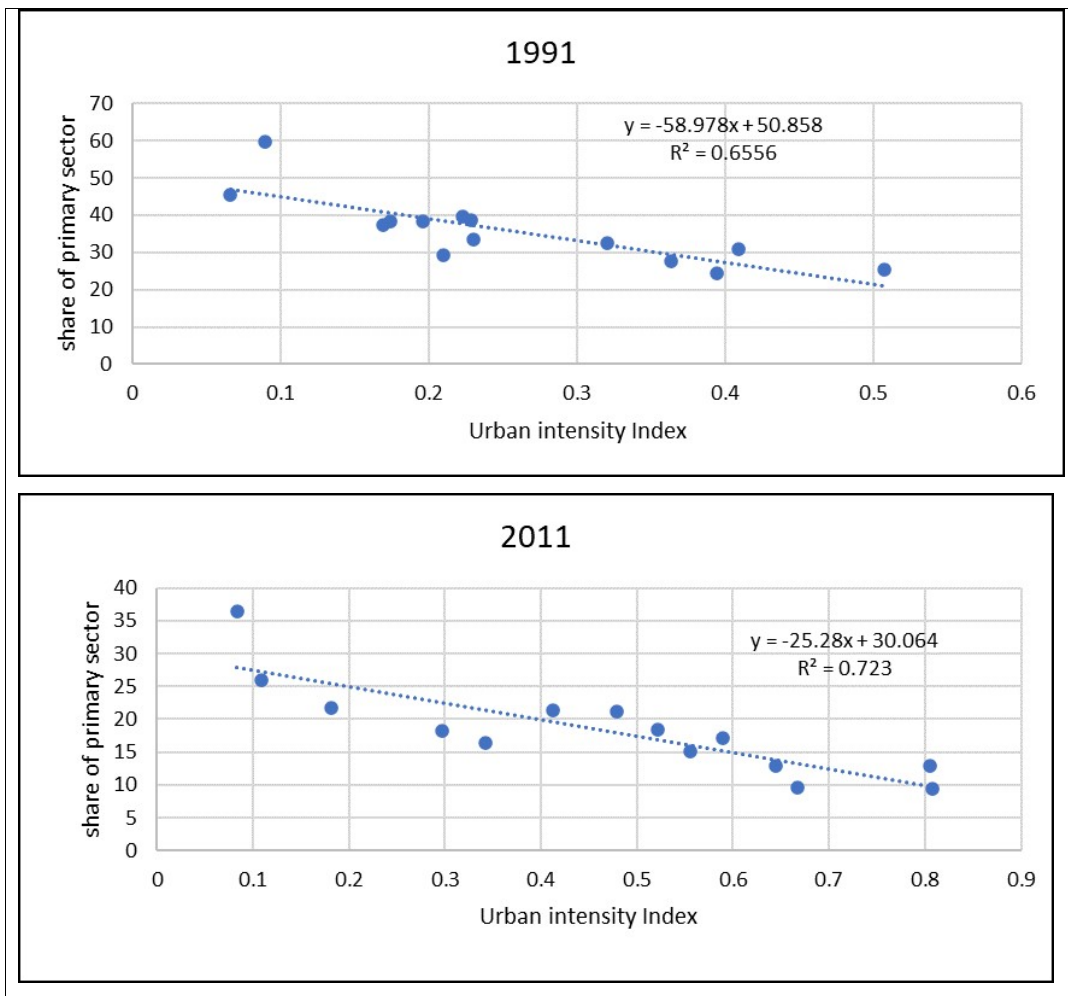
Source:Estimated by the scholar

As recognized a negative correlation concerning the level of urbanisation and share of agriculture sector to the domestic product of the economy(Davis and Henderson 2003).The scatter graph shows that the level of urbanisation increases the share of primary sector to its domestic product decreases.Therefore,we can say that there is a strong negative relationship exists between them.From 1991 to 2011,we can see that considerable level of urbanisation improves which lead to declining the share of primary sector contribution to the economy with high correlation coefficient.This pointed that as in the development process , share of agricultural sector to GDP decreases.

4.4.4 Urbanisation and Per Capita Net Domestic Product

Several studies observed that a direct relationship exists between the level of urbanisation and income per capita (Chen 2014, Friedman,2006, Henderson,2003, Fay and Opal,2000). However, some other studies support that no linear relationship between urbanization and economic growth (Hariss,1990, Turok and McGranahan,2013). They viewed that urbanization has no direct link to economic development.

.Figure 4.5:Urban Intensity Index and per capita DDP
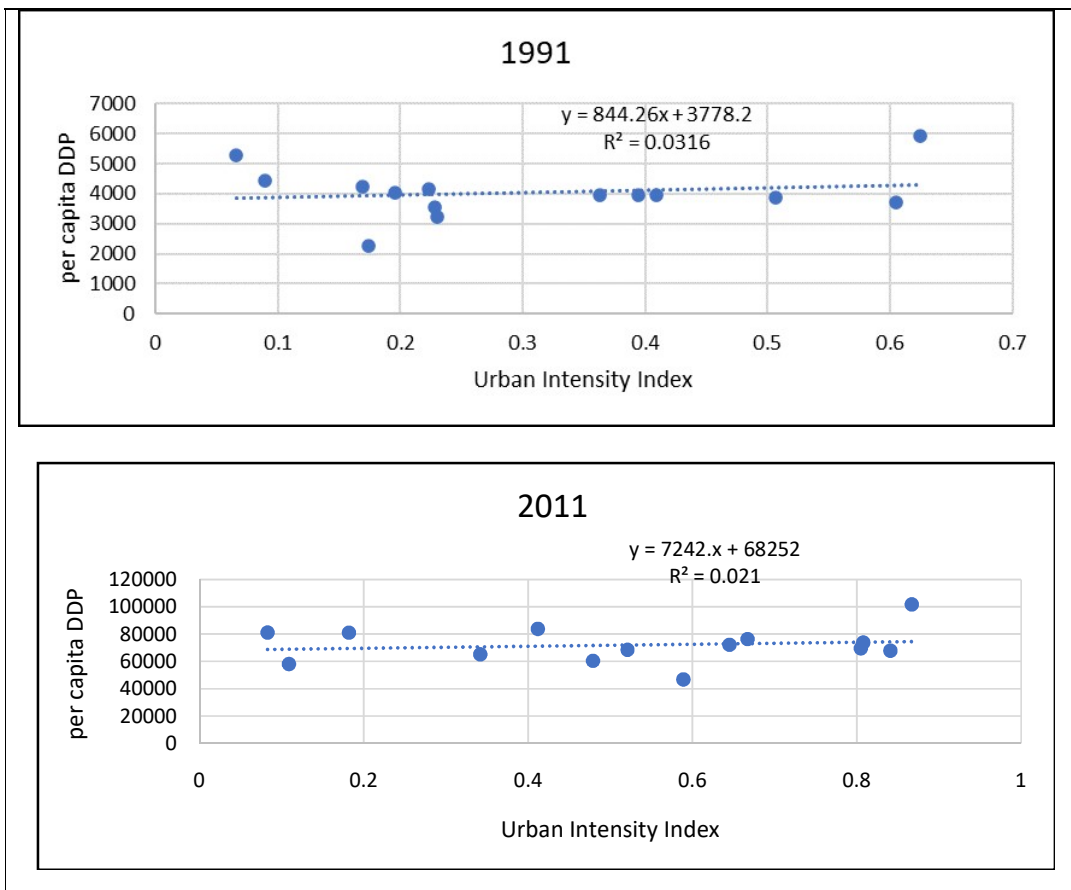
Source:estimated by the scholar

Narayan (2016), analysed the relationship between urbanisation and economic development, taking state per capita income as an economic performance measure and the proportion of urban population used as a measure of urbanisation. He found that the present level of state PCI has a positive correlation with the level of urbanisation.

which indicates that if a state with high per capita income also has a high level of urbanisation and vice versa. Though the association between urbanisation and development is very weak in the decades of 1980s and 1990s and in the last decade, 2000-2010 found a considerable positive relationship between them. His study established that the findings of earlier studies that, there is no direct relation exists between urbanisation and per capita income. The present study also tries to find the relationship that exists between urbanisation and the level of per capita income

To examine the association between the level of urbanisation and per capita district domestic product of fourteen districts of Kerala are used. In Kerala, we cannot found any significant relationship between the level of urbanisation and per capita income in all the years. Therefore, our study also supports the scholars who viewed that there is not a direct relationship exists between urbanisation and income per capita.

4.4.5 Urbanisation and Worker Population Ratio

In a country, Worker Population Ratio (WPR) or the workforce participation rate characterised by the proportion of working population to total population. It may be determined by several factors like age and sex composition, willingness and attitude to work, the capacity to work, work opportunities etc. These factors are generally different in various economies.

There are some unique features of the workforce in India. In India, the WPR is lower than in developed countries such as 45 per cent in England,50 per cent in Japan. The common feature of WPR in Kerala and India are the urban WPR is less than rural WPR. Nearly all adult people of rural households participate in agricultural-related activities while, because of social inhibitions, many adult women in urban areas reluctant to participate in work. Over time, the WPR of Kerala in both urban and rural area shows a declining trend compared to all India average. In India, during the period 2011-12, the urban WPR shows a slight increase(35.5 per cent)compared to 1990-91(35 per cent)and the rural WPR decreasing to 39.9 per cent(44.5 per cent in 1990-91). The urban and rural WPR is illustrated in the *Annexure(A 4.14)*

Table 4.4:District-wise of Urban Worker Population Ratio in Kerala and all India(in per cent)

District	1991	2001	2011
Thiruvananthapuram	29.42	32.39	36.60
Kollam	27.03	31.10	33.63
Pathanamthitta	26.45	27.33	31.12
Alappuzha	30.23	43.45	37.72
Kottayam	28.76	31.30	32.33
Idukki	31.35	31.39	34.09
Ernakulam	29.80	34.12	37.21
Thrissur	28.82	31.75	34.18
Palakkad	30.45	34.24	34.79
Malappuram	21.14	24.07	24.70
Kozhikode	23.90	28.56	30.53
Wayanad	34.63	42.67	38.13
Kannur	25.01	29.53	30.58
Kasaragod	29.05	32.20	31.86
Kerala	27.66	31.51	33.12
India	29.25	32.34	36.00

Source:census reports,NSSO reports

The nature of economic growth does not ensure that the growth in job opportunities will be equal to that of the working-age population or higher than that, after erasing out the excess of unemployment. Also, even though the opening of job opportunities for women in recent years, the participation of females in the labour market may remain low due to cultural and ethnic factors. The large parts of the female adult population in many of the states that remain outside the labour force constitute the available potential for development. India's demographic window is, thus, widely opened, unlike that of most other 17 countries at a similar level of development, but the opportunity needs to be captured and utilised through adequate education and training facilities resulting in skill formation required in modern rapidly growing activities.(Kundu and Mohanan 2009)

Figure 4.6:Urban Intensity Index and WPR

1991

$y = -7.813x + 31.843$
$R^2 = 0.1219$

2011

$y = -9.225x + 40.717$
$R^2 = 0.2665$
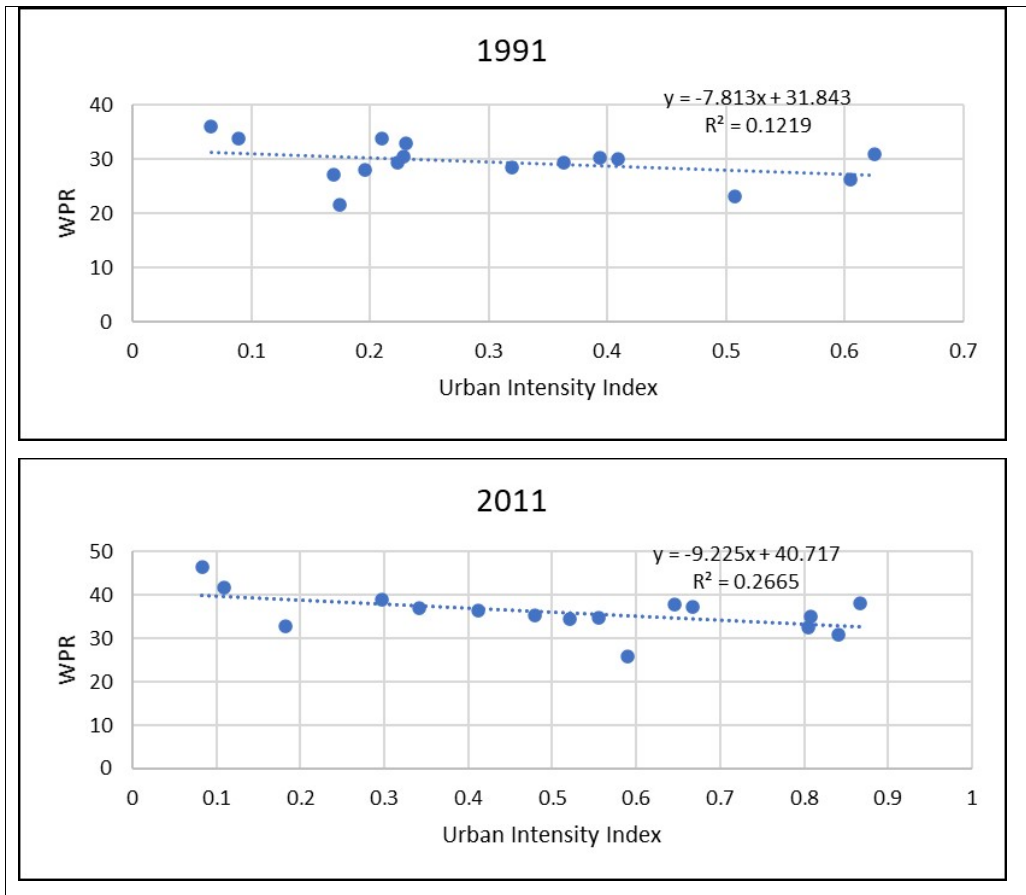
Source:Estimated by the scholar

   The worker population ratio of the urban and rural area is found to be varied in different districts of Kerala. During the period 1991, almost districts have high WPR in the rural area than in urban area except in the Idukki district where urban WPR is slightly higher than in the rural area. The districts like Malappuram, Kozhikode, Kannur, Pathanamthitta and Kasaragod had low urban WPR in comparison to the state average. In fact, a High population growth rate, has reduced the worker population ratio in urban areas. The WPR indicates the actual working population of an economy. High WPR indicates the active working population is high in the economy and decreases the rate of unemployment.

   Let us examine if any relationship exists between the level of urbanisation and worker population rate in the Kerala economy. From the scatter chart, we can see a negative linear relationship between urbanisation and worker population rate. Though, we cannot confirm the relationship due to the weak correlation coefficient. It indicates

that WPR and level of urbanisation have not a significant relationship among the districts of Kerala.

4.4.6 Urbanisation and Unemployment

The unemployment rate shows the number of unemployed to the total labour force. The unemployment rate is defined as the number of persons or labour hours that are jobless per thousand persons or labour hours in the labour force. It, in effect, gives the unutilised portion of the labour force. Thus, the unemployment rate(UR)is considered a more reliable indicator of the unemployment situation of an economy than the proportion of unemployed. (NSSO 68th round)It is measured in terms of usual status(PS+SS). Though the general activity status indicates regular unemployment, Current Weekly Status and Current Daily Status represent cyclical or temporary unemployment. Severe unemployment of the active workforce had been considered a significant problem of the Kerala economy during the last few years. The continuous increase of unemployment especially educated unemployment has become a major issue in front of the Kerala Government.

Table 4.5:Unemployment Rate of Kerala and India(PS+SS)

Region	1999-2000		2004-2005		2011-2012	
	Urban	Rural	Urban	Rural	Urban	Rural
India	47	15	45	17	34	17
Kerala	48	41	156	107	61	68

Source:NSSO reports

The Kerala state suffers high unemployment rate than the national average and so many other countries. The NSSO reports show that in 1999-2000, the urban Kerala unemployment rate was 48, whereas the national average was 47. At the same period, rural India reported as 15 and rural Kerala had 41. In 2004-05, the 61st NSSO survey report shown that urban and rural Kerala suffered a high much unemployment rate as 156 and 107 respectively, whereas, in all India level, it was 45 and 17. The 68th employment survey of NSSO reported that in urban Kerala as 61 and in the rural area was 68, whereas the all India average was 34 in the urban area and 17 in the rural area.

Table 4.6:District-wise Unemployment rate of Kerala(2011-12)

District	PS+SS	
	Urban	Rural
Thiruvananthapuram	70	66
Kollam	75	63
Pathanamthitta	96	103
Alappuzha	133	96
Kottayam	122	58
Idukki	33	58
Ernakulam	58	66
Thrissur	63	40
Palakkad	31	58
Malappuram	78	119
Kozhikode	58	54
Wayanad	59	53
Kannur	52	85
Kasaragod	26	22
Kerala	69	67
India	34	17

Source:NSS 68th Round(July 2011–June 2012)*Central and State Sample Pooled Data Central and State Sample Pooled Data from the publication of the department of economics and statistics.*

The rate of unemployment in the state of Kerala is excessively high when related to the national average. The 68th NSSO report estimated that the urban sector of Kerala improved and reached a position better than the rural sector of the state. Though the state suffers a remarkably high rate of unemployment compared to all India average.

Next, we examine, if there any association exists between urbanisation and unemployment in the districts of Kerala.

Figure 4.7:Urban Intensity Index and Unemployment rate
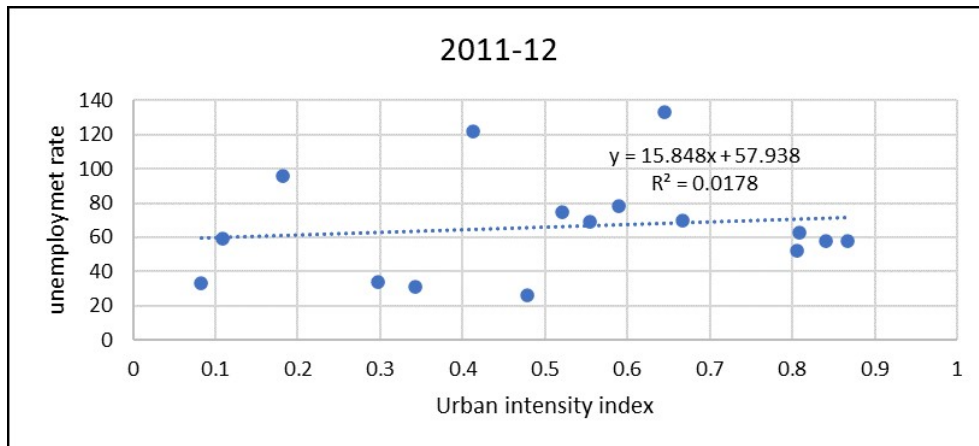
Source:Estimated by the scholar

The intensity of urbanisation and the unemployment rate shows a positive linear relationship, though the degree of correlation is not significant indicates that it is not supported the association exists between urbanisation and unemployment rate among the districts in Kerala.

4.4.7 Urbanisation and Pattern of Consumption Expenditure

India is a developing country with a low infrastructural development tied with the high growth rate of population has made the lives of many poor people difficult. Both per capita income and food consumption pattern are signs of human development, but food consumption is a good indicator of social welfare. The standard of living of a household can be realised from the consumption pattern and the traits of the consumption budget, which visibly show the level of welfare of the households. The food consumption pattern of the household is a chief barometer of individual welfare and well-being in any area. Consumption adds to human development when it enlarges the capabilities and improves the lives of people without severely affecting the well-being of others[5](UNDP 1998).Consumption pattern of the households depends on many factors like income,assets,education level,occupational structure,and demographic features.

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[5] UNDP, U. (1998). Human development report 1998: Consumption for human development. http://hdr.undp.org/sites/default/files/reports/259/hdr_1998_en_complete_nostats.pdf

Table 4.7:Average Monthly Per capita Consumption Expenditure of Kerala and India(per cent)

Kerala/India	Period	Urban		Rural	
		Food	Non-Food	Food	Non-Food
Kerala	2004-05	39.97	60.03	44.97	55.03
	2011-12	40.45	59.55	45.06	54.94
India	2004-05	42.49	57.51	28.44	71.56
	2011-12	43.00	57.00	53.00	47.00

Source:NSSO 61st and 68th round from the publications of the department of economics and statistics,Govt.of Kerala

The above statement reveals that the variation between urban-rural sectors of the state Kerala and all India.The disparity between urban and rural area more visibly feeling in the consumption level of all India average than the state Kerala.Food expenditure of per person in urban Kerala is 13.25 per cent more than rural Kerala in 2004-05.Whereas in India,per person food expenditure of urban area was 45 per cent more than the rural area in the same period.

Similarly,the per person non-food expenditure of urban India was 141 per cent more than the rural area,whereas in Kerala it was 39 per cent more than the rural area.In 2011-12,the per person food expenditure of urban India reached 49 per cent more than rural India.Per capita,the non-food expenditure of urban India was 123 per cent more than the rural area.At the same period,in Kerala,per person,food expenditure of urban Kerala was 11 per cent more than the rural area,and in the case of per capita non-food expenditure of urban area was 35 per cent more than the rural area.

The above statement declared that the variation between the urban and rural area in the state Kerala much far below the national average.The difference between the urban and rural area in non-food expenditure shown as higher than the food expenditure experiences in Kerala compared to all India level.

Table 4.8:District-wise the proportion of Food and Non-Food Consumption Expenditure in Kerala in per cent(2011-12)

District/state	Urban		Rural		The ratio of Food to Non-Food	
	Food	Non-Food	Food	Non-Food	Urban	Rural
Thiruvananthapuram	39.02	60.98	46.25	53.75	0.64	0.86
Kollam	48.34	51.66	48.90	51.10	0.94	0.96
Pathanamthitta	46.96	53.04	51.99	48.01	0.89	1.08
Alappuzha	45.57	54.43	45.65	54.35	0.84	0.84
Kottayam	40.42	59.58	40.84	59.16	0.68	0.69
Idukki	37.78	62.22	46.79	53.21	0.61	0.88
Ernakulam	35.88	64.12	43.76	56.24	0.56	0.78
Thrissur	33.48	66.52	38.73	61.27	0.50	0.63
Palakkad	40.52	59.48	50.75	49.25	0.68	1.03
Malappuram	42.83	57.17	40.39	59.61	0.75	0.68
Kozhikode	46.32	53.68	46.58	53.42	0.86	0.87
Wayanad	41.99	58.01	43.08	56.92	0.72	0.76
Kannur	44.66	55.34	46.67	53.33	0.81	0.88
Kasaragod	46.17	53.83	47.50	52.50	0.86	0.90
Kerala	40.45	59.55	45.06	54.94	0.68	0.82
India	43.00	57.00	53.00	47.00	0.75	1.13

Source:NSSO 68th round from the publications of the department of economics and statistics,Govt.of Kerala

The urban and rural area of each district's average monthly per capita expenditure shown in the *Annexure(A 4.15)*. The monthly per-capita expenditure (MPCE) of food and non-food items of intra-district and inter-district variations are illustrated in table 4.17. It is to be stated that the high urban MPCE found in the foremost districts such as Thiruvananthapuram, Idukki, Ernakulam, Alappuzha and Thrissur and the lowest urban MPCE was in Malappuram, Kasaragod, Kannur, Kozhikode and Wayanad. It is interesting to look at the above statement that shows the southern districts from Thrissur to Thiruvananthapuram had high MPCE in urban areas except in the Kollam district. The urban areas of northern districts from Palakkad to Kasaragod comparatively low MPCE than the southern districts. One of the reasons for the high disparity between urban and rural area is the consumption expenditure or cost of living

in the urban area is remarkably high compared to the rural area especially those districts with high average per capita expenditure in urban areas.

The proportion of food items expenditure to the total expenditure is another indicator of evaluating the development of the economy; the ratio of food to non-food shows the level of food consumption expenditure and non-food consumption expenditure. If the value of the ratio more than one, which indicates that the food consumption expenditure is more than the non-food consumption expenditure. High food consumption expenditure and low non-food consumption expenditure implies that that society does not fully enjoy the comforts and other socially desirable amenities.

In the urban area of all districts and at all India level, the ratio of food to non-food expenditure shows the value less one indicates that non-food expenditure higher than food expenditure. The lower the ratio higher the non-food consumption expenditure and vice-versa. The urban areas of Thrissur(0.50)and Ernakulam(0.56)districts had a comparatively lower value of the ratio than the urban parts of other districts. The rural area of Pathanamthitta(1.08)and Palakkad(1.03)districts have high ratio values than the other districts implies that their food consumption expenditure exceeds non-food consumption expenditure. Likewise, the urban area of Thrissur district, its rural area also had a low ratio of food to non-food expenditure. Let us check the association between the ratio of food to non-food consumption expenditure of urban areas of each district and the intensity of urbanisation.

Figure 4.8:Urban Intensity Index and Consumption Pattern
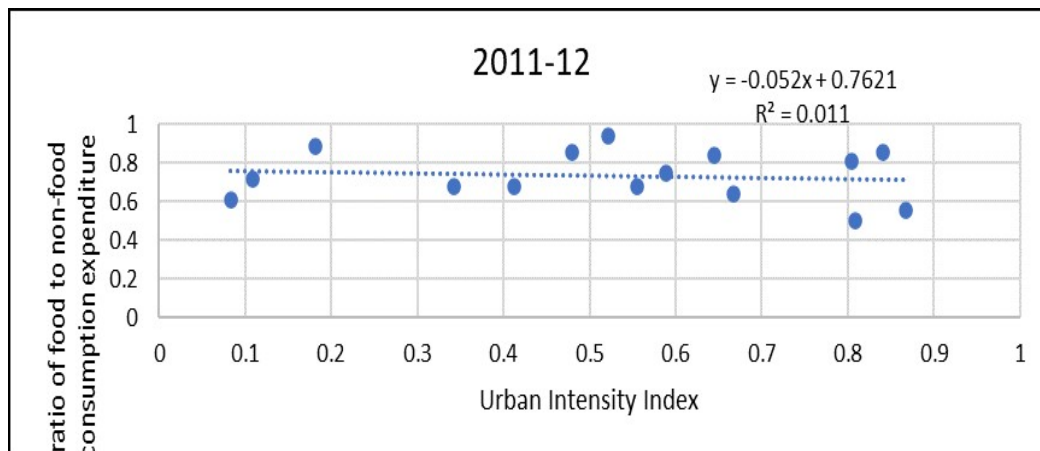
Source:Estimated by the scholar

From the scatter diagram, we can see that there is a negative linear association between the level of urbanisation and consumption pattern, indicates that there is an increasing trend of non-food consumption expenditure with a high level of urbanisation. But we cannot confirm this relationship due to a low correlation coefficient. The other side of the interpretation is that in Kerala, urban areas of all districts have similar consumption pattern without concerning the intensity of urbanisation.

4.4.8 Urbanisation and poverty level of an economy

The implications of the transformation on the economic welfare of the society reflected in the specific area and its surrounding areas.Retnaraj(1997)examined urbanisation and urban poverty in Kerala. He viewed that Kerala witnessed rapid urbanisation in the eighties and leading to the emergence of more towns, cities, and metropolises. The heavy concentration of population in these urban centres without proper settlements and social developments would lead to poverty.

Here we try to analyse the level of poverty in the urban and rural area of Kerala and India. The criteria of poverty line based on monthly per capita in of the state Kerala and all India shows as an increasing trend over time. Based on the Lakdawala Methodology, Kerala's poverty line lies above the all India level both in the urban and rural areas at all periods for the reason is that the cost of living in the state is more than the national average.

Table 4.9:Poverty Line in Kerala and India (Rs)

Period	Kerala		India	
	Urban	Rural	Urban	Rural
1973-74	62.78	51.68	56.76	49.63
1983-84	122.64	99.35	115.65	89.5
1987-88	163.29	130.61	162.16	115.2
1993-94	280.54	243.84	281.35	205.84
2004-05	559.39	430.12	538.6	356.3
2009-10*	1139.81	803.06	1198	801
2011-12*	1353.68	1054.03	1407	972

Source: Lakdawala Methodology, Planning Commission2014,*Rangarajan

Methodology

In Kerala, the percentage of people living in poverty both in urban and rural place shows a declining trend during the period 1973-74 to 2011-12. However, the urban

poverty rate is more than the rural poverty rate. One of the main difference between Kerala and India was the disparity between urban and rural poverty.

Table 4.10:Population Below Poverty Line (per cent)

Year	Kerala			All India		
	Urban	Rural	Total	Urban	Rural	Total
1973-74	62.74	59.19	59.79	49.01	56.44	54.88
1983-84	45.68	39.03	40.42	40.79	45.65	44.48
1987-88	40.33	29.1	31.79	38.2	39.09	38.86
1993-94	24.55	25.76	25.43	32.36	37.27	35.97
2004-05	20.2	13.2	15	25.7	28.3	27.5
2009-10*	23.7	9.7	16	35.1	39.6	38.2
2011-12*	15.3	7.3	11.3	26.4	30.9	29.5

Source: Lakdawala Methodology, Planning Commission2014,*Rangarajan Methodology

. Kerala experienced substantial poverty in the urban area; on the other hand, all India had vast poverty in the rural area. However, the poverty rate of the state(11.3)was much below the national average(29.5)in both urban and rural areas. We can see the high rate of unemployment in poverty in urban areas compared to rural areas.

Table 4.11:District-wise Percentage of Population Below Poverty Line

Districts	Urban	Rural
Thiruvananthapuram	6.00	3.70
Kollam	12.20	7.00
Pathanamthitta	6.10	5.20
Alappuzha	14.10	4.40
Kottayam	6.00	6.90
Idukki	14.20	3.40
Ernakulam	16.30	12.50
Trichur	15.30	13.10
Palakkad	20.50	11.20
Malappuram	31.60	19.30
Kozhikode	36.20	25.30
Wayanad	10.60	22.20
Kannur	39.40	35.40
Kasaragod	34.20	22.60
Kerala*	23.7	9.7
India*	35.1	39.6

Source:Chaudhuri and Gupta(2009)

The district-level estimates of poverty are found to be essential for a complete insight into the level of living dominant in any part of the economy. There has been a severe urban-rural divide even at the district level; however, the pattern has not been very expectable in either of the sectors(Chaudhuri and Gupta 2009). The urban area of these districts such as Thiruvananthapuram, Pathanamthitta and Kottayam had around 6 per cent of the population lives at the poverty level, which was incredibly low as compared to the other districts. The urban areas of Kannur, Kozhikode, Kasaragod, and Malappuram districts had a high poverty rate. Similarly, the rural areas of the northern districts had a high poverty rate as compared to the urban areas of such districts. It conveys that the poverty rate of the southern districts was in a comparatively better position than the northern districts of Kerala.

Let us look the relationship between urban poverty and intensity of urbanisation in Kerala by using scatter diagram and measuring correlation coefficient.

Figure 4.9:Urban Intensity Index and Poverty
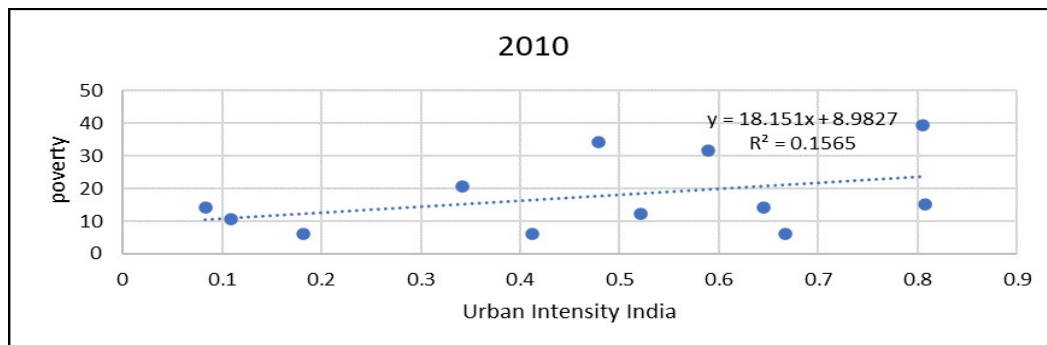
Source:Estimated by the scholar

The scatter graph shows,positive linear relationship between urbanisation and level of poverty.This indicate that intensity of urbanisation increases,poverty rate also increases in the districts of Kerala.Though the correlation coefficient does not significantly support the relationship between urbanisation and poverty level of the economy.

4.4.9 Urbanisation and Banking services

Banking and financial services show a very decisive role in the growth and development of an economy. The term financial inclusion widely used recently in India which intended to modify the entire financial service providing system. It makes

available to the deprived persons to get financial services at a low cost and encourage them to activate in the financial system. It ensures all section of the society actively participated in the monetary economy which is considered to be a significant movement for the inclusive growth of an economy. (Singh,2017)

Financial inclusion plays a crucial role in developing a reliable and efficient financial infrastructure, which facilitates the growth of an economy. There is a strong association between banking penetration and growth. It should be in favour of deepening banking institutions. Therefore, policymakers can look forward to these findings to maintain a sustainable-inclusive-developed economic system in an emerging economy like India (Sharma 2016).

The banking services availing in Indian urban households was 45.52 per cent in 2001, which was increased to 67.77 per cent in 2011. The state Kerala achieved more financial inclusion both in urban(74.68 per cent) and rural(73.86 per cent) areas compared to all India average. In the case of availing banking services, there is a notable variation between the urban and rural area at the national level(15.41 in 2001 and 13.33 in 2011). Though in Kerala, the variation between urban and rural area declined from 3.74 in 2001 to 0.82 in 2011.

Table 4.12:Availing Banking Services in Kerala and India(per cent)

District/state	Urban		Rural		Urban-Rural	
	2001	2011	2001	2011	2001	2011
Thiruvanthpuram	46.34	69.92	37.6	64.5	8.74	5.42
Kollam	48.84	69.89	43.17	69.17	5.67	0.72
Pathanamthitta	58.97	79.4	50.75	77.7	8.22	1.7
Alappuzha	41.53	66.61	40.23	70.26	1.3	-3.65
Kottayam	61.22	80.02	58.79	79.7	2.43	0.32
Idukki	61.03	81.41	51.06	76.38	9.97	5.03
Ernakulam	61.03	78.55	58.13	78	2.9	0.55
Thrissur	52.93	76.16	45.88	71.68	7.05	4.48
Palakkad	52.55	78.7	51.99	74.38	0.56	4.32
Malappuram	48.65	67.16	50.34	68.99	-1.69	-1.83
Kozhikode	50.85	72.71	49.86	71.7	0.99	1.01
Wayanad	53.09	73.99	52.33	75.59	0.76	-1.6
Kannur	63.81	86.69	74.82	86.44	-11.01	0.25
Kasaragod	57.85	81.05	60.72	83.32	-2.87	-2.27
Kerala	53.9	74.68	50.16	73.86	3.74	0.82
India	45.52	67.77	30.11	54.44	15.41	13.33

Source:Census of India(2001,2011)

The census data shows, the central and northern districts of Kerala performed better compared to the southern districts of Kerala both in urban and rural areas. As for the overall performance of the districts of Kerala, the difference between urban and rural area was higher in the southern districts in 2001 which tend to be decreased in the 2011 census. The negative value of urban-rural variation indicates better performance of rural area for availing banking services. (e.g., Alappuzha, Malappuram, Kasaragod and Wayanad in 2011census). It implies that more progressive and commendable financial inclusion implemented in Kerala especially in the rural areas. Let us examine the association between banking availability households and the intensity of urbanisation.

Figure 4.10:Urban Intensity Index and household banking
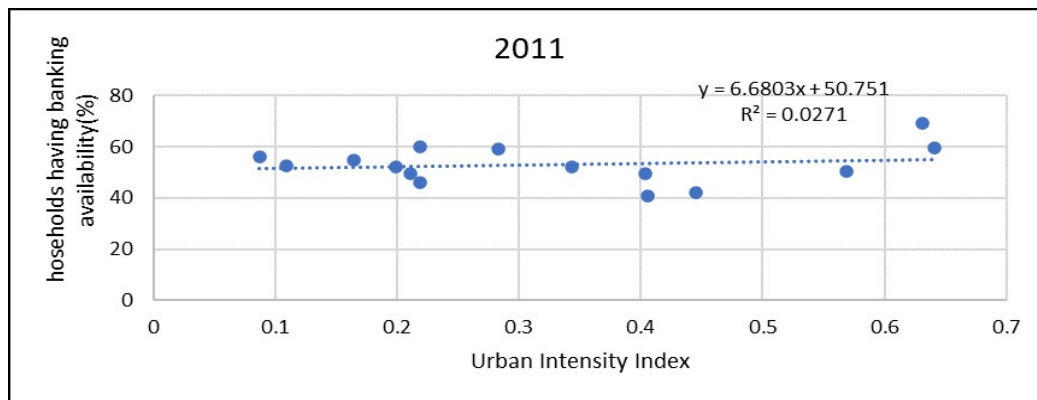
Source:Estimated by the scholar

We can see a positive relationship between the intensity of urbanisation and the percentage of households having a banking facility in each district of Kerala. However, the correlation coefficient does not give a significant value to prove that relationship. From the scatter graph, we can interpret that, the intensity of urbanisation if it is high or low, all districts have around 50 to 80 per cent of households have banking availability. Since 2011, there are several financial inclusion programmes launched by the central government. Financial inclusion has an essential role in providing households more significant opportunities to borrowing openings, which improves human capital formation, better socio-economic status, and long-run economic development of an economy.

From the above analysis of the association between major economic indicators and urban intensity index, we get various results. There are significant relationship exists in the share of urban income, the domestic product of the economy, the share of primary

sector in the domestic product of the economy and poverty rate of the economy and the level of urbanisation. Next section we try to construct an economic index for analysing the economic performance of urban areas of all districts in Kerala for the year 2011.

4.5 Urbanisation and Economic Index

The per capita income growth rate is generally used for measuring the economic growth of an economy. It can be viewed that the concept of stable regional development could surely consider several economic indicators. For constructing the economic index, we used nine major economic indicators as illustrated in table 4.22

Table 4.13:Economic indicators and sources for Economic Index

Economic Indicators	Source
Per capita income	From the estimated urban and rural income(urban and rural area)2010-11
The income share of the non-agriculture sector(secondary+tertiary sector)	From the estimated urban and rural income(urban and rural area)2010-11
Worker population ratio	Census of India 2011,NSSO 68th round
Workers in the non-agriculture sector(secondary+tertiary sector)	Census of India 2011,NSSO 68th round
Monthly per capita consumption expenditure	NSSO 68th round(2011-12)
The ratio of food to non-food consumption expenditure	NSSO 68th round(2011-12)
Percentage of Households availing banking services	Census of India 2011
Unemployment rate	NSSO 68th round(2011-12)
Poverty rate	Planning commission 2014,Kerala;Chaudhuri and Gupta 2009,(urban and rural data)

Source:Constructed by the scholar

The Economic index can be calculated as the following.

Here 'x_{id}'denotes the numerical value of 'i'th economic indicator in d'th district of Kerala(i=1,2,3,4,5…..n;   d=1,2,3,4,5……m)

 The economic indicator'x_i'is directly related to the development,and so we use the formula as following.For instance,per capita income,WPR etc

Development Index value(X$_{id}$) $= \dfrac{(x_{id}) - min(x_{id})}{max(x_{id}) - min(x_{id})}$

If the economic indicator'x$_i$'is inversely related to the development,then we use the formula as follows.For instance,unemployment,poverty etc.

Development Index value(X$_{id}$) $= \dfrac{max(x_{id}) - (x_{id})}{max(x_{id}) - min(x_{id})}$

Now for the combination of all indices,in most of the studies linear summation method based on equal weight index has been used to compute the composite index[6].(Government of India 2013;Bakshi 2015 etc.).So, with this weighting strategy, the index for each component will be calculated with the method of linear aggregation. The value of the index varies between 0 and 1.

To evaluate the change in the performance of the urban area of each district in economic accomplishments in a distinct way. The level of economic development of each district assessed through the composition of indicators of the index value. The economic index has illustrated not only explain the aggregate output of each district but also the level of involvement of the population in a district. Inter-district variation in economic attainment shows that in 2011in table 4.27, the high level achieved in the urban areas of Ernakulam district and Thiruvananthapuram district. The medium level of economic attainments achieved in the urban areas of Thrissur, Idukki, Palakkad, Kottayam, Pathanamthitta districts is above the state average. The districts like Kasaragod, Alappuzha, Kannur, Kollam, Wayanad districts also attained the medium level of an economic index. Though, these districts performed below the state average. The low level of economic index attained by the major districts like Kozhikode and Malappuram. It should be noted that here we are looking at the performance of the urban area of each district in accordance with the economic index. The most urbanised district, Ernakulam attained the first position among the other districts of Kerala. It indicates that the level of urbanisation contributes to economic attainments in the district. Thiruvananthapuram district also attained, high level of the economic index, though the district has only a medium level of urbanisation. It indicates a good sign of development in the district.

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[6] Government of India (2013): "Report of the Committee for Evolving a Composite Development Index of States", Ministry of Finance, Government of India,

Table 4.14:Economic Index of Urban Parts of Each District in Kerala(2011)

District	PCI	Non-agri Output	WPR	Non-agri empt	Uempt	MPCE	Food to Non-Food	Poverty	Banking	Economic Index
Thiruvananthapuram	0.653	0.939	0.529	0.879	0.568	0.987	0.759	0.928	0.244	0.721
Kollam	0.488	0.881	0.397	0.953	0.523	0.315	0.241	0.756	0.243	0.533
Pathanamthitta	0.727	0.881	0.285	0.823	0.333	0.694	0.328	0.925	0.671	0.630
Alappuzha	0.552	0.894	0.579	0.921	0.012	0.780	0.414	0.703	0.095	0.550
Kottayam	0.756	0.846	0.447	0.776	0.099	0.694	0.690	0.928	0.699	0.660
Idukki	0.394	0.578	0.417	0.643	0.901	0.924	0.810	0.700	0.762	0.681
Ernakulam	0.978	0.935	0.556	0.980	0.676	0.819	0.897	0.642	0.633	0.791
Thrissur	0.534	0.900	0.421	0.853	0.631	0.703	0.987	0.669	0.525	0.691
Palakkad	0.407	0.987	0.448	0.989	0.919	0.397	0.690	0.525	0.640	0.667
Malappuram	0.012	0.686	0.012	0.791	0.495	0.138	0.569	0.217	0.120	0.338
Kozhikode	0.441	0.979	0.259	0.987	0.676	0.198	0.379	0.089	0.370	0.486
Wayanad	0.280	0.506	0.597	0.361	0.667	0.238	0.621	0.800	0.428	0.500
Kannur	0.490	0.925	0.261	0.860	0.730	0.160	0.466	0.012	0.987	0.543
Kasaragod	0.548	0.928	0.318	0.811	0.964	0.131	0.379	0.144	0.746	0.552
Kerala	0.510	0.910	0.374	0.909	0.595	0.550	0.690	0.539	0.459	0.615

Source:Estimated by the scholar.*Note;PCI-Per capita Income,non-agri Output-non-agricultural output,WPR-Worker population Ratio,Non-agri empt-non-agriculture sector employment,Uempt-unemployment,MPCE-monthly productive consumption expenditure,Food to Non-Food-ratio of food to non-food consumption expenditure*

The districts with a medium level of the economic index such as Idukki, Palakkad, Kottayam and Pathanamthitta with a low level of urbanisation performed comparatively well as compared to other high urbanised districts like Alappuzha, Kannur, and Kollam. This specifies that even in the low level of urbanised district, they attained better economic indicators. Similarly, the high urbanised districts like Kozhikode and Malappuram districts have attained only a low level of an economic index. This implies that these districts could not attain better economic development by their urban population.

Table 4.15:Relative Levels of Economic Index of Urban Areas of Districts in Kerala

HIGH	MEDIUM	LOW
Ernakulam Thiruvananthapuram	Thrissur,Idukki,Palakkad,Kottayam,Pathanamthitta,Kerala,Kasaragod,Alappuzha Kannur,Kollam,Wayanad	Kozhikode Malappuram

Source:constructed by the scholar.*Note:**High**:-value of economic index>(Mean+SD)**Low**:-value of economics Index<(Mean-SD)and **Medium**:-value of economic index(Mean-SD<Mean+SD)*

Next,we can check the correlation coefficient between these indicators and the urban intensity index.There are only two correlation coefficient significant values between urban intensity index and economic indicators.The non-agricultural output and non-agricultural sector employment have a positive correlation to the value of urban intensity index.This indicates that the intensity of urbanisation increases,which tends to a structural shift from agriculture sector activities to non-agricultural sector activities.

Table 4.16:Correlation Matrix Between Urban Intensity Index and Indicators of Economic Index

Indicators/variables	UII	PCI	Non-agri Output	WPR	Non-agri employment	Unemployment	MPCE	Food/Non-food	Poverty	Banking	Economic Index
UII	1										
PCI	0.242	1									
Non Agri Output	.644**	.519*	1								
WPR	-0.126	0.503	-0.028	1							
Non-Agri Empt	.664**	0.369	.895**	-0.158	1						
Unemployment	-0.074	-0.232	-0.046	-0.129	-0.076	1					
MPCE	-0.066	.578*	0.036	.561*	0.088	-0.316	1				
Food/Non-Food	0.101	0.178	-0.149	0.354	-0.127	0.206	.545*	1			
Poverty	-0.439	0.408	-0.218	.631*	-0.238	-0.465	.731**	0.281	1		
Banking	-0.176	0.338	0.076	-0.031	-0.111	0.441	-0.035	0.164	-0.192	1	
Economic Index	0.031	.785**	0.309	.627*	0.218	0.098	.778**	.614*	.530*	0.399	1

Source:calculated by the scholar.Note;UII:-Urban Intensity Index,PCI-Per capita Income,non-agri Output-non-agricultural output,WPR-Worker population Ratio,Non-agri employment-non-agriculture sector employment,Unemployment,,MPCE-monthly productive consumption expenditure,Food to Non-Food-ratio of food to non-food consumption expenditure.** Correlation is significant at the 0.01 level and * Correlation is significant at the 0.05 level (2-tailed).

Here, per capita income and the economic index had a high degree of the positive significant correlation coefficient. (0.785). There is a significant relationship between PCI and, non-agricultural output, WPR, MPCE. There is a significant positive correlation between WPR and the Economic index(0.627). The economic indicator MPCE and the economic index had a significant positive correlation(0.778), which indicates that monthly consumption expenditure had a significant impact on the economy. Similarly, the pattern of consumption also has some effect on the economic index. There is a positive correlation between poverty and the economic index. From table 4.23, the poverty index value indicates that a higher value means low poverty. Therefore, there is a positive correlation exists between poverty and the economic index. It can be concluded that per capita income, worker population ratio, per capita monthly consumption expenditure, the pattern of consumption, level of poverty are the significant indicators that have a high correlation to an economic index.

4.9 Conclusion

From the analysis of the present chapter examined above, there is a development gap between the districts which confirms the fact that of increasing inter-district inequality in economic development. It can be recognised that, in the state, there is no direct effect of level of urbanisation on economic development. For instance, the low urbanised or low densely populated districts(such as Idukki, Pathanamthitta, Kottayam etc)attained comparatively better economic performance as related to the highly urbanised districts like Kannur, Kozhikode, Malappuram etc. It indicates that if the districts with a low proportion of the urban population can achieve more economic development. The huge increase in the urban population gets not a proportionate improvement in required economic indicators for development. This is maybe observed in those districts(Kozhikode, Kannur, and Malappuram)where a massive increase in urban population has happened especially due to increasing census towns.

We can see a relatively worse situation in rural areas of these districts from the tables illustrated above. There is no question about urbanisation is considered a force for development. This brings more economical possibilities, enhances state-supported services and better living conditions. It should be ensuring that a balanced economic development with the increasing urban population is the basic requirement of the

people. As we already discussed the economic performance of each district in the scenario of urbanisation. The development of a society should be improving its basic social development indicators. Therefore, in the next chapter, we try to discuss, basic social indicators performance of each district of Kerala. This will give a clearer picture of the development status of each district of Kerala.

Chapter 5

Urbanisation and its Implications on the Social Indicators of Kerala Economy

Chapter Five

Urbanisation and its Implications on the Social Indicators of Kerala Economy

5.1 Introduction

The transformation implies the modernisation of the economy, institutions, and society. Economical transformation to modern society has significant effects on the level of living human beings, changing values, norms, customs, and beliefs. Established review of development economics literature, we can derive specific sources of transformation of a traditional economy to a modern economy. Many development and agricultural economists emphasised the importance of public sector investment in technology development. Such as public investment in physical infrastructure including irrigation, road, transport, power and telecommunication, market development, finance, encouraging research etc. Productivity growth and capital accumulation are the fundamental sources of change together with the modifications in consumer demand which inter-links the transformation process[1](Johnston and Mellor 1961).

The dynamic role of the economic sectors enhances both consumption and production linkages among agriculture and non-agriculture, which also concerning urban and rural areas. The soundest backward linkages are consumption linkages which are particularly strong in low-income countries to lead multiplier growth and poverty reduction(Delgado 1996). From the above discussion, it can be viewed as transformation is a part of the development and defined as a dynamic process by which an economy, society, and institutions to a more modernised developed level. It is significant to focus on the transformation of an economy towards higher productivity and more meaningful social change.

Generally, the improvement of an economy can be measured by using GDP or GNP as a universally accepted indicator of the progress concerning development. Based on the models of Solow and Myrdal, paths of progress can be founded on the GDP per capita and on how intensifying this measure to encourage the trickle-down

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[1] Johnston, B. F and Mellor J. W. (1961). The role of agriculture in economic development. The American Economic Review, 51(4), 566–593. https://www.ceeol.com/search/article-detail?id=15465

effect to the economic and social sectors of societies(Haller 2012).Economic development in distinction presented as a multidimensional concept that is fundamentally different from economic growth. The term economic development is defined as the process mainly switched to raising the living standard of the people by the improvement in the level of technology, improvement in education level, reduction of poverty etc. It requires a balance between the economic and social dimensions of regions. Therefore, the way of measurement of the welfare of an area must consider an assessment of essential means of a region's social protection including human performances as well as the economic performances(Perrons and Dunford 2012). The selection of individually merging indicators like the social, economic, and sustainable magnitudes increases the opportunity of producing a well-rounded perception of the modern view of development.

The Kerala economy, one of the rapidly urbanising states of India, has unique features of high-quality socio-cultural indicators. The competence and efficiency of efficient planning required the collection and estimation of several macroeconomic aggregates such as production and income, per capita income, employment, consumption, and specific social indicators of development. In the last chapter, we have tried to estimate district-wise the urban and rural income of the state Kerala and all India average. We also examined urbanisation and its implications on the major economic indicators of the Kerala economy.

The primary focus of the present section is the examination of the performance of relevant social indicators of the Kerala economy. Furthermore, the fundamental part of the present study is to explore the performance of urban areas of each district in the socio-economic indicators of the transformation of Kerala economy, which helps to examine the effect of intensity of urbanisation in each district of Kerala economy. The chapter also intends to construct a social development index and the composite development index for the analysis of the inter-district variations in the Kerala economy.

5.2.Social Development Indicators in Kerala

Socio-economic development is a multi-dimensional process that enhances the better quality of life of the people. Through the various Five-Years Plans Government of India aimed the fulfilment of a higher standard of living by delivering

necessities of life including improvement in their economic and social well-being. Here we examine the performance of basic social indicators of the state Kerala. It is recognised that Kerala, the best performer in the social indicators compared to major states and all India average. In the case of the Human Development Index, Kerala ranks first among the states of India. Here we analyse three dimensions of social indicators such as level of education, the status of health and availability of basic household amenities.

5.2.1 Urbanisation and Level of Education

Education is a vital asset in developing human resources which is the main operator for the scientific revolution and growth of the economy. This is possible simply through facilitating better education to the society that ensures the multi-level development of its people. After the industrial revolution, the developed countries utilized their human resources to obtain more national income and a significant part of it came from the service sector.

a) Literacy rate

Elementary literacy is essential for eradicating poverty, reducing child mortality, curbing population growth, achieving gender equality and ensuring sustainable development, peace, and democracy. Beginning with basic literacy programmes, activities, in this sector, view education in a lifelong learning perspective contributing not only laid down to enhancing reading and writing capabilities but also imparting a comprehensive set of life skills that enable them to access all development resources[2].(Report to the People on education,2012)

The state of Kerala is known for its social qualities, especially in education and health compared to other states. The state government of Kerala from the formation of the state, a good amount of fund was reserved for education. Therefore, even in 1961, the literacy rate of Kerala is more than the national average in both urban and rural areas.

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[2] Report to the People on Education 2011-12. Ministry of Human Resource Development Government of India, New Delhi, India. http://mhrd.gov.in/sites/upload_files/mhrd/files/document-reports/RPE_2011-12.pdf

Table 5.1:Literacy Rate in Kerala and India[3] (in per cent)

Year	Urban		Rural		the variation between urban and rural	
	Kerala	India	Kerala	India	Kerala	India
1961	63.79	57.26	53.68	24.24	10.12	33.02
1971	75.91	63.59	68.64	29.92	7.27	33.67
1981	88.85	68.32	82.14	34.81	6.71	33.51
1991	92.32	72.57	89.02	43.56	3.30	29.01
2001	93.28	79.56	90.16	58.41	3.12	21.16
2011	95.08	84.81	93.02	68.66	2.06	16.15

Source:Census of India various years

It is to be noted that the literacy rate of the urban area is overtaken in the rural area. The urban-rural variation of the state Kerala showing a declining trend from the year 1991 to 2011. The disparity between urban and rural parts of Kerala converged to 2.06 whereas in India it was 16.15. The 2011 census shows 95 per cent of urban literacy and 93 per cent of rural literacy in the state Kerala, whereas in India it was 85 and 69 per cent, respectively.

The Kerala state is small; though the literacy rate of Kerala does not represent all districts of the economy. Therefore, the district-wise urban and rural literacy rate gives a clear picture of elementary literacy achieved by the people of each district. In the urban and rural area of all districts, the literacy rate increased over time. However, the slight variation can be seen in almost districts in favour of urban areas. From Thrissur, onwards southern districts have a high literacy rate in both areas compared to the northern districts. In 2011, Pathanamthitta district attained literacy rate in urban areas(97.42 per cent)and least literacy rate attained by Wayanad district(91.63 per cent). Compared to the rural area of each district had a high literacy rate in their urban areas.

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[3] For the purpose of census 2011, a person aged seven and above, who can both read and write with understanding in any language, is treated as literate. A person, who can only read but cannot write, is not literate. In the censuses prior to 1991, children below five years of age were necessarily treated as illiterates.
(https://knowindia.gov.in/profile/literacy.php)

Table 5.2:District-wise literacy rate in Kerala and all India (in per cent)

District/state	Urban		Rural	
	2001	**2011**	**2001**	**2011**
Thiruvananthapuram	92	93.24	87.87	91.98
Kollam	91.51	93.38	91.11	94.1
Pathanamthitta	95.37	97.42	94.78	96.87
Alappuzha	93.73	95.87	93.3	96.72
Kottayam	95.92	94.49	95.8	97.17
Idukki	92.92	95.74	88.46	92.03
Ernakulam	94.31	96.32	92.19	94.34
Thrissur	94.23	95.97	91.5	93.99
Palakkad	89.25	92.45	83.56	87.23
Malappuram	91.18	94.66	89.44	92.67
Kozhikode	93.51	95.47	91.45	94.79
Wayanad	87.15	91.63	85.17	89.22
Kannur	94.12	96.23	91.03	93.88
Kasaragod	88.55	91.67	83.61	88.71
Kerala	**93.28**	**95.08**	**90.16**	**93.02**
India	**79.56**	**58.41**	**84.81**	**68.66**

Source:Census of India various years

Let us examine the relationship between the intensity of urbanisation and literacy rates during the years 2001 and 2011.Some studies on adult literacy have stressed the effects of adult literacy on labour force participation as well as on sustainable economic growth and development (Kerckhoff, Raudenbush, and Glennie,2001)

Figure 5.1:Urban Intensity Index and Literacy rate
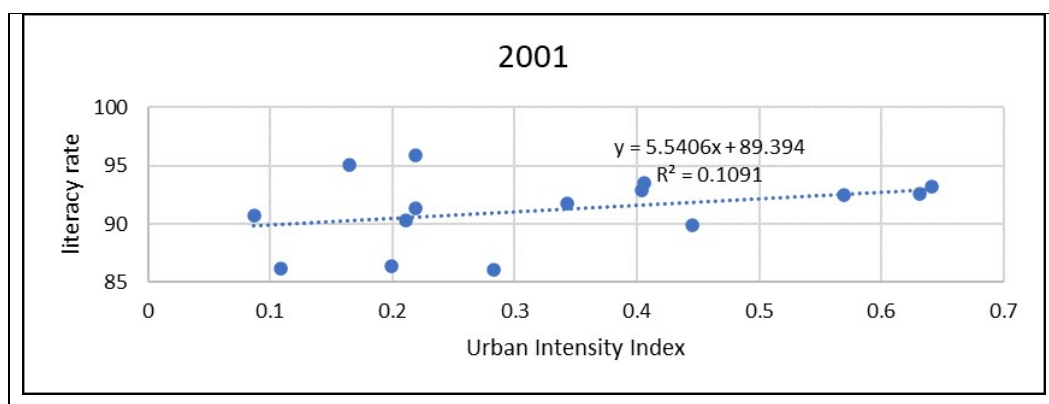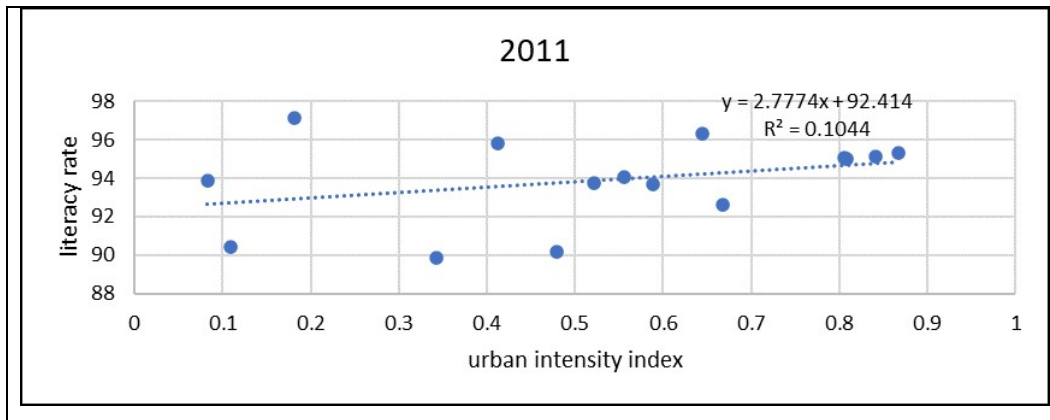
Source:Estimated by the scholar

From the scatter graph, we can find a positive relationship between urbanisation and literacy rates, though the correlation coefficient does not validate such a relationship. The unique features of Kerala show that even in the low level of urbanisation Pathanamthitta, Kottayam districts shows high literacy rates. All districts attained more than 90 per cent literacy in 2011. We can not find any fundamental relationship between the level of urbanisation and the rate of literacy in the Kerala economy.

b)Level of Education

Education in India has always been an essential instrument for social and economic transformation. It is the spine of all national endeavours and the power to renovate human beings into human capital. It cannot shape a sustainable and affluent society without social capital development which mainly is dependent on the health and strength of higher education. In addition to primary and secondary education, higher education is a vital instrument for development and change. Higher education has the immense role of formulating leaders for different walks of life; social, political, economic, cultural, scientific, and technological. It has value in the current knowledge society which contributes directly and indirectly to the wealth of a society (Report to the People on Education 2012)

Table 5.3:District-wise of Level of Education in Kerala and all India Average(per cent)

District/Kerala	Urban 1991			Urban 2001			Urban 2011		
	Up to matric	Higher secondary	Graduate and above	Up to matric	Higher secondary	Graduate and above	Up to matric	Higher secondary	Graduate and above
Thiruvanthpuram	14.40	2.31	1.26	47.30	7.48	15.32	51.03	13.52	22.48
Kollam	15.72	1.78	0.64	52.45	5.75	9.10	58.18	11.63	15.14
Pathanamthitta	16.66	2.36	0.86	52.16	7.15	13.32	53.78	14.73	19.48
Alappuzha	15.51	1.39	0.58	53.21	5.36	8.96	58.53	12.95	15.56
Kottayam	14.97	2.20	1.10	50.68	8.00	13.41	52.03	14.39	21.55
Idukki	15.59	1.95	0.61	48.46	8.05	10.95	50.69	13.85	21.06
Ernakulam	14.74	1.79	0.74	49.26	7.12	13.27	50.02	12.61	24.13
Thrissur	14.47	2.08	0.66	50.60	7.08	10.65	54.08	12.43	18.88
Palakkad	14.30	1.32	0.41	51.97	5.16	8.81	57.14	9.63	15.36
Malappuram	16.06	0.75	0.18	52.45	3.02	4.05	58.38	9.85	8.39
Kozhikode	15.32	1.33	0.39	55.79	5.04	6.37	57.96	11.59	14.35
Wayanad	14.85	0.78	0.44	46.99	4.93	6.80	54.75	10.62	12.87
Kannur	16.26	1.38	0.36	57.82	5.49	5.88	57.11	12.17	13.16
Kasaragod	16.08	1.10	0.30	50.82	4.20	4.95	56.91	10.38	10.23
Kerala	15.20	1.68	0.65	52.12	6.13	9.85	54.54	12.24	17.89
India	12.07	1.81	1.01	38.82	6.87	9.74	47.41	10.48	13.06

Source:calculated from the census tables 1991,2001,socio-economic census tables 2011.

Note:up to matric:-primary,middle,and secondary(up to 10thstandard),higher secondary:-pre-degree/plus two,graduate and above:-diploma,graduation,post-graduation,and professional degrees

Elementary education is essential in offering the basis for the public and accordingly, consistent economic growth with improvements in all human welfare indicators. Primary education contributes to economic growth, reducing economic and social inequalities, empowerment, drop of population growth and fertility rate to child health via mother's education has considered seriously in the significance of elementary education as a fundamental right. The 1991 census shows the percentage of the population who have elementary education and up to 10th class.

The districts of Kerala do not have a significant difference between the urban and rural area in the up to matric level of education. All parts of Kerala lie between 14 to 17 per cent, and the national average was 12 per cent in the urban area and only around 7 per cent in the rural area. After one decade, the drastic changes in

elementary education and up to the 10th standard can be seen in the 2001 census. The percentage of the population up to matric level increased around 50 to 60 proportion in all districts in both areas. The all India average increased to 39 per cent in urban area 28 per cent in the rural area. The 2011 census shows more than half of the total population of Kerala achieved elementary education in both areas. The rural parts of some districts show more up to matriculation education than their urban areas due to that urban areas completed higher education levels after their matriculation.

Higher secondary or pre-graduate educated people of Kerala increases during the period of time. Like elementary education status, the people of Kerala achieved higher secondary education irrespective of urban and rural areas. In 2011, urban Kerala has 12.24 per cent of higher secondary qualified people, whereas in India it had 10.48. Likewise, rural Kerala gained 11.38 per cent of higher secondary completed people whereas in India it was only 5.42 per cent.

According to the Report of The Nation on Education(2012)that higher education contributes significantly to the national development and rising critical capacities of people to face challenges. The census,1991, shows a meagre percentage of higher educated people both in Kerala and in all India. The urban parts of Kottayam and Thiruvananthapuram had around 1 per cent, and other districts achieved only less than 1 per cent of higher education. In rural areas, the status of higher education was not better than in urban areas. The higher education level of Kerala improved over the period. In the 2011 year, it shows 17.89 per cent of the urban population and 9.69 per cent of Kerala attained higher education, whereas the national average was 13 and 3.45 per cent respectively.

Let us examine the level of education across the districts in Kerala. We can check the relationship between the level of education and intensity of urbanisation through a scatter diagram and correlation coefficient.

Figure 5.2:Urban Intensity Index and Level of Education
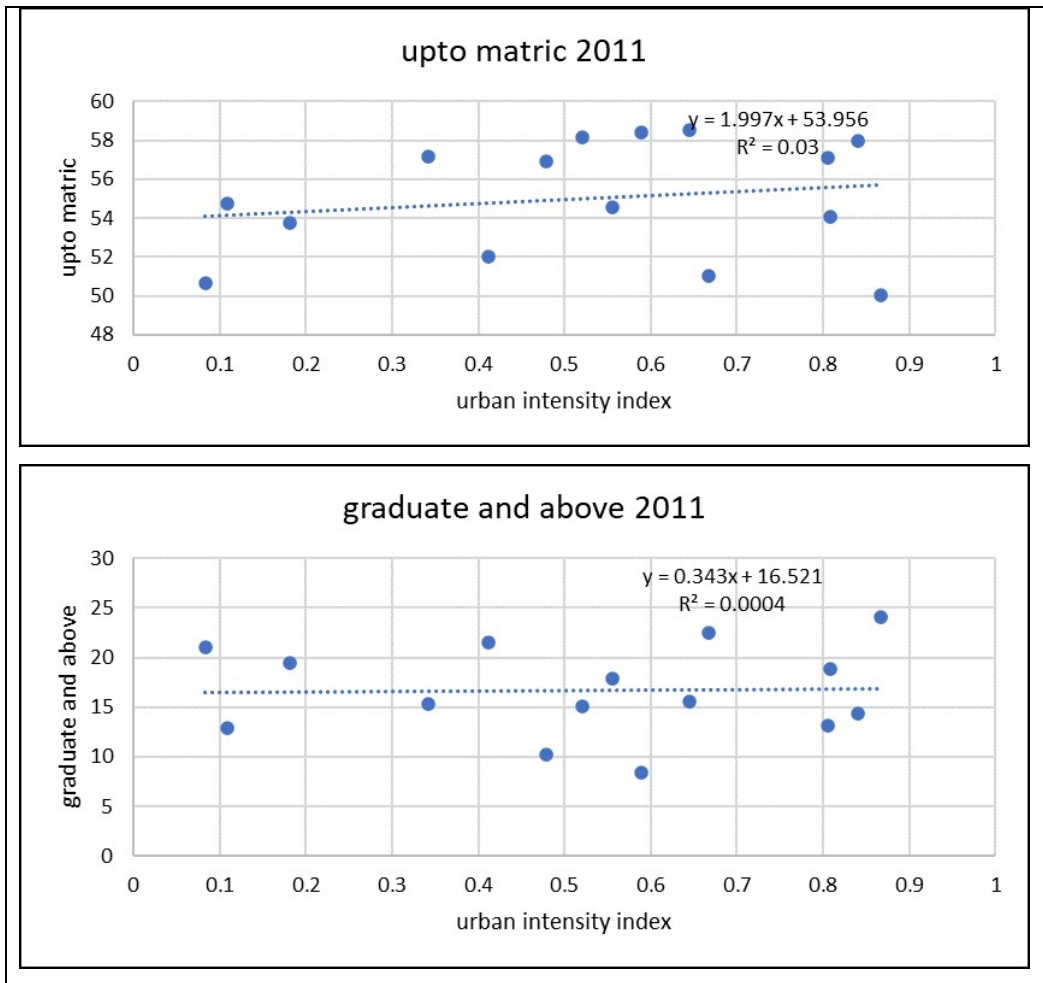
Source:Estimated by the scholar

The scatter graph and correlation coefficient does not support the positive relationship between urbanisation level and education attainment in Kerala. The urban areas of the districts like Ernakulam (24.13 per cent), Thiruvananthapuram (22.48 per cent), Kottayam(21.55 per cent)and Idukki(21.06 per cent) have a comparatively better position by attaining a higher level of education. The urban areas of Malappuram stay extremely back for higher education (8.39 per cent)compared to the other districts. The better performance of rural area for higher education is done in the districts like Ernakulam(14.37 per cent), Kottayam (13.26 per cent), Pathanamthitta (12.49 per cent), Thrissur (11.78 per cent) and Alappuzha(11.28 per cent). As in the urban area of Malappuram district, the rural area(5.53 per cent)had a low percentage of the population who attained higher

education. The district-level performance of level of education better in southern districts from Thrissur to Thiruvananthapuram compared to the northern districts.

5.2.2 Urbanisation and Health Indicators

It is broadly agreed that urbanization has been influential in giving almost bring better economic condition for the country. However, in the process of urbanisation, it has several adverse effects, for instance, the increasing number of health issues and new diseases. It has been noted that certain urban environment can badly affect human beings and nature. Such changes affect the quality of life and well being of the residing people. The urban areas with a high density of population, larger geographical areas, building density, and a complex of economic activities. Here we examine certain health indicators such as sex ratio, infant mortality rate and life expectancy.

5.2.2.1 Urbanisation and sex ratio

Sex ratio is one of the significant indicators of the demographic and cultural index which reflect the status of women in the society.It simply refers to the proportion of females to per thousand males of a region[4].It displays socio-economic,biological and migration features of the population.According to Franklin(1956),sex ratio reflects the socio-economic conditions existing in the area,which can be used as a tool for regional analysis.

a) Overall Sex Ratio

It is to be noted that, generally developed regions have a high sex ratio compared to the less developed regions. One of the main reason was that the female mortality rate was incredibly low to the male mortality rate in developed regions. On the contrary, the less developed nations had a high mortality rate among women due to deficiency of medical facilities, insufficient care given to the female child, poor post-natal care, the higher rate of maternity deaths, as compared to the developed countries.

The urban and rural sex ratio differs from districts to districts and varies over time. The variation in urban-rural sex ratio is primarily the result of migration and disparities in the regional development of the study area. The sex ratio in the rural

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[4] Sex ratio is used to describe the number of females per 1000 of males

area is more than that of urban area. In a highly urbanised regions sex ratio seeing to below. In rural areas, most of the women preferred to work traditional jobs around their locality. But the occupational mobility of males is higher than the females, so they were moving to the urban areas for getting new jobs and opportunities.

Table 5.4:District-wise sex ratio in Kerala and India

Districts/states	1991		2001		2011	
	Urban	Rural	Urban	Rural	Urban	Rural
Thiruvananthapuram	1028	1040	1042	1070	1068	1111
Kollam	1022	1039	1042	1075	1096	1128
Pathanamthitta	1061	1063	1078	1095	1126	1132
Alappuzha	1042	1054	1060	1087	1094	1108
Kottayam	999	1004	1038	1022	1051	1034
Idukki	990	974	1012	992	1036	1005
Ernakulam	1002	998	1024	1014	1029	1021
Thrissur	1069	1091	1079	1096	1112	1099
Palakkad	1046	1064	1056	1068	1063	1068
Malappuram	1034	1055	1061	1067	1101	1096
Kozhikode	1024	1028	1055	1059	1102	1091
Wayanad	947	966	994	995	1051	1034
Kannur	1071	1028	1112	1067	1171	1072
Kasaragod	1045	1023	1070	1042	1113	1059
Kerala	1034	1037	1058	1059	1091	1078
India	893	938	900	946	926	947

Source:Census of India(1991,2001 and 2011)

Over the years from 1991 to 2011, the sex ratio of almost districts in both areas increases in Kerala and all of India. The 2011 census shows that, the lowest sex ratio of the urban area of Ernakulam district (1026) and the highest in the Pathanamthitta district(1126). Generally, rural areas have a high sex ratio compared to their urban area.

Let us examine the relationship between the intensity of urbanisation and the urban sex ratio. The scatter diagram and linear equation shows the positive relationship between the level of urbanisation and sex ratio. Though we get a low value of correlation coefficient due to in Kerala, it is experienced that, the lowest and

highest urbanised districts have high sex ratio in the urban areas and lowest in their rural areas at all periods.

Figure 5.3:Urban Intensity Index and Adult sex ratio
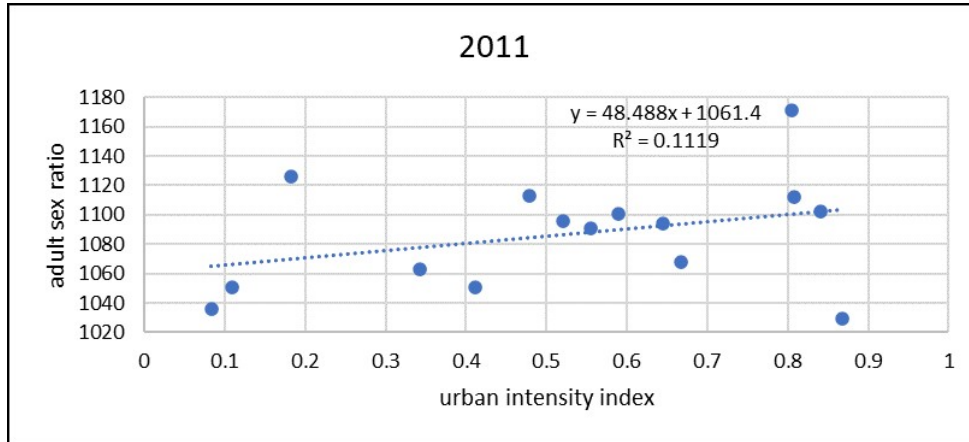
Source:Estimated by the scholar

The census,2011, shows rapid urbanisation in the state, where almost districts experienced a lower sex ratio in their rural areas compared to their urban parts mainly due to the female migration to the urban areas for education, employment, marriage etc. In the cities and towns, there are ample opportunities for females in the textiles sector, shopping malls, telecom sector etc. which are attracting rural females to the urban areas. Compared to the national average, the state of Kerala experiences a good sex ratio at all India level in both areas.

b)Child Sex Ratio(CSR)

Child sex ratio referred to as the ratio of girls to boys in the age of 0-6 year's group[5].According to the census of India, the child sex ratio (0-6 age group) in the national average declined from 962 girls per thousand boys in 1981 to 914 girls per thousand boys in 2011. On the contrary to the national average, the child sex ratio of Kerala from 1991 to 2011 shows increases in both areas. The 2011 shows, out of the 14 districts, eight districts have high rural CSR than urban CSR. The remaining seven districts like Kottayam, Idukki, Ernakulam, Malappuram, Kozhikode, and Kannur have high urban CSR than rural CSR.

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[5] The Child Sex Ratio is defined as the number of females per 1000 males in the age group 0–6 years

Table 5.5 District-wise Child sex ratio in Kerala and all India(0-6 years)

District/state	1991		2001		2011	
	Urban	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**
Thiruvananthapuram	964	964	954	966	962	965
Kollam	969	957	951	962	972	973
Pathanamthitta	952	958	966	967	973	977
Alappuzha	947	946	953	957	947	955
Kottayam	955	947	978	959	968	963
Idukki	954	959	988	968	974	964
Ernakulam	947	951	954	955	961	959
Thrissur	954	949	969	954	947	956
Palakkad	953	971	957	964	959	969
Malappuram	957	958	949	961	966	964
Kozhikode	955	957	958	959	971	967
Wayanad	976	966	972	959	959	965
Kannur	970	968	960	963	974	966
Kasaragod	964	961	957	960	954	966
Kerala	958	958	958	961	963	965
India	935	948	906	934	902	919

Source:Census of India(1991,2001 and 2011)

Several scholars viewed the decline in the child sex ratio as likely to increase that sex ratio at birth showing the growth rate by sex-selective abortion (Gupta and Bhat 1997). Several studies also showed that in India, selective sex abortion is advanced among educated women, urban women, and women with high living standard (Retherford and Roy,2003 Arokiasamy 2004). The census 2011 show that the child (0-6 years) population is declining in all districts except in Malappuram. Malappuram also has the highest growth rate of the child population(4.08 per cent)while Pathanamthitta has the lowest (-23.76 per cent). The census estimates the CSR in Kerala is 964. Pathanamthitta district with 976 has the highest and in Thrissur with 950 has the lowest CSR.

Let us examine the child sex ratio and intensity of urbanisation in the districts of Kerala by using the scatter diagram and correlation coefficient. The linear equation and scatter graph shows a negative relationship between urban child sex ratio and level of urbanisation which supports the earlier studies, though the correlation coefficient does not support that relationship existence in Kerala.

Figure 5.4:Urban Intensity Index and child sex ratio

child sex ratio 2011

$y = -7.9714x + 967.53$
$R^2 = 0.0525$
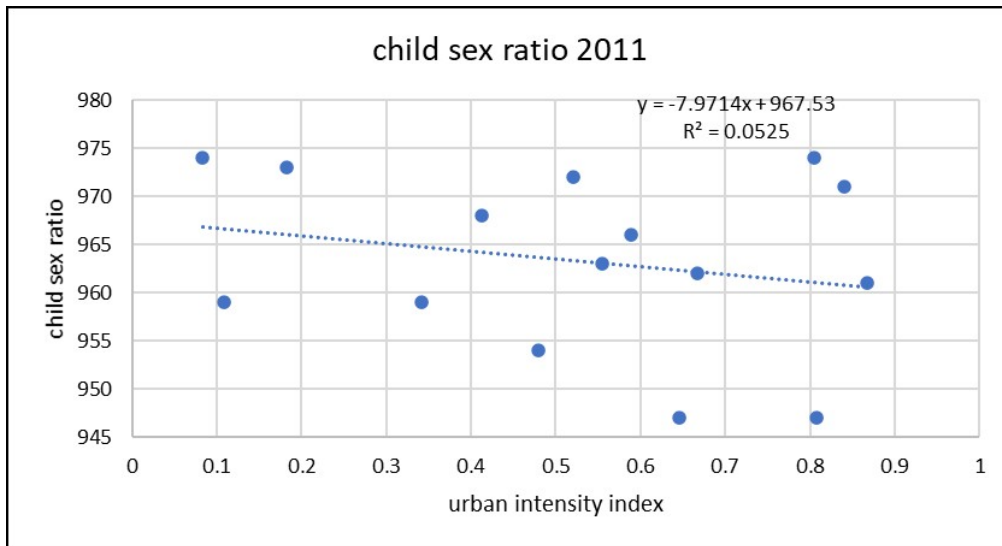
Source:Estimated by the scholar

Additionally, there is a provision of encouragements in case of accepting a girl child would affect positively in the long term. In short,son-preference, which is recognised by various researchers in India, must be eradicated from Indian society. If not, the current declining trend of sex ratio, especially among the children may produce some demographic and socio-cultural challenges in future.

5.2.2.2 Urbanisation and Infant Mortality Rate

Children are the valuable wealth of a nation; hence, the decline in infant and child mortality is expected the essential objective of the Millennium Development Goals (MDG). Infant mortality rates show the socio-economic condition and the quality of life of the population. The Infant Mortality Rate(IMR) is referred to as the probability of a live-born child dying earlier at its first birthday is identified as one of the most sensitive and generally used indicators of social and economic development.

The state Kerala achieved a declining trend of infant mortality rate over time in both areas.The all India average of IMR shows a higher rate,though the IMR is decreasing over time.In the urban areas,IMR is comparatively better than the rural area.Rural children had higher mortality rates than their urban areas(Brockerhoff 1995)

140

Table 5.6: Annual Estimates of the Infant mortality rate of Kerala and India

year	Kerala			India		
	Urban	Rural	Total	Urban	Rural	Total
1971	48	60	58	82	138	129
1981	24	40	37	62	119	110
1991	16	17	16	53	87	80
2001	8.6	12.2	11.3	42	72	66
2011	9.4	12.9	12.1	29	48	44

Source: SRS report. Govt. of India

In 2011, the SRS estimated the IMR of Kerala 12.1 with 9.4 in the urban and 12.9 in rural areas, whereas, in all India IMR was 44 with 29 in urban and 48 in the rural areas. The state of Kerala is well-known for its excellent social indicators, including low IMR, which indicates the social and health performance of the Kerala economy.

Table 5.7: Infant Mortality Rate in Kerala and India(2001,2011)

District/state	2001	2011
Thiruvananthapuram	40	30
Kollam	42	29
Pathanamthitta	40	29
Alappuzha	42	31
Kottayam	36	27
Idukki	42	27
Ernakulam	40	24
Thrissur	35	24
Palakkad	41	23
Malappuram	33	23
Kozhikode	33	34
Wayanad	42	27
Kannur	33	22
Kasaragod	34	24
Kerala	37	26
India	68	58

Source: Indirect Estimates of District wise IMR and Under 5 Mortality using Census 2011 data–Draft, NHSRC

The Sample Registration System (SRS) under the careful vigilance of the office of the registrar general of India has been providing annual estimates of infant mortality

along with other vital rates of states and national level. National Family Health Survey(NFHS) also gives the views of child mortality by asking the question to women of reproductive ages about their childbirth histories before the date of survey, but this is also not useful for calculating at the district level. Indirect estimates of child mortality presented in this report are obtained by applying the Brass method for estimating child mortality by using the information on children surviving and children ever born in the census data 2001 and 2011. Urban and rural data of IMR is available in the Civil Registration System(CRS)of the Government of Kerala. Still, they are not a reliable source that shows deviation from SRS reports to a great extent. So, we use the indirect estimation of IMR from the census data, which are the more compatible data source for the district level of analysis. It is assumed that all districts of Kerala and the state average shows decreasing their IMR from the year 2001 to 2011 period. In the 2011 census, the state average of IMR was 26, and in all India was 58. The highest IMR reported in Kozhikode and the lowest in the Kannur district. Above all, the state Kerala achieved the lowest IMR among the other states of India.

Let us examine the relationship between the level of urbanisation and the infant mortality rate. We are available only state-wise data for urban and rural infant mortality rate. So here we used state Kerala and all India average as for the urban infant mortality rate and urban intensity index for the measurement of urbanisation.

Figure 5.5:Urban Intensity Index and Infant Mortality Rate
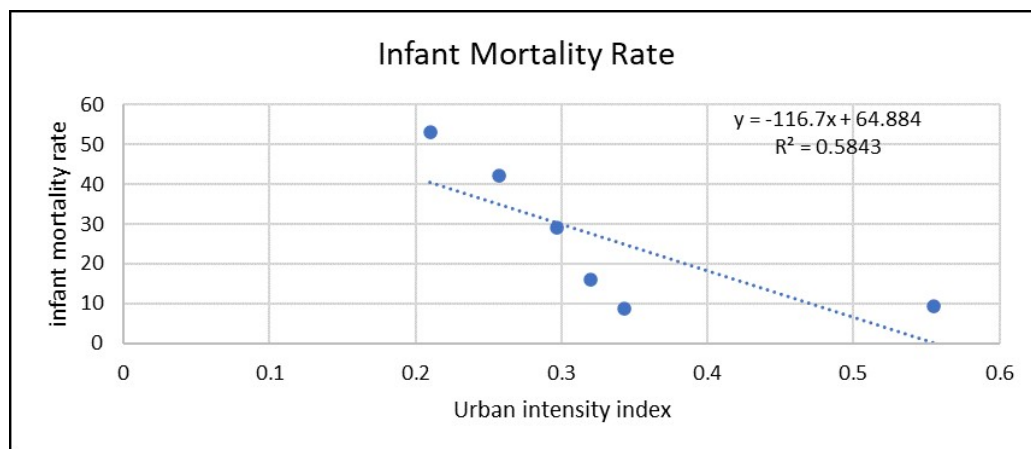
Source:Estimated by the scholar

From the scatter graph we got a negative association between urbanisation and urban infant mortality rate with a significant correlation coefficient. It indicates that urbanisation or development brings more health facilities in urban areas that reduce the mortality rates of infants compared to rural areas.

5.2.3 Urbanisation and Housing and Basic Amenities

There is no doubt that food, clothing and housing are the primary necessities of life. The availability of these basic needs with sufficient quantity and quality should improve the physical fitness, productivity and efficiency of people The basic human needs approach for development highlights offering primary material needs to people (Goldstein 1985, Hicks and Streeten1979). Hence, housing and basic amenities is an essential part of human resource development. Accessing basic amenities is an important feature of the quality of urbanisation. The amenities like electricity, water, sanitation, and clean cooking fuel like LPG are the critical factors of better living conditions and health of the urban people (Clegg and Garlick 1979). The present section tries to study the progress of Kerala concerning significant basic human needs, and other valuable assets. Such as access to electricity, safe drinking water facility, using LPG as cooking fuel and toilet facility, assets like telephone or mobile phone, computer or laptop, and vehicles like two-wheeler or four-wheeler. The census of India provides district-wise and urban-rural wise information about these variables.

5.2.3.1 Urbanisation and Housing Conditions

In India, the problem of housing is severe, there exists a large gap between supply and demand for houses. Rapid urbanisation also accompanied by large population size and high density which enhances the problem of housing more seriously. Housing condition is an important indicator of well-living of persons from the view of individuals and societies. Quality houses have an instrumental value and it affects the physical and mental conditions of humans, and their socio-economic performances. Therefore, housing has been considered a basic necessity of life.

The 2011 census witnessed the rapid growth of urbanisation in the country, especially in few states like Kerala was accounting for a high rate of urbanisation. Kerala is experiencing a high density of population and a high density of buildings per sq. km of the land area compared to all India level. However, it is viewed that,

Kerala is a forwarding state which reducing the number of deprived houses and urban-rural disparities. (Kannan and Khan 2016).

The census reports on housing provide wide information on census houses, residential houses, housing conditions, number of rooms, kitchen details, basic amenities etc. The present section focused to examine the basic condition of a residential housing structure in terms of good, livable and dilapidated.[6].

Table 5.8: Residential Housing Condition in Kerala and India (per cent)

| Districts | URBAN | | | | | |
| | 2001 | | | 2011 | | |
	Good	Livable	Dilapidated	Good	Livable	Dilapidated
Thiruvananthapuram	61	31	8	68	26	6
Kollam	60	31	9	70	24	5
Pathanamthitta	67	28	5	74	24	3
Alappuzha	63	29	9	67	27	7
Kottayam	60	35	5	71	26	3
Idukki	63	31	6	75	23	1
Ernakulam	72	24	4	75	22	3
Thrissur	57	37	6	68	28	4
Palakkad	58	37	5	69	28	3
Malappuram	66	30	4	76	21	3
Kozhikode	69	26	5	77	19	4
Wayanad	60	30	10	55	40	6
Kannur	69	27	3	79	19	2
Kasaragod	63	31	6	79	18	3
Kerala	65	29	6	72	24	4
All India	64	32	4	69	28	3

Source:Census of India(2001,2011)from,H series; the Tables on

Houses,HouseholdAmenities and Assets.

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[6] The term '*good*' implies that there is no need to any repair at the time of survey , '*livable*' indicates that few minor repairs are only required and '*dilapidated*' indicates that the worst condition of the house.

We can see significant variation between urban and rural areas in terms of residential housing condition both at all India level and in Kerala state. However, the gap is wider in the national average than in the Kerala state. In 2001, 64 per cent of urban households have a good condition of houses and increased to 69 per cent in 2011 and in the state, it was 65 per cent in 2001 and increased to 72 per cent in 2011. It can be noted that urban households with good housing condition increased 7 percentage points in Kerala and only 4 points at all India level during 2001 - 2011. Similarly, the worst or dilapidated houses of urban households show declining during the period (2001-11) and it was 3 per cent at the national level and 4 per cent in Kerala. The rural households of Kerala improved their housing condition, such as the houses in the 'good' category increased by 8 percentage points and reached 61 per cent in 2011. Whereas, at the national level it increased only at 1 percentage point and reached 46 per cent. The percentage of worst houses in rural areas are declined both at the national level (7 per cent in 2011) and at the state level (6 per cent in 2011) during the 2001-2011 period.*(Annexure A 5.1)*

In 2001, 72 per cent of urban households had good condition houses in Ernakulam district followed by Kozhikode (69 per cent) and Kannur district (69 per cent). After one decade, all districts showing some improvements in the proportion of good condition houses in their urban areas. Among the districts, the urban areas of Kozhikode (79 per cent) and Kannur (79 per cent) got first position and least in Wayanad district (55 per cent) with respect to the proportion of good condition houses. Comparing to the urban area, the rural area had a small proportion of good conditional houses and more houses under the dilapidated category.

Next, we try to examine the relationship between the intensity of urbanisation and good condition houses. Here we used the urban intensity index and the proportion of households with good condition houses in the urban areas of each district in the year 2001 and 2011.

Figure 5.6:Urban Intensity Index and Good Condition Houses
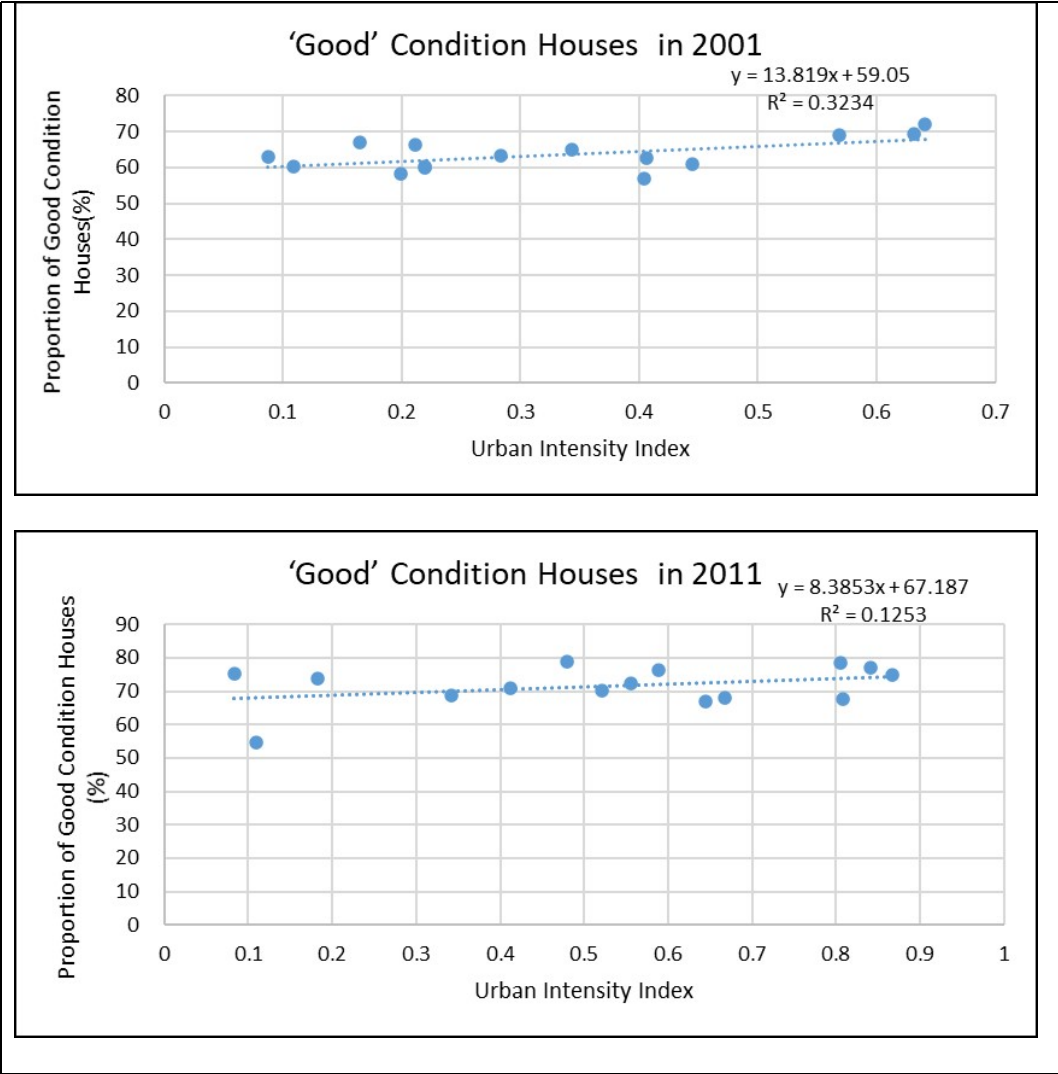
Source: Estimated by the scholar

The scatter graph and linear equation show a positive relationship between the intensity of urbanisation and the condition of houses. The correlation coefficient in both years does not significantly support the relationship. This is due to some of the low urbanised districts like Idukki, Pathanamthitta, Kottayam have also a high proportion of good condition houses in their urban areas like as in the high urbanised districts like Ernakulam, Kozhikode and Kannur. This indicates that in the state, the housing conditions are better off during the period of time.

5.2.3.2 Urbanisation and Access to Electricity

It is regarded as essential infrastructure for household and influences the living quality of individuals. According to the 1991 census,three-fourth of urban India households have access to electricity facility. At that time urban Kerala has only 67.65 per cent of households, enjoy electricity facility, and nine districts, especially the northern districts, are below the state average. The urban parts of Thiruvananthapuram, Ernakulam, Thrissur, Kottayam, and Kollam achieved more than the state average. The urban parts of India and the state improved the accessibility of electricity over time. According to the 2011 census, India's 93 per cent urban households accessed electricity, and the state achieved 97 per cent. In the urban areas of all districts except Wayanad attained more than 95 per cent of households access electricity.

Table 5.9:Households having electricity in Kerala and India(per cent)

District	Urban			Rural		
	1991	2001	2011	1991	2001	2011
Thiruvanthpuram	74.28	86.38	96.64	44.83	69.46	92.27
Kollam	70.84	86.26	97.18	45.52	70.30	93.49
Pathanamthitta	63.18	82.21	96.31	48.51	70.46	94.26
Alappuzha	59.55	79.77	96.91	50.62	72.56	95.27
Kottayam	72.13	88.78	98.20	53.26	75.78	95.93
Idukki	58.43	80.50	98.35	30.76	55.60	87.94
Ernakulam	73.41	90.38	98.26	57.73	80.12	95.66
Thrissur	72.48	85.27	97.66	52.51	74.19	95.73
Palakkad	62.20	79.55	97.02	34.21	57.19	92.41
Malappuram	54.85	74.68	95.90	36.35	62.67	92.99
Kozhikode	60.57	79.66	95.57	30.56	55.71	90.46
Wayanad	45.38	60.77	88.76	17.13	41.23	80.53
Kannur	65.50	84.26	97.59	27.38	51.28	88.07
Kasaragod	59.59	77.21	95.92	33.35	52.40	84.37
Kerala	67.65	84.34	97.01	41.95	65.53	92.10
India	75.78	87.5	93.2	30.54	43.0	55.3

Source:census of India(1991,2001,2011)from the Tables on Houses,Household Amenities and Assets,H series

In the 1991 census period, the condition of the rural area was not satisfactory in terms of accessibility of electricity both in India and the state where almost half or less than half of households could not access electricity. The condition slowly improved in rural India and gained 55.3 per cent of households accessed electricity. But the state of Kerala achieved significant improvement and obtained 92 per cent of rural household electrified. Some districts in rural parts of Kerala attained below 90 per cent of electrification, such as Wayanad, Kasaragod, Idukki, and Kannur. However, the state gained commendable achievement in terms of household electrification over time.

Let us examine the relationship between the level of urbanisation and accessing to electricity by urban households in the fourteen districts of Kerala. Here we used the urban intensity index and the percentage of urban households who access electricity for lighting in the years 1991 and 2011. Earlier studies found that big cities and high urbanised states have good electrification compared to other low urbanised states.

Figure 5.7:Urban Intensity Index and Electricity
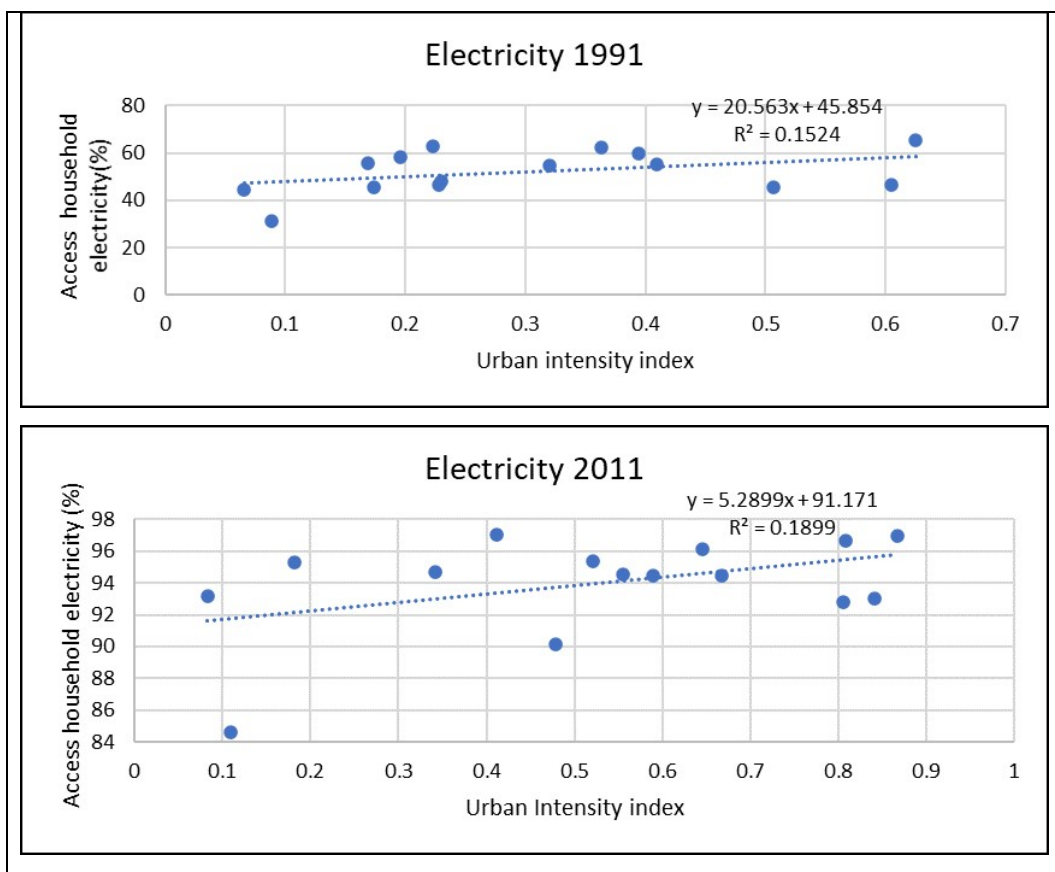
Source:Estimated by the scholar

The scatter graph and linear equation show some positive relationship between the intensity of urbanisation and the accessibility of household electricity. The correlation coefficient in both years does not support the relationship in Kerala. Some of the low urbanised districts like Idukki, Pathanamthitta, Kottayam had more accessibility to electricity compared to high urbanised districts like Kozhikode and Malappuram. This indicates that the state has more equal accessibility of electricity without concerning the level of urbanisation.

5.2.3.3 Urbanisation and Safe Drinking Water

Gain access to safe drinking water considered a basic need for survival and ease from a whole host of illnesses all over the world. The Constitution of India, in the provision of Article 47, has ensured that the states would afford clean drinking water which improves public health. Based on distance travelled to collect water, the Census of India classified households into three categories [7] ('water within the premises','near the premises' and 'away from the premises').'Within the premises' refers to the availability of water within the premises where households live. Here we study the classification of safe water availability 'within the premises'.The census of India provides such information in 2001 and 2011.

The accessibility of safe drinking water within the premises gives more welfare and comforts to the households. The urban households of all India had only 65.40 per cent accessed drinking water within the premise in 2001 and improved to 71.2 per cent in 2011. In the state of Kerala, 79 per cent of urban households had safe drinking water within their premises in 2001 and it increased to 83.26 per cent in 2011.

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[7] *Within the premises*: If the source was located within the premises where the household lived. ii) *Near the premises*: If the source was located within a range of 100 metres from the premises in urban areas and within a distance of 500 metres in the case of rural areas. iii) *Away from the premises*:If the drinking water source was located beyond 100 metres from the premises in urban areas and beyond 500 metres in rural areas.

**Table 5.10:Households Availability of Safe Drinking Water'within the premises'
in Kerala and India(per cent)**

District/State	Urban		Rural	
	2001	**2011**	**2001**	**2011**
Thiruvananthapuram	81.78	86.09	76.28	82.14
Kollam	83.51	86.60	79.90	85.04
Pathanamthitta	82.14	86.10	76.54	78.93
Alappuzha	70.51	75.12	66.70	70.00
Kottayam	76.71	80.76	66.17	69.80
Idukki	69.56	83.69	38.02	39.47
Ernakulam	76.98	81.35	70.76	78.07
Thrissur	82.99	85.48	75.98	80.27
Palakkad	72.70	79.24	56.22	69.28
Malappuram	78.68	84.66	75.87	78.49
Kozhikode	78.14	82.03	71.61	73.98
Wayanad	76.57	74.07	53.98	59.70
Kannur	82.41	85.74	68.66	73.09
Kasaragod	77.88	84.70	63.40	65.90
Kerala	78.93	83.26	69.11	72.87
India	65.40	71.20	28.70	35.00

Source:Census of India(2001,2011)from the Tables on Houses,Household Amenities and
Assets,H series

Rural India was in a worse position, which provides only 28 per cent of
households drinking water within their premise in 2001 and slightly increased to 35
per cent in the 2011 census period. On the contrary to rural India, rural Kerala
accessed 69 per cent of households drinking water within their premises in 2001 and
it improved to 73 per cent in the 2011 census.

In all districts, safe drinking water availability increases both urban and rural
areas. According to 2011 census data, in the urban areas, more than 80 per cent of
households have safe drinking water within their premises excepts the districts like
Alappuzha, Wayanad, and Pathanamthitta. The availability of safe drinking water
within their premises more attained by the households of urban areas compared to
rural areas.

It is found that urbanised areas have more accessible drinking water compared to rural areas. Let us examine the relationship between the level of urbanisation and access to safe drinking water within the premises by urban households in the fourteen districts of Kerala. Here we used the urban intensity index and the percentage of urban households who accessed safe drinking water within the premises in the years 2001 and 2011. The scatter diagram and correlation coefficient are illustrated in figure 5.8.

Figure 5.8:Urban Intensity Index and Safe Drinking Water
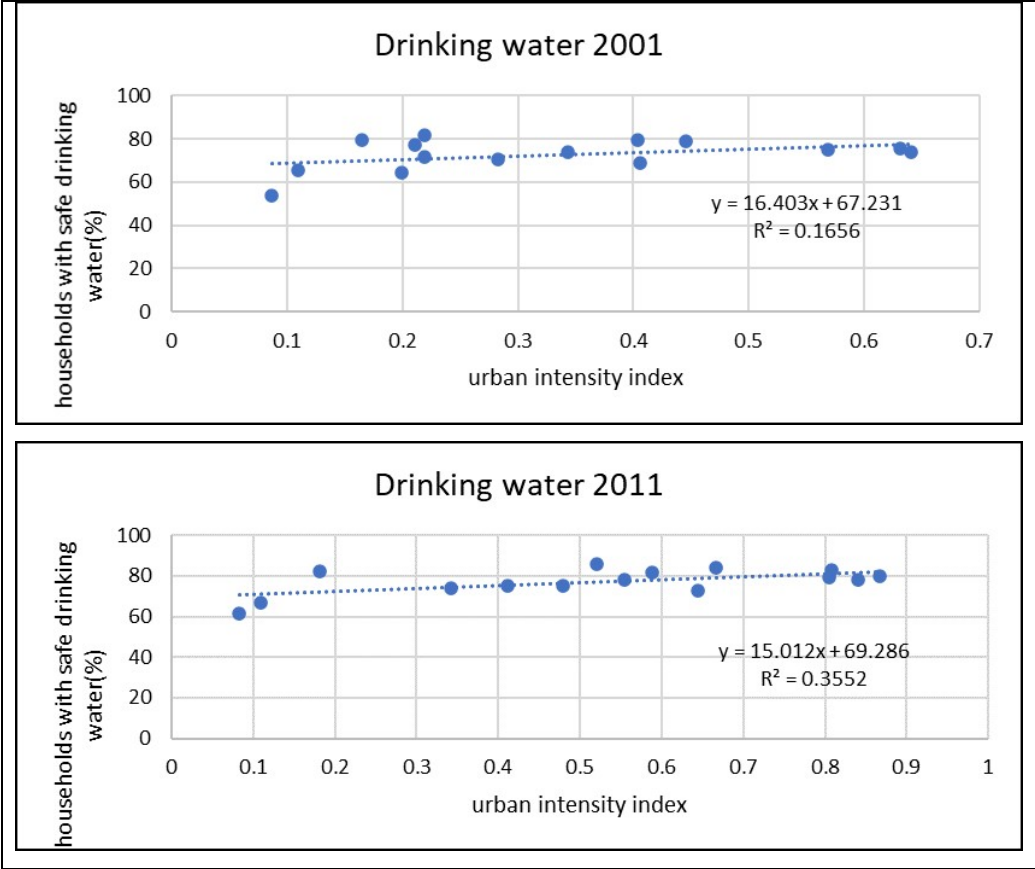
Source:Estimated by the scholar

We can examine the association between the level of urbanisation and the accessibility of safe drinking water among the districts in Kerala. We get a positive relationship between the level of urbanisation and the accessibility of safe drinking water. However, we did not get a significant correlation coefficient between the level of urbanisation and the accessibility of urban households safe drinking water. In Kerala, all districts have similar performance without concerning the level of urbanisation.

151

5.2.3.4 Urbanisation and LPG used for cooking fuel

Household Air Pollution (HAP) from the ineffective use of fuel energy considered as one of the significant risk factors on the health and environment.Majority of people especially in the less developed countries,still depend on solid fuels like wood,animal dung,charcoal etc, which produces highly polluting elements. There are so many diseases related to respiratory issues,cardio-vascular illness,cancer etc[8] (WHO 2018).Urbanisation considered as an important factor for increasing energy demand. We can see the quantity and types of fuel energy used by urban and rural households continue to change over the period of time.Liquefied Petroleum Gas (LPG) is used as a major fuel for cooking in India.Its main attractions are easy availability,less polluted,clean fuel,safe to use and saves time.The present section tries to examine the performance of urban and rural households, who use LPG as the main cooking fuel in the state and all of India.

Table 5.11:Households used LPG Used for cooking fuel in Kerala and India(%)

Districts	2001		2011	
	Urban	Rural	Urban	Rural
Thiruvananthapuram	40	8	56	25
Kollam	34	10	53	29
Pathanamthitta	42	21	60	38
Alappuzha	26	17	57	46
Kottayam	42	18	57	32
Idukki	35	14	70	17
Ernakulam	53	20	76	37
Thrissur	35	16	51	35
Palakkad	41	10	52	21
Malappuram	21	6	23	15
Kozhikode	21	5	28	8
Wayanad	44	10	45	11
Kannur	23	7	28	9
Kasaragod	30	9	44	18
Kerala	35	12	48	25
All India	48	6	65	11

Source:Census of India(2001,2011)from the Tables on Houses,Household Amenities and Assets,H series

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[8] World Health Organisation (2018)Household air pollution and health.https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health

According to the 2001 census,48 per cent of urban households in India used LPG, whereas, in the state of Kerala it was 35 per cent. In 2001, 6 per cent of rural households used LPG in the nation and 12 per cent in the state. It can be noted that the usage of LPG increased both in urban and rural areas. In India, the use of LPG in urban households increased to 65 per cent and in Kerala, it was 48 per cent in 2011. At the same period, the rural households of India used 11 per cent LPG and it was 25 per cent in Kerala.

The usage of LPG as the main source of cooking energy differ in districts. The Ernakulam district has the highest proportion of urban households using LPG as fuel energy (53 per cent in 2001 and 76 per cent in 2011). The households of central and southern districts of Kerala use LPG as cooking fuel both in urban and rural areas relatively more than in the households of southern districts. The Kozhikode and Malappuram districts witnessed rapid urbanisation, though the usage of LPG as cooking fuel is small compared to other highly urbanised districts.

Figure 5.9:Urban Intensity Index and LPG used for cooking fuel
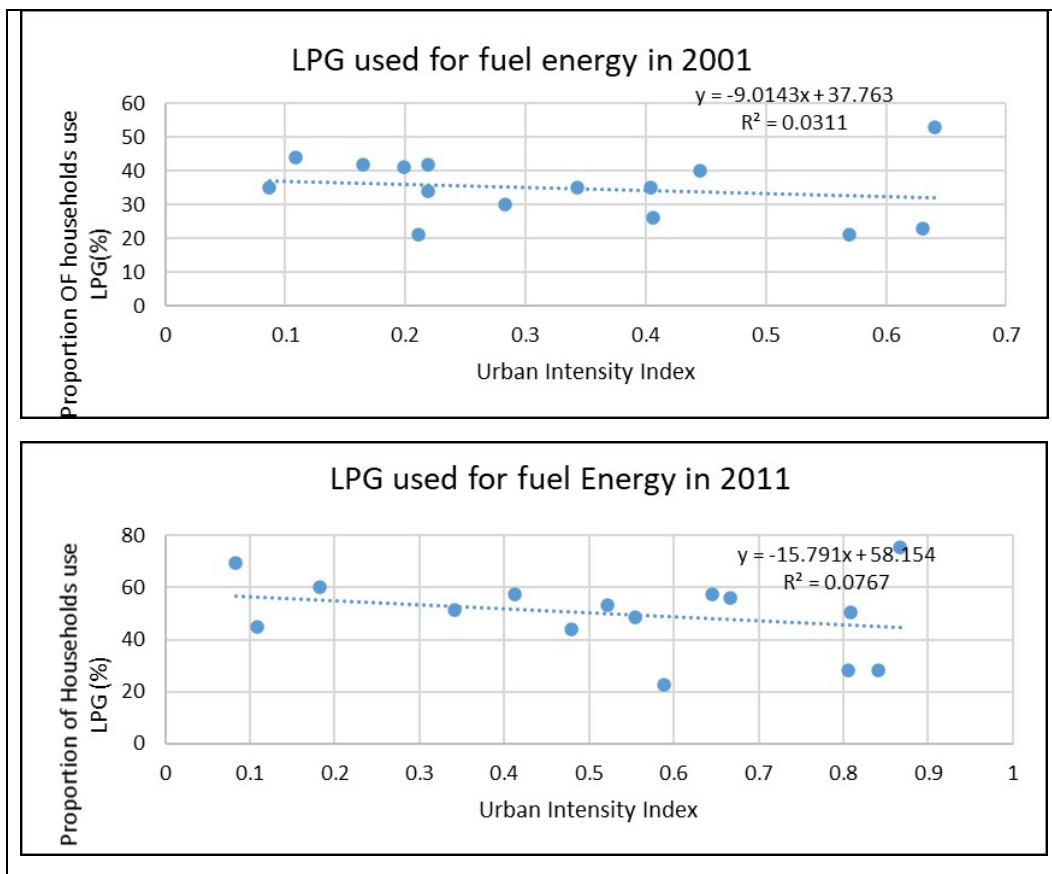
Source:Estimated by the scholar

It is noted that the consumption of LPG is found to be more in urban areas than in rural areas. Let us examine the relationship between the level of urbanisation and LPG used as major cooking fuel by urban households in the fourteen districts of Kerala. Here we used the urban intensity index and the percentage of urban households who consumed LPG as major energy for cooking in the years 2001 and 2011.

While examining the association between the level of urbanisation and LPG use for cooking, we got a negative relationship between the variables. However, we did not get a significant correlation coefficient between the level of urbanisation and LPG consumption of urban households. Here, we can see that in the state all districts have similar performance with regard to the level of urbanisation. However, It should be noted that the households in the urban area used LPG as the main fuel for cooking energy than in rural areas where more solid fuels are used.

5.2.3.5 Urbanisation and Toilet Facility

Accessing the toilet facility is one of the vital components of cleanliness which is a fundamental factor of public hygiene and well-being in India. It pays to a clean and better situation, social development and makes substantial economic benefits. The matter has economic implications and the problem of human dignity too. Together with this felt, the necessity of sanitation, especially in toilet facility, the Government of India started an entire sanitation campaign in 1999.

It should be ensuring that good sanitation facility which has a crucial role to play in individual and social life and one of the basic determining factors for the quality of life and human development index. There is a direct connection between water, sanitation, and health. Insufficient access to safe water and sanitation services, with weak hygiene habits, tends to damage the general health condition of the people, particularly in children. The consequences of poor sanitation services on health bring the serious incidence of morbidity and mortality is increased, mainly in children. The shortage of toilets consistently results in undernourished children and spread diseases, but better sanitation amenities show positive indicators. For example, states

like Sikkim and Kerala have better access to toilets, have relatively lower levels of malnourished children[9](Manasi and Latha 2017)

Table 5.12:Households having Toilet facility in Kerala and India(per cent)

District/State	Urban			Rural		
	1991	2001	2011	1991	2001	2011
Thiruvananthapuram	81.67	90.86	96.32	47.90	78.60	91.85
Kollam	77.38	90.78	96.42	47.43	80.97	93.00
Pathanamthitta	62.30	86.57	96.02	55.93	81.22	93.65
Alappuzha	67.68	87.81	94.67	55.93	76.93	90.93
Kottayam	77.62	91.61	98.15	55.93	84.23	95.98
Idukki	58.86	91.12	99.27	55.93	75.24	88.66
Ernakulam	78.78	94.81	98.31	55.93	89.45	96.89
Thrissur	79.57	94.63	98.32	55.93	89.46	96.90
Palakkad	56.03	82.72	94.87	55.93	66.11	88.17
Malappuram	66.07	92.28	98.45	55.93	86.84	96.50
Kozhikode	72.50	95.09	98.24	55.93	90.28	96.98
Wayanad	54.83	87.54	95.30	55.93	85.06	91.65
Kannur	61.62	92.76	98.45	55.93	82.17	96.26
Kasaragod	57.58	86.42	96.57	29.35	64.12	88.84
Kerala	72.66	92.02	97.43	44.07	81.33	93.23
India	63.85	73.7	83.4	9.48	21.9	30.7

Source:Source:Census of India(2001,2011)from the Tables on Houses,Household Amenities and Assets,H series

According to the 1991 census, around 36 per cent of urban households of urban areas did not access toilet facility in India, and the level of access to toilet facility increased to 83 per cent in 2011. At the same time, the state of Kerala had located toilet facility around 73 per cent of urban households in 2001 and it improved to 97 per cent in the 2011 census. All districts also have the same improvement in the 2011 census, comparing to 1991. The situation of rural India in case of accessibility of toilet facility is not satisfiable even in the census 2011. However, the condition better from 9 per cent to 31 per cent in 2011. But the state of Kerala achieved a commendable improvement and 93 per cent of rural household accessed toilet facility in the 2011 census. The urban-rural variation for accessing

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[9] Manasi, S., and Latha, N. (2017). *Toilet Access Among the Urban Poor: Challenges and Concerns in Bengaluru City Slums*. Institute for Social and Economic Change. https://ideas.repec.org/p/ess/wpaper/id12090.html

toilet facility can be visible in all districts, but the variation is different in different districts. However, the urban-rural gap shows a decreasing trend over time.

Let us examine the association between intensity of urbanisation and percentage of household availability of toilets. It is recognised that household amenities and level of urbanisation positively related(Bhagat 2011).

Figure 5.10:Urban Intensity Index and Toilet Facility
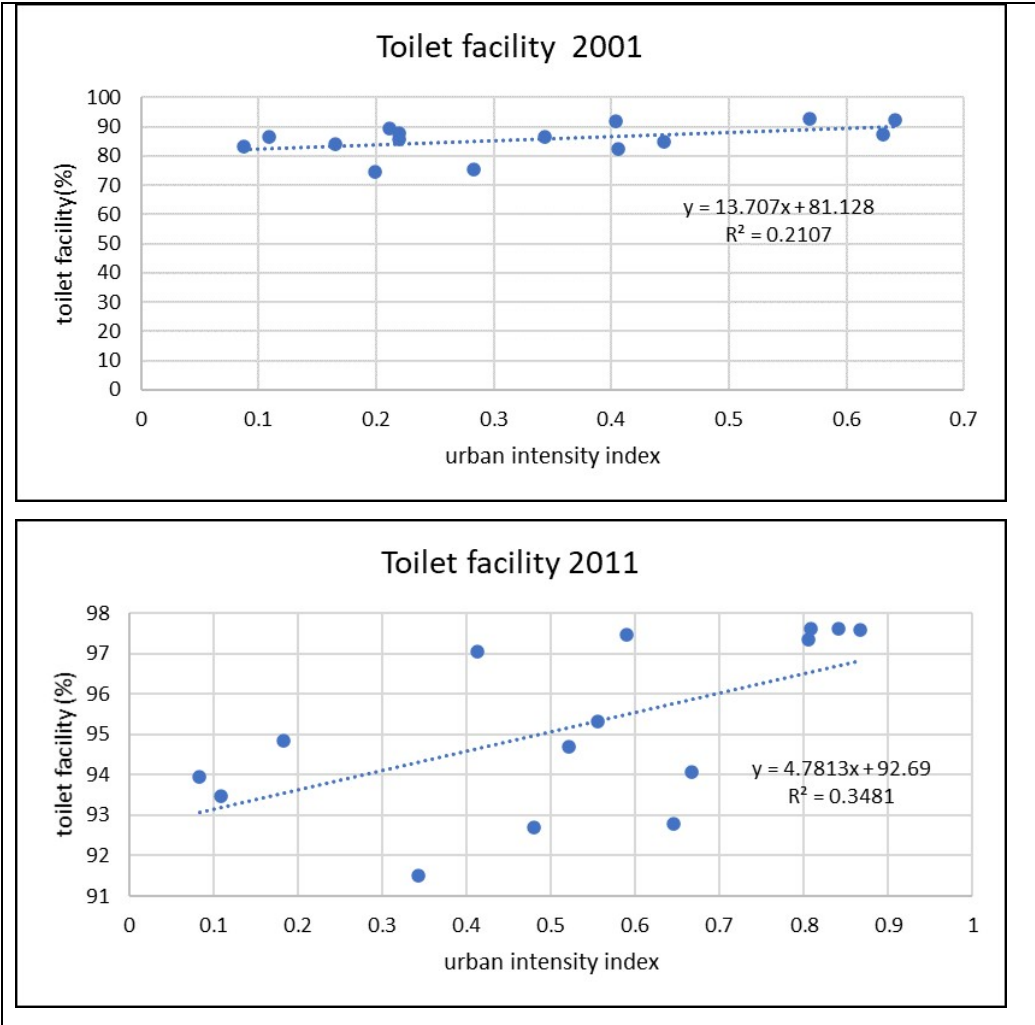
Source:Estimated by the scholar

The scatter graph and linear equation give a positive relationship between the level of urbanisation and the availability of household toilet facility. Though we get an insignificant correlation coefficient in Kerala there is no significant relationship found in these variables. It indicates that even with the low level of urbanisation some districts attain a better level of household toilet facility.

5.2.3.6 Urbanisation and the Information and Communication Technologies

From an economic perspective, information and communication technology (ICT) is observed as an essential production factor by the rationale of the knowledge-driven economy. Many studies consider that knowledge, research, innovations and inventions, and technological changes enhance important factor for economic growth. Here we try to examine the accessibility of telephone or mobile phone connections and desktop or laptop in the districts of Kerala and all India average.

5.2.3.6.1 Urbanisation and Telephone or Mobile phone

During the pace of development and modernisation,the whole world is narrowed with technological improvement.The communication facilities help society for faster development.Now the world is speedy;the demand for a landline telephone connection is decreased and arise a world for a smartphone mobile.The people of India are on the way of such a communication world.To be precise,more urban residents may use a smartphone than rural residents.Moreover,people living in urban areas may drive less than those residing in rural areas because of better accessibility to various services as well as the public transport system (Schleife,2010).

Table 5.13:Household accessibility of telephone or mobile phone in Kerala and India(per cent)

Districts/state	Urban		Rural	
	2001	2011	2001	2011
Thiruvananthapuram	36.07	59.21	13.94	59.83
Kollam	26.31	58.60	14.59	55.55
Pathanamthitta	39.75	51.93	26.40	51.67
Alappuzha	19.86	61.54	16.54	57.40
Kottayam	37.36	51.24	23.28	52.03
Idukki	29.85	57.43	11.45	63.72
Ernakulam	33.69	60.11	25.07	51.82
Thrissur	32.48	55.97	19.97	56.77
Palakkad	28.96	61.83	9.50	63.59
Malappuram	18.61	63.70	10.72	65.64
Kozhikode	24.38	58.93	11.54	54.83
Wayanad	21.02	61.01	7.88	58.23
Kannur	24.20	58.36	13.74	54.82
Kasaragod	26.33	52.90	14.96	54.09
Kerala	29.26	58.89	15.66	57.87
India	23.0	82.0	3.8	54.3

Source:Census of India(2001,2011) from the Tables on Houses,Household Amenities and Assets,H series

The modern communication means of telephone and mobile phone is dominated in the Indian economy.In the 2001 census,the land phone connection is governed and accessing mobile phone is a luxury.So,urban India obtained only 23 per cent of households had a telephone,and in the state,Kerala was 29.26 per cent..The rural households of India have only 3.8 per cent and in Kerala was 15.66 per cent.

According to the 2011 census, in India,82 per cent of urban households and 54.3 per cent of rural households accessed telephone or mobile phone and it was in Kerala 59 per cent and 58 per cent respectively. Furthermore, in 2011 census data says that more individuals had accessed to telephones or mobile phone (54.3 per cent) than toilets in rural India(30.7 per cent).

Let us examine if there any relationship exists between intensity of urbanisation and accessibility of mobile phone and landline connections in the districts of Kerala.

Figure 5.11:Urban Intensity Index and Landline/mobile phone connection
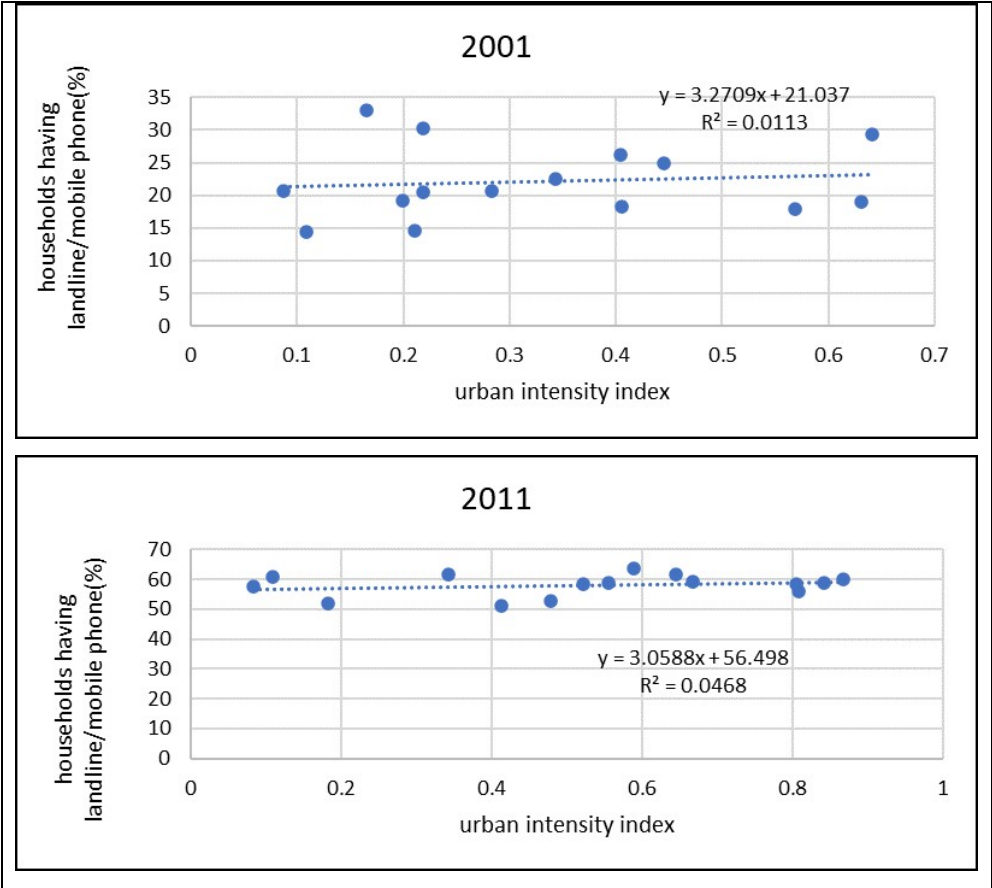
Source:Estimated by the scholar

From the scatter graph, we got some positive relationship between the level of urbanisation and accessibility of mobile phone. However, the correlation coefficient shows an insignificant value, which indicates that accessing phone connection and level of urbanisation is not statistically significant.

5.2.3.6.2 Urbanisation and computer or laptop

Access to a computer or laptop with an internet connection has become more helps to people doing their day-to-day works. Internet technology can be used for a variety of activities such as online banking, online shopping, online booking, searching information, job application, online studying, keeping records, sending files of documents, doing office works, etc. Accessing computer and broadband connections have a positive effect on economic growth, empowerment, and community development (Jayakar and Maitland 2016)

Table 5.14:Households having a computer or laptop in Kerala and India in 2011(per cent)

Districts/State	Urban	Rural
Thiruvanthpuram	25.51	11.15
Kollam	15.43	10.29
Pathanamthitta	24.95	14.31
Alappuzha	15.23	11.62
Kottayam	23.78	14.95
Idukki	24.90	8.24
Ernakulam	26.91	15.64
Thrissur	20.38	12.77
Palakkad	18.06	8.82
Malappuram	17.87	13.64
Kozhikode	17.63	12.06
Wayanad	18.12	8.24
Kannur	18.36	10.43
Kasaragod	16.07	9.72
Kerala	20.36	11.65
India	18.7	5.2

Source:Census of India 2011 from the Tables on Houses,Household Amenities and Assets,H series

The households that accessed a computer or laptop in the 2011 year are on the way to changing lifestyles that happened in the physical world. In India,18.7 per cent of urban households,5.2 per cent of rural households had computer facility in 2011. The state Kerala got a much better position compared to all India and accessed 20.36 per cent urban households and 11.65 per cent of rural households computer or laptop. In the urban areas, the top-listed districts like Ernakulam (26.91 per cent), Thiruvananthapuram (25.51 per cent), Pathanamthitta (24.95 per cent), Idukki (24.9 per cent), Kottayam(23,78 per cent)and Thrissur (20.38 per cent)had better computer accessibility compared to the other districts. Similarly, the rural areas of Ernakulam (15.64 per cent), Kottayam (14.95 per cent), Pathanamthitta (14.31 per cent), Malappuram (13.64 per cent), Thrissur(12.77 per cent)and Kozhikode (12.06 per cent) districts accessed more computer facility than in the other districts. Moreover, the urban area accessed more technological lifestyles than the rural areas both in the state of Kerala and all India.

Figure 5.12:Urban Intensity Index and Computer/Laptop
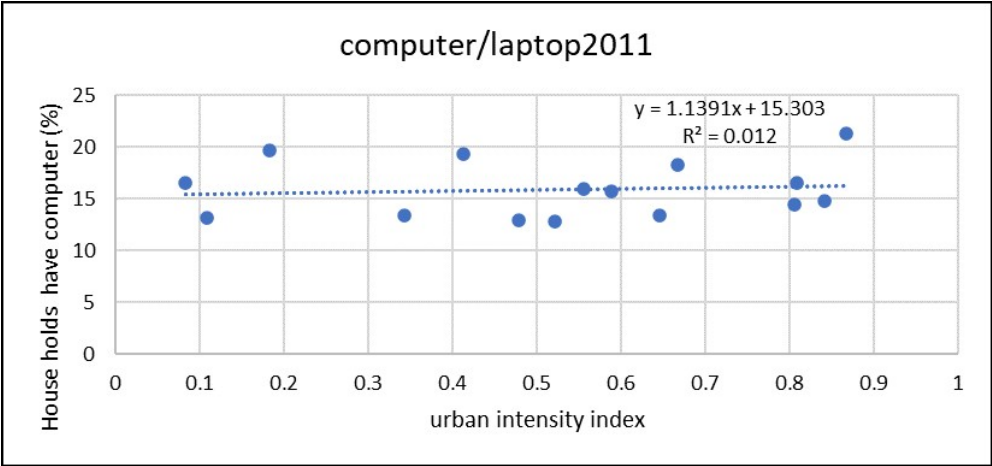
Source:Estimated by the scholar

From the scatter graph, there is no significant correlation between accessing a computer or laptop by the households and the level of urbanisation. From the census data, we can find variations between urban and rural area within the districts. However, we could not find any significant relationship between the level of urbanisation and accessing computer or laptop if we take an inter-district comparison.

5.2.3.7 Urbanisation and Assessing Vehicles

The main reason for the rise in vehicular population because of economic development showed by income growth, employment, and urbanisation of an economy. The buying of vehicles is concerned, the decisions are determined by the utility features of the good about the income and other socio-economic factors like age, employment, and urbanisation trend[10](Vijayalakshmi and Raj 2020)

The ownership of a four-wheeler increases with household income and the factors like the size of the family, house ownership and price levels of cars(Kumar and Krishna Rao,2006). The income of the economy or increase in the per capita income, urbanisation, modernisation, and lifestyle changes are also the main determinants of an increasing number of vehicles in the economy(Choudhary and Vasudevan 2017). The households of acquired two-wheeler and four-wheeler vehicles data are available in the 2001 and 2011 census. Here we examine the district wise of vehicles of the state Kerala and India in the two census periods. The urban-rural variation also observed in the districts of Kerala.

The two-wheeler use in the urban households of India in 2001 was 24.7 per cent and it increased to 35.2 per cent, whereas in Kerala it was 17.8 per cent and rose to 29.05 per cent in the 2011 census. Rural Kerala had 7.39 per cent of households had two-wheelers and it increased to 19.68 per cent in 2011 which are more than the national average. In India, there are only 5.6 per cent of urban households had four-wheelers in 2001, which increased to 9.7 per cent in 2011. The urban households of Kerala much better position in the ownership of four-wheelers and acquired 12.7 per cent in 2011. Rural India had only 1.3 per cent of households had four-wheeler and rises slowly to 2.3 per cent in 2011, whereas rural Kerala accessed four-wheelers as 2.86 per cent of households and increased to 8 per cent in 2011.

The urban area of all districts of Kerala acquired more vehicles than the rural areas. The urban areas of Ernakulam(42.37 per cent), the most urbanised district reach the topmost position among the other districts in 2011. More than 30 per cent of urban households acquired two-wheelers in almost districts of Kerala except,

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[10] Vijayalakshmi, S., and Raj, K. (2020). Cointegration Analysis of Income and Vehicular Growth in India: An ARDL Approach. Transportation Research Procedia, 48, 646-664. https://www.sciencedirect.com/science/article/pii/S2352146520304828

Kasaragod, Kannur, Malappuram, Wayanad, Kozhikode and Kollam. The proportion of urban households that had four-wheeler was highest in Idukki district(23.26 per cent), followed by Pathanamthitta district(21.73 per cent), Kottayam(19.43 per cent), Ernakulam(18.76 per cent), Wayanad (13.82 per cent).It is interesting to be noted that the urbanisation level of these districts is low except Ernakulam,and there is a common feature of these districts like the pattern of land almost the same(hilly areas).So,the households have better income status,they prefer a private vehicle for their day to day life activities.

Table 5.15:Household Ownership of Vehicles in The State Kerala and India(per cent)

District/state	Urban				Rural			
	2001		2011		2001		2011	
	Two Wheeler	Four Wheeler	Two Wheeler	Four Wheeler	Two Wheeler	Four Wheeler	Two Wheeler	Four Wheeler
Thiruvananthapuram	24.24	10.10	34.27	16.64	6.69	1.85	18.05	6.03
Kollam	14.59	6.16	26.62	10.71	7.08	2.50	17.93	7.45
Pathanamthitta	16.82	10.61	31.88	21.73	9.86	4.56	24.36	12.57
Alappuzha	14.83	4.31	30.81	9.09	9.56	2.56	23.54	6.81
Kottayam	18.39	11.35	30.62	19.43	9.55	4.63	23.34	13.52
Idukki	17.28	7.75	38.67	23.26	3.62	2.52	11.75	7.22
Ernakulam	24.35	10.16	42.37	18.76	14.20	4.07	37.27	13.60
Thrissur	20.80	8.17	32.09	13.04	10.78	3.50	24.75	7.79
Palakkad	21.32	6.77	30.47	11.25	7.88	2.25	20.83	5.53
Malappuram	8.94	4.28	18.42	8.82	4.45	2.57	17.37	6.72
Kozhikode	14.35	5.11	24.65	9.00	4.16	1.83	16.38	5.87
Wayanad	11.63	7.34	19.82	13.82	4.21	3.11	11.97	6.77
Kannur	8.22	4.03	16.20	8.96	2.90	2.14	10.42	6.66
Kasaragod	8.22	3.82	16.10	8.54	4.15	2.71	10.77	6.47
Kerala	17.80	7.35	29.05	12.70	7.39	2.86	19.68	8.03
India	24.7	5.6	35.2	9.7	6.7	1.3	14.3	2.3

Source:Census of India(2001 and 2011) from the Tables on Houses,Household Amenities and Assets,H series

In the rural area of Pathanamthitta, Kottayam and Ernakulam districts around 13 per cent of households acquired four-wheelers in 2011. Moreover, urban households purchase more vehicles compared to the rural areas both in Kerala and India. Let us check the relationship between the level of urbanisation and the proportion of households having vehicles.

Figure 5.13:Urban Intensity Index and Vehicles

vehicles(2011)

$y = -9.7072x + 46.968$
$R^2 = 0.0443$

two wheeler/four wheeler by households(%) (y-axis, 0 to 70)
urban intensity index (x-axis, 0 to 1)
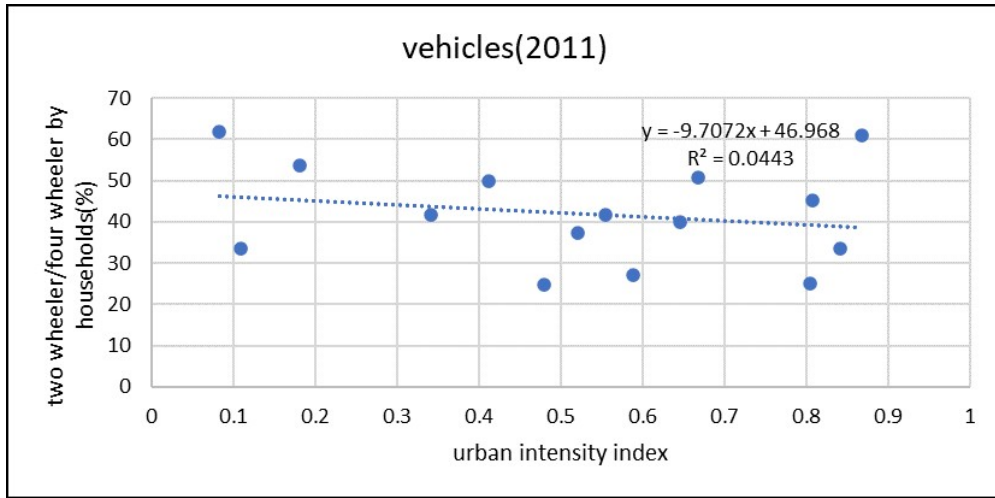
Source:estimated by the scholar

The scatter diagram and the corresponding correlation coefficient does not found any significant relationship between urbanisation and the ownership of vehicles. we can see inter-district variations in both areas such as urban and rural in all districts.However, the low urbanised district like Idukki shows the highest level of household vehicle ownership, especially in their urban areas due to the geographical condition that is compelling them and so prefers transportation by private vehicles.

5.3 Urbanisation and Social Development Index

From the above analysis, we could not find any significant correlation between the intensity of urbanisation and the major social development indicators. For analysing the performance of each district on selected development indicators and inter-district variation we try to construct a social development index. As explained in the previous chapter, we use the same methodology constructed for the economic index. Here we are applying to analyse social indicators under three dimensions such as educational index, health index and amenities index. The selected indicators of social development for the construction index as explained in table 5.16. The Social Development Index (SDI) will help us to examine the relative performance of each district with respect to the socio-development variables in Kerala. We can understand the inter-district variation between social development indicators.

Table 5.16:List of selected indicators for Social Development Index

Dimensions	Indicators	Sources
Education Index	Literacy rate	Census of India 2011
	Level of education;graduates and above	Census of India 2011
Health Index	Overall sex ratio	Census of India 2011
	Child sex ratio	Census of India 2011
	Infant mortality rate	Indirect estimates of IMR by NHSRC from census 2011
Amenities Index	Percentage of households having good and livable houses	Census of India 2011
	Percentage of Households access electricity	Census of India 2011
	Percentage of Households access drinking water within the premise	Census of India 2011
	Percentage of Households using LPG for cooking	Census of India 2011
	Percentage of households access toilet facility	Census of India 2011
	Percentage of households acquired telephone or mobile phone	Census of India 2011
	Percentage of households have computer/laptop	Census of India 2011
	Percentage of households have two-wheeler or four-wheeler	Census of India 2011

Source:Selected by the scholar

The sub-components of the education index are the literacy rate and graduation and above. Sex ratio, child sex ratio and infant mortality rate the sub-components of the health index. The proportion of households having good condition houses, electricity, drinking water, using LPG for cooking fuel, toilet facility, telephone/mobile phone, computer/laptop and two-wheeler/four-wheeler.The aggregation of these dimensions with equal weight index by using a simple average technique we get social development index.

Table 5.17:The Indices of Sub-Components of Social Development Index(2011)

Districts	Literacy Rate	Graduate and Above	Education Index	Sex Ratio	Child Sex Ratio	IMR	Health Index	House index	Drinking Water	Electricity	LPG index	Toilet within premise	Telephone/ mobile phone	Computer /laptop	Motor Vehicles	Housing andAmenities Index	Social Development Index
Thiruvananthapuram	0.59	0.911	0.751	0.38	0.5	0.222	0.367	0.471	0.989	0.904	0.71	0.734	0.553	0.925	0.754	0.755	**0.624**
Kollam	0.604	0.517	0.56	0.548	0.833	0.278	0.553	0.534	0.998	0.934	0.669	0.743	0.511	0.385	0.452	0.653	**0.589**
Pathanamthitta	0.987	0.75	0.869	0.729	0.867	0.278	0.624	0.835	0.989	0.886	0.772	0.707	0.048	0.895	0.814	0.743	**0.745**
Alappuzha	0.848	0.539	0.694	0.536	0.012	0.217	0.255	0.419	0.756	0.919	0.731	0.586	0.715	0.374	0.509	0.626	**0.525**
Kottayam	0.712	0.861	0.787	0.277	0.7	0.389	0.455	0.854	0.876	0.992	0.728	0.899	0.012	0.832	0.735	0.741	**0.661**
Idukki	0.835	0.835	0.835	0.187	0.9	0.389	0.492	0.988	0.938	0.987	0.912	0.987	0.43	0.892	0.987	0.89	**0.739**
Ernakulam	0.892	0.987	0.941	0.145	0.467	0.556	0.389	0.803	0.889	0.995	0.985	0.914	0.616	0.987	0.982	0.896	**0.742**
Thrissur	0.858	0.718	0.788	0.645	0.012	0.556	0.404	0.691	0.976	0.961	0.63	0.914	0.328	0.65	0.625	0.722	**0.638**
Palakkad	0.512	0.528	0.523	0.349	0.4	0.611	0.454	0.784	0.844	0.925	0.644	0.604	0.735	0.526	0.549	0.701	**0.558**
Malappuram	0.729	0.154	0.441	0.578	0.633	0.611	0.608	0.869	0.959	0.863	0.214	0.926	0.865	0.516	0.227	0.68	**0.576**
Kozhikode	0.809	0.474	0.641	0.584	0.8	0.082	0.489	0.751	0.903	0.844	0.294	0.907	0.534	0.503	0.369	0.638	**0.589**
Wayanad	0.432	0.395	0.413	0.277	0.4	0.389	0.355	0.532	0.734	0.462	0.541	0.642	0.678	0.529	0.369	0.561	**0.443**
Kannur	0.883	0.412	0.647	0.987	0.9	0.658	0.848	0.915	0.982	0.957	0.295	0.926	0.494	0.542	0.18	0.661	**0.719**
Kasaragod	0.436	0.253	0.344	0.651	0.233	0.556	0.48	0.844	0.96	0.864	0.528	0.757	0.115	0.419	0.169	0.582	**0.469**
Kerala	0.77	0.665	0.717	0.518	0.533	0.444	0.499	0.709	0.929	0.925	0.597	0.834	0.531	0.649	0.55	0.715	**0.644**

Source:Estimated by the scholar

The educational index was highest in Ernakulam district and lowest in Kasaragod district. The southern district shows a better level of education compared to the northern district. In the case of the health index, Kannur district achieves the top position and the last place in the Alappuzha district. Attainment of household amenities index was highest in Ernakulam district and lowest in Kasaragod district. The summation of these indices is used to construct a social development index. The relative levels of the social development index are highest in the Ernakulam district. Here we constructed the social development index of urban areas of each district.

Table 5.18:Relative Levels of Social Development Index of Urban Areas of Districts in Kerala

HIGH	MEDIUM	LOW
Pathanamthitta Ernakulam Idukki Kannur	Kottayam,Kerala,Thrissur Thiruvananthapuram Kozhikode,Kollam Malappuram,Palakkad Alappuzha	Kasaragod Wayanad

Source:constructed by the scholar.*Note:* **High***:-value of Social Development Index>(Mean+SD)***Low***:-value of Social Development Index <(Mean-SD)and* **Medium***:-value of Social Development Index (Mean-SD<Mean+SD)*

The inter-district disparity of each district with respect to their urban area is clearly examined in table 5.17 and table 5.18. Relative high values of social development had achieved by the most urbanised district like, Ernakulam. Though the Pathanamthitta and Idukki, with their low urbanisation, achieved a better level of social development. The districts like Kottayam, Thrissur, Thiruvananthapuram, Kozhikode, Kollam, Malappuram, Palakkad and Alappuzha attained a medium level of social development. Relatively low social development could be seen in the Kasaragod and Wayanad districts. This indicates that there is not a direct relationship between the level of urbanisation in Kerala on the socio-economic development indicators. The values of SDI illustrate that in the state there is wide inter-district variation in social development. We can see a relatively better situation in the social development in the southern side of the state compared to the northern district except Kannur district. We can also check the correlation coefficient between the intensity of urbanisation and the components of social development.

Table 5.19:Correlation Matrix of Urban Intensity Index and Indicators of Social Development Index

	UII	LR	>G	EI	SR	CSR	IMR	HI	Hs I	DW	EC	LPG	TF	T/M	C/L	MV	HAI	SDI
UII	1																	
LR	0.316	1																
>G	0.014	0.401	1															
EI	0.166	.771**	.892**	1														
SR	0.333	0.26	-0.51	-0.226	1													
CSR	-0.227	0.253	0.081	0.18	0.092	1												
IMR	0.069	-0.095	-0.245	-0.217	0.121	-0.164	1											
HI	0.046	0.28	-0.32	-0.084	.654**	.696**	0.364	1										
Hs I	-0.143	0.301	-0.029	0.129	0.093	0.487	.516*	.613*	1									
DW	0.241	0.258	0.091	0.191	0.456	0.426	0.136	.606*	0.371	1								
EC	0.393	.527*	0.449	.572*	0.085	0.137	0.151	0.206	0.36	.521*	1							
LPG	-0.286	0.172	.811**	.649**	-.626*	-0.121	-0.153	-0.488	-0.101	-0.117	0.317	1						
TF	0.326	0.468	0.179	0.355	0.027	0.418	0.252	0.418	.657**	0.496	0.43	-0.135	1					
T/M	0.216	-0.147	-0.308	-0.287	-0.18	-0.168	0.099	-0.174	-0.343	-0.372	-0.25	-0.263	-0.175	1				
C/L	-0.118	0.399	.843**	.782**	-0.453	0.278	-0.032	-0.06	0.3	0.241	0.31	.616*	0.368	-0.325	1			
MV	-0.206	0.408	.928**	.846**	-.629*	0.107	-0.217	-0.354	0.072	0.026	0.391	.878**	0.148	-0.221	.845**	1		
HAI	0.002	.516*	.793**	.805**	-0.493	0.273	0.104	-0.028	0.402	0.283	.607*	.667**	0.501	-0.099	.845**	.867**	1	
SDI	0.126	.784**	.659**	.844**	0.015	.540*	0.079	0.426	0.512	0.507	.656**	0.385	.590*	-0.295	.735**	.638*	.816**	1

Source:calculated by the scholar.*Notes:LR-literacy rate,>G Graduate and above,EI-Educational Index,SR-sex ratio,CSR-child sex ratio,IMR-Infant Mortality rate,HI-Health Index,Hs I- House index,DW-Drinking Water,EC-electricity connection,LPG used, TF-Toilet facility,T/M-telephone/mobile phone,C/L-computer/laptop,MV-motor vehicle,AI-Amenities index,and SDI-Social Development Index.** Correlation is significant at the 0.01 level and * Correlation is significant at the 0.05 level (2-tailed)*

We can not find any significant relationship exists between social development indicators and the intensity of urbanisation in Kerala. The educational index and amenities index is positively related to the social development index. In the case of the heath index, we cannot find any significant correlation. The components of amenities index like safe drinking water, electricity, toilet facility, computer facility, accessing motor vehicles are significantly related to the social development index. In the case of the health index, we can see wide variation between the districts and not get a significant correlation coefficient to the social development, though the child sex ratio is significantly correlated to SDI.

5.4 Urbanisation and Composite Development Index

We can also examine the composite index of development for each district which considering economic index and social development index assumed as equal weight index due to these two indices are equally important for the overall development of an economy.

Table 5.20 :Composite development index in the districts of Kerala(2011)

Districts/State	Economic Index(EI)	Social Development Index(SDI)	Composite Development Index (CDI)
Thiruvananthapuram	0.721	0.624	0.673
Kollam	0.533	0.589	0.561
Pathanamthitta	0.63	0.745	0.688
Alappuzha	0.55	0.525	0.538
Kottayam	0.66	0.661	0.661
Idukki	0.681	0.739	0.710
Ernakulam	0.791	0.742	0.766
Thrissur	0.691	0.638	0.664
Palakkad	0.667	0.558	0.613
Malappuram	0.338	0.576	0.457
Kozhikode	0.486	0.589	0.538
Wayanad	0.5	0.443	0.471
Kannur	0.543	0.719	0.631
Kasaragod	0.552	0.469	0.510
Kerala	0.615	0.644	0.629

Source:Estimated by the scholar

As in the economic index and social development index, Ernakulam district attained the topmost position and second position attained by Idukki district in the Composite Development Index(CDI). We can see a contradictory feature in these districts. Ernakulam district represents the most urbanised district and the Idukki district is a little urbanised district.This indicates that in Kerala, the intensity of urbanisation is less significant for determining the socio-economic development. Overall performance of districts in the Composite Development Index in Kerala are illustrated in *Annexure (A 5.2)*

Table 5.21: Relative Levels of Composite Development Index of Urban Areas of Districts in Kerala

HIGH	MEDIUM	LOW
Ernakulam Idukki	Pathanamthitta,Thiruvananthapuram Thrissur,Kottayam,Kannur,Kerala Palakkad,Kollam,Kozhikode Alappuzha	Kasaragod Wayanad Malappuram

Source:constructed by the scholar.

Note:High:-value of Composite Development Index>(Mean+SD) Low:-value of Composite Development Index <(Mean-SD) and Medium:-value of Composite Development Index (Mean-SD<Mean+SD)

The urban area of Ernakulam and Idukki districts performed well as compared to the other districts. We can say that the districts like Kasaragod, Wayanad and Malappuram districts performed relatively extremely low as compared with other districts. The low level developed districts necessitate the progress of various aspects of the developmental indicators. It can be noted that the level of urbanisation not an indicator of development in Malappuram district. Even if urbanisation takes place more or not, these districts are required more attention for their economic and social indicators for the balanced development of a state.

5.5 Conclusion

Kerala achieved in respect of certain indicators of socio-economic development is generally recognised and remarked even also at the international level. The present study tries to examine the role of urbanisation or the intensity of urbanisation on the economic

and social indicators of the urban area recognised by the census of India. In the decade 2001-2011, Kerala witnessed tremendous growth in urbanisation. By this background, we intended to study whether urbanisation is helpful or not for the socio-economic development of the economy. The analysis of the present chapter shows that the intensity of urbanisation or level of urbanisation does not accompany a parallel level of socio-economic development in most of the districts of Kerala economy. This is considered as one of the major findings of the present study, that is in the state of Kerala, almost districts' have experienced the concept of "over-urbanisation" which does not bring a balanced socio-economic development in the economy.

Chapter 6

Summary and Conclusions

Chapter Six
Summary and Conclusions

6.1 Introduction

The present study titled, "Urbanisation and Socio-Economic Performance of Kerala Economy" mainly aims to analyse the implication of the level of urbanisation on the performance of economic and social indicators of the economy. Our nation, India, is passing over the phase of rapid urbanisation given by general development, industrialisation, and inflow of population from the rural to urban areas in search of better employment. The progressive growth of the urban population and the unbalanced growth of cities have played an essential role in changing the nature and pattern of urbanisation. In India, the process of changing behavioral patterns from the rural to urban is considered as modernisation which comprises qualitative and quantitative developments in the system of housing, sanitation and water supply, transport and communication, administrative and educational institutions collected with any other social aspects of life such as culture and traditions. The concept of urbanisation is mostly related to the science of economics due to it connects to the activities of people from an agricultural society into more and generally non-agricultural activities. In the urban areas, the main pursuits are trade and commerce, manufacturing,transport and communication and so many professional, and institutional services. Thus, the secondary and tertiary activities are the fundamental features of urban occupational structure.

Urbanisation in the demographic aspect is an increase in the share of the urban population to the total population. Thus, it is quite clear that a combined set of socio-economic and demographic factors should be used in measuring the intensity of urbanisation in a region. Growth in the size and number of urban units and modifications in their formation also bring about socio-economic development. India is one of the fast-growing developing economies, also viewed a gradual increase of urban population since independence. The country had 17.3 per cent of the urban population in 1951 which increased to 27.82 per cent in the 2001 census and 31.16 per cent in the 2011 census. Urbanisation is a process that is associated with social and economic impacts in urban areas. It may also be described as a function of social and economic changes taking place over time.

We discussed much literature related to urbanisation and the development of the economy. It gave a clear picture of the main characteristics of urbanisation that occurred in developed and developing countries. The studies also discussed in the Indian context given the trend and pattern of urbanisation of India and its various states. The state of Kerala already discussed several studies which examines the trend and pattern of urbanisation. In the state of Kerala, most of the studies related to urbanisation concerning the degree of urbanisation and growth of census towns. There is a lack of study dealing with the development aspects of urbanisation focused on the whole economy of the state. Almost studies are used for measuring urbanisation is the percentage of the population residing in the urban area, the number of towns growth etc. However, it is appropriate for the comprehensive measurement of urbanisation as the summation of the urban population, male employment in non-agricultural activities and the proportion of the urban area. Similarly, it is significant to estimate the share of urban income to the total state domestic product of the state economy and the implication of the level of urbanisation on the socio-economic performance of the urban area of each district in the state.

Our study tried to examine the comprehensive urban growth and socio-economic performance of each district of the Kerala economy. For this purpose, at first, we tried to examine, is there any inter-district variation in the level of urbanisation by constructing a composite index termed the Urban Intensity Index. Secondly, to examine urban income contribution to the whole economy and examining the per capita income of urban parts of each district of Kerala economy, we estimated urban and rural income by using the labour productivity method. Lastly, we analysed the performance of socio-economic development indicators among the urban areas of each district which provided a clear insight into inter-district differences in the Kerala economy. By studying the socio-economic development of each district, we get an impression to what extent emphasis should be given, in so far as the districts are concerned and the backward areas as to more attention should be paid especially the social variables like, health, education, basic household amenities etc.

The present study has been based on secondary data collected from authentic sources. The major data sources for the present study is the census of India in various years. The last census was done in 2011, so the study is limited to the year 2011. The data concerning population growth, level of urbanisation, the class size distribution of

urban population, urban area, the density of population, pattern of land utilisation, output and employment contribution of the primary sector, secondary sectors and tertiary sector to Net State Domestic Product(NSDP)and District Domestic Product(DDP), selected socio-economic development indicators have been examined with the support of empirical data. The study tried to identify the performance of sub-sectors of the economy and economic growth process from 1990-91 to 2010-11 and examined the association between urbanisation and socio-economic performance of the Kerala economy.

The second chapter discussed both theoretical perspective and concepts used and for the present study. In this chapter, we reviewed several theories and empirical findings which helps to generate theoretical support for our study. Various terms and concepts of urbanisation and certain socio-economic variables and concepts used in the study are also discussed in the chapter. The composite index of urbanisation termed as Urban Intensity Index, Composite Development Index for measuring socio-economic performance are also roughly illustrated in the second chapter.

6.2 Findings

The chapters such as three, four and five discussed the objectives of the present study, respectively. Each objective and the inferences generated from the analysis are discussed by the following.

a)*To examine the trend and pattern of intensity of urbanisation in Kerala.*

The third chapter tried to examine the intensity of urbanisation of fourteen districts of Kerala. The chapter discussed the growth of population, growth of urban population, growth of urban centres,class-wise classification of the urban population of all India level and the district-wise of the state Kerala. These are the traditional analysis of measuring urbanisation. The study constructed a composite index (Urban Intensity Index)of urbanisation by using demographic, economic and geographical magnitudes.

The population of the state Kerala witnessed an increasing trend from 135.49 lakhs in 1951 to 333.87 lakhs in 2011.The decadal changes showing a decreasing trend of population growth in Kerala from 22.8 per cent in 1941-51 to 4.8 per cent in 2001-11, whereas in All India, it was 17.8 per cent in 2001-11. The density of the population of Kerala shows a rapid increase from 349 persons in 1951 to 859 persons per sq. km in

2011, whereas, in India, it was 117 and 382, respectively. The trend of population growth of Kerala shows a moving toward zero population growth. The state had the lowest population growth rate in the decade 2001-2011 compared to other states of India.

Inter-district variations of the size of the population can be seen in Kerala. As per the 2011 Census data, the population is maximum in the Malappuram district (41.11 lakh) which experienced the highest population growth rate (13.39 per cent) followed by Thiruvananthapuram(33.07 lakh). The lowest population has been found in the Wayanad district (8.17 lakh) followed by the Idukki district(11.07 lakh), which have a unique feature that they are in the hilly land regions of Kerala. The census data shows, in the southern districts experienced the highest population growth rate in the 1950s, though the 2011 census shows the highest population growth rate is in the central and northern districts of Kerala.

We can see a slight decline in the urban population from 26.39 per cent in 1991 to 25.97 per cent in 2001 or 0.43 per cent point decrease in the share of urban population was due to the declassification of forty-two towns, and the growth rate of the urban population had declined to a low level of 7.64 per cent in 2001. Moving back to this trend, the rate of growth of the urban population has reached above 92 per cent in 2011, achieved a high rate of growth. The urban population of the state was comparatively lower than the national average up to the 2001 census and lay below 28 per cent as in the 2001 census. During the decade 2001-11, Kerala has marked the change due to 47.72 per cent urban population with 92.72 per cent of Decadal growth rate and 6.62 per cent of annual growth rate. The state of Kerala experiencing a very low growth rate in the total population accompanied by a rapid rate of growth in the urban population and a negative growth rate of the rural population.

Though, in the case of the share of the urban population to the state average, the top districts were Kannur(18.59 per cent)and Ernakulam(16.12 per cent)in 1971. During 1971, most of the districts were a low per cent of urban population that was lower than the state average (16.24 per cent).In the 2001 census, Kannur and Ernakulam reached top positions and Idukki and Wayanad had a low level of urbanisation relative to the other districts. In accordance with the census 2011, Kerala reached around 50 per cent of the urban population. The proportion of urban population above 60 per cent of the

population achieved by four districts, such as Ernakulam, Thrissur, Kozhikode, and Kannur. Among these districts, Ernakulam reached the top position with 68.07 per cent of the urban population. As followed in the earlier census, Idukki Wayanad districts have a low urban population comparing to the other districts. If we take the share of the urban population of each district to state average, the most urbanised district was Ernakulam.

The regional wise examination shows that Central and North Kerala are subjected to high-level urbanisation, especially during 2001-2011, while the eastern part of Kerala with forest cover was a comparatively lower level of urbanisation including the districts like Wayanad, Idukki, Palakkad and Pathanamthitta. Thus, it can be assessed that Kerala is experienced a high level of urbanisation all over the State except in the hilly region especially during the last decade.

If we consider the growth of the number of towns and urban areas, we can see during the 1961 census, there are 92 towns in the state of Kerala. In the 1981 census,32 towns of 1971 declassified as rural area as in contradiction of 50 towns were newly added to urban areas and the total number of towns was 106. In the 1991 census, there were 91 towns added and increasing the total number of towns to 197. As contrary to the 1991 census, in the 2001 census 42 existed towns were declassified and 16 census towns were unified with three municipal corporations of Thrissur, Kollam and Thiruvananthapuram and 18 towns were further added to urban areas. Above all, the 2011 census witnessed a rapid increase in the number of census towns in Kerala in which 361 towns were added and raised to town as 520 towns. The decadal growth rate of towns was in 2001-2011 was 227.04 per cent in Kerala and it was only 19.54 per cent in all India.

The share of the urban population in class I category was 31.62 per cent in 1991 with seven towns and it increased to 10 in 2001 (the percentage of the population was 44.66 per cent). However, in the 2011 census, the number of the urban area in class I declined to 9 and the population share falling to 20.48 per cent. The percentage share of the urban population is highest in Class III size with around 50 per cent in 2011 from 27.78 per cent in 2001. The class IV size towns carry 14.77 per cent of the urban population in 2011 as against 6.85 per cent in the 2001 census. The proportion of the urban population was negligible in class V and class VI with 2.93 and 0.23 per cent

respectively in the 2011 census. As the class size of the urban population increases, the density of the population also increases.

On the contrary to the previous census, the urban population is spread in all class sizes especially in the class III category mainly due to the formation of census towns in the 2011 census. In Kerala, the rapid urbanisation in effect arises new medium-size towns and spread the urban population within the 520 towns. The class size urban population changes rapidly in the 2011 census. The pattern of urban growth changes in the state of Kerala since the 2011 census; around 75 per cent of the urban population are living in class II, III, and IV size towns. This again led to the spreading effect on their surrounding areas and lead to more urban growth in future years.

The speed or tempo of urbanisation shows a direct relationship to the percentage change of growth of urban areas. The district-wise speed of urbanisation indicates that Malappuram, Kollam, Thrissur, and Kasaragod have relatively more speed to urban growth. similarly, the change of urban population growth can be seen highly in districts like Malappuram, Kollam, Thrissur, and Kasaragod. Thus, we can say that the rapid urbanisation of Kerala is mainly due to the reclassification of certain rural areas having the urban face to the urban area. Therefore, we can conclude that the natural increase of population in Kerala has less effect compared to the factors like migration and jurisdictional changes for the effect on the growth of the urban population

In 2001, the percentage of urban population was highest in Mizoram, Goa, Tamil Nadu, Maharashtra etc. If we take Urban Intensity Index(UII) in the same period, Goa(0.463)attained 1st place, UII of Kerala(0.343) improved slightly and hold a second place among the other states of India. Still, Arunachal Pradesh had the lowest UII (0.036) and a little more improved its position from 1991. The UII of all India (0.257) and all other states improved slightly as compared with the UII of 1991.In 2011, there is a tremendous growth of the urban population in the states. The degree of urbanisation shows an increasing trend towards the growth of urbanisation. In the 2011 census, UII of Goa increased to(0.635)from(0.463)in 2001 and maintained its 1st position in the year 2011. The UII of Kerala(0.555)improves its position and again reached 2nd position in the census 2011. It can be seen that a common feature in almost all the states that, most of them improved their position in the path of their urban growth.

It is remarkable to note that some districts level of urbanisation depending on the growth of census towns which lead to increasing the geographical index significantly causing the high value of UII in 2011. In the 2001 census, the state had only one district, Kannur which reported more than 50 per cent of the urban population. However, the 2011 census reported six districts such as Ernakulam, Thrissur, Kozhikode, Kannur, Alappuzha, and Thiruvananthapuram with more than 50 per cent population living in urban areas. The three districts like Malappuram, Kollam and Thiruvananthapuram which contributed around 20 per cent of census towns in the 2011 census, whereas they had no census towns reported in the 2001 census. As in the previous years, the Idukki and Wayanad districts had no census towns reported in the 2011 census. Therefore, their geographical index value did not change in 2011.

According to UII in 2011, the intensity of urbanisation is remarkably high in the districts like Ernakulam, Kozhikode, Thrissur, and Kannur.The districts like Thiruvananthapuram, Alappuzha, Malappuram, Kollam, Kasaragod, Kottayam, and Palakkad had moderate level of intensity of urbanisation can be found in 2011. Similarly, Pathanamthitta, Idukki, and Wayanad had a low intensity of urbanisation according to UII in 2011.

b) To analyse the implications of urbanisation on the economic performance of urban areas of Kerala economy.

Here we tried to estimate the share of urban income in the fourteen districts of the state Kerala and all India. The last section examined the intensity of urbanisation and its implications on the major economic indicators and construct economic index which helps to examine the inter-district performance of urban areas of each district for economic development.

Here, we estimate that, in 1990-91, in India, around 43 per cent of income coming from urban areas and whereas in Kerala accounted for a mere 30 per cent of urban income. In 2000-01, the share of urban income of India was 36 per cent and in Kerala, it was only around 29 per cent. In the year 2011-12, the urban income of Kerala was around 49 per cent, and 47 per cent in India. The 2011 census showed that Kerala has 47.72 per cent of the urban population and this population produced around 49 per cent of income to the state income. It can be noted that the share of urban income is slightly above the share of the urban population. If we compare the performance of

urban and rural income of Kerala and all India average, the urban income of national average lies above than the urban Income of Kerala economy in all years except in the year 2011-12.

In 1990-91, the urban income of Kannur (52 per cent), Ernakulam (50 per cent), Kozhikode (43 per cent) and Thiruvananthapuram(40 per cent)districts were more than the state urban income. The least urbanised districts like Wayanad(4 per cent)and Idukki(6 per cent)had low urban income and the highest share of rural income among the other districts of Kerala economy. In 2000-01, the urbanisation level of Kerala was not significantly changed, and some of the districts reported a decreasing level of urbanisation during the decade 1991-2001. Out of the fourteen districts, nine districts' share of urban income declined in 2000-01 compared to the 1990-91 period. Five districts like Alappuzha, Thrissur, Malappuram, Wayanad and Kasaragod have slightly improved their urban income in the 2000-01 period.

The decade 2000-2011, witnessed rapid urbanisation in almost districts except, Idukki, Wayanad, Pathanamthitta etc. The districts like Kozhikode (69 per cent), Thrissur (68 per cent), Kannur (68 per cent), Ernakulam (67 per cent), Thiruvananthapuram(57 per cent)and Alappuzha (57 per cent) had more than 50 per cent of income to the districts total income coming from the urban area. At the same time, the state average was 49 per cent of urban income. The least urbanised districts had urban income only around 4 per cent and their rural area produced 95 per cent of the total income of the district.

It is to be interesting to note that, the share of primary sector to the urban income of all India average was 3.24 per cent in 1990-91, it was again decreased to 1.74 per cent in 2010-2011. The secondary or industrial sector contribution to urban income declined from 28 per cent to 16.16 per cent in 2010-11, which indicates that the industrial performance of urban India tends to be declining over this period. In urban India, the service sector domination can be seen in the sectoral distribution of urban income and it tends to increase from 69 per cent in 1990-91 to 82 per cent in 2010-11. We can see more structural change in the state than the national average on account of urban income.

In 1990-91, the share of the primary sector to the urban income was highest in the Wayanad district(30 per cent)and the lowest in Ernakulam district(9 per cent). At the

same time the share of the secondary sector to the urban income was highest in the Idukki district (50 per cent) and lowest in the Malappuram district(15 per cent). The tertiary sector contribution to the urban income was highest in the Thiruvananthapuram district(67 per cent)and the lowest in the Idukki district(36 per cent) in 1990-91.

In the 2010-11 period, the primary sector share to urban income declined in all districts except in the Idukki district. The share of the primary sector to the urban income was highest in Wayanad (20 per cent) and Idukki (17 per cent) and it was lowest in Kozhikode and Palakkad districts (3 per cent). The share of the secondary sector to the urban income was more in Ernakulam district (33 per cent) and less in Wayanad (6 per cent) district in 2010-11. The share of the tertiary sector to the urban income was highest in the Kasaragod district (85 per cent) and lowest in the Ernakulam district (62 per cent)in 2010-11. The highest urbanised district Ernakulam (known as the industrial capital of Kerala)witnessed a strong secondary sector both in its urban and rural areas compared to the other districts.

The value of the ratio of more than one indicates that the urban per capita income lies more than the rural per capita income. Comparing all India ratio, the districts of Kerala and state average lies above which indicates that in all India level, the urban-rural disparity is relatively high in all periods.In 1990-91,high ratio values found in Idukki district(1.38)followed by Palakkad(1.31)Wayanad(1.28)etc.In 1991, Kannur district was the most urbanised district; the ratio value is 1.03 and Ernakulam district had 1.07. After one decade, from 1990-91, the ratio value of almost districts decreased, which indicates that the variation between urban and rural per capita income decreases in these districts.

Inter-district variation in economic performances shows that in 2011, the high level achieved in the urban areas of Ernakulam district and Thiruvananthapuram district. The medium level of economic attainments achieved in the urban areas of Thrissur, Idukki, Palakkad, Kottayam, Pathanamthitta districts is above the state average. The districts like Kasaragod, Alappuzha, Kannur, Kollam, Wayanad districts also attained a medium level of an economic index. Though, these districts performed below the state average. The low level of economic index attained by the major districts like Kozhikode and Malappuram. It should be noted that here we are looking at the performance of the urban area of each district in accordance with the economic index. The most urbanised

district, Ernakulam attained the first position among the other districts of Kerala. It indicates that the level of urbanisation contributes to economic attainments in the district. Thiruvananthapuram district also attained, high level of the economic index, though the district has only a medium level of urbanisation. It indicates a good sign of economic development in the district.

The districts with a medium level of the economic index such as low urbanised districts Idukki, Palakkad, Kottayam and Pathanamthitta performed comparatively well as compared to other high urbanised districts like Alappuzha, Kannur, and Kollam. This specifies that even with the low level of urbanisation, they attained better economic indicators. Similarly, the high urbanised districts like Kozhikode and Malappuram districts have attained only a low level of an economic index. This implies that these districts could not attain better economic development by their urban population.

We checked the correlation coefficient between these indicators and the urban intensity index. There are only two correlation coefficient significant values between urban intensity index and economic indicators. The non-agricultural output and non-agricultural sector employment have a positive correlation to the value of the urban intensity index. This indicates that the intensity of urbanisation increases, which tends to a structural shift from agriculture sector activities to non-agricultural sector activities. Here, per capita income and the economic index had a high degree of the positive significant correlation coefficient. (0.785). There is a significant relationship between PCI and, non-agricultural output, WPR, MPCE. There is a significant positive correlation between WPR and the Economic index(0.627). The economic indicator MPCE and the economic index had a significant positive correlation(0.778), which indicates that monthly consumption expenditure had a significant impact on the economy. Similarly, the pattern of consumption also has some effect on the economic index. There is a positive correlation between the falling poverty rate and the economic index. It can be concluded that per capita income, worker population ratio, per capita monthly consumption expenditure, the pattern of consumption, poverty level are the significant indicators that have a high correlation to an economic index.

c)To examine the implications of urbanisation on the socio-economic performance of urban areas of the Kerala economy.

The fifth chapter focused on the examination of the performance of relevant social indicators of the Kerala economy. The chapter tried to explore the performance of urban areas of each district in the socio-economic indicators of the transformation of Kerala economy, which helps to examine the effect of intensity of urbanisation in each district of Kerala economy. The chapter also constructed a social development index and the composite development index for analysing the inter-district variations in the Kerala economy.

The urban-rural variation in the literacy rate of Kerala showing a declining trend from the year 1991 to 2011. In 2011, the disparity between urban and rural parts of Kerala converged to 2.06 whereas in India it was 16.15. The 2011 census shows 95 per cent of urban literacy and 93 per cent of rural literacy in the state Kerala, whereas in India it was 85 and 69 per cent, respectively.

In 2011, Pathanamthitta district was attained a high literacy rate (97.42 per cent)and the least in the Wayanad district(91.63 per cent)in their urban areas. Compared to the rural area of each district had a high literacy rate in their urban areas. It is showed that even the low urbanised districts like Pathanamthitta and Kottayam show high literacy rates. All districts attained more than 90 per cent literacy in 2011. We can not find any fundamental relationship between the level of urbanisation and the rate of literacy in the Kerala economy.

According to the 2011 census, the urban areas of Ernakulam (24.13 per cent), Thiruvananthapuram (22.48 per cent), Kottayam (21.55 per cent) and Idukki(21.06 per cent) districts were attained a better level of education compared to the other districts. The urban areas of Malappuram stay extremely back for higher education (8.39 per cent) compared to the other districts. The better performance of rural area for higher education is attained in the districts like Ernakulam(14.37 per cent), Kottayam(13.26 per cent), Pathanamthitta (12.49 per cent), Thrissur (11.78 per cent) and Alappuzha (11.28 per cent). As in the urban area of Malappuram district, the rural area (5.53 per cent) also had a low percentage of the population who attained higher education. We can see that the district-level performance of level of education better in southern districts from Thrissur to Thiruvananthapuram compared to the northern districts.

In the 2011 census, the state average of IMR was 26, and in all India was 58. The highest IMR reported in Kozhikode and the lowest in the Kannur district. Above all, the state Kerala achieved the lowest IMR among the other states of India. We get a negative association between urbanisation and urban infant mortality rate with a significant correlation coefficient. It indicates that urbanisation or development brings more health facilities that reduce the mortality rates of infants compared to rural areas.

In 2001, 72 per cent of urban households had good condition houses in Ernakulam district was the highest followed by Kozhikode (69 per cent) and Kannur district(69 per cent). Thrissur (57 per cent) and Palakkad (58 per cent) districts' urban households had the lowest percentage of the good condition of houses in 2001. After one decade, all districts showing some improvements in the proportion of good condition houses in their urban areas. In 2011, the proportion of good condition houses attained the urban areas of Kozhikode (79 per cent) and Kannur (79 per cent) districts with the first position and the last position in the Wayanad district (55 per cent). Comparing to the urban area, the rural area had only a small proportion of good conditional houses and more in dilapidated condition houses.

According to the 1991 census,three-fourth of urban India households have access to electricity facility. At that time urban Kerala has only 67.65 per cent of households, enjoy electricity facility, and nine districts, especially the northern districts, are below the state average. The urban parts of Thiruvananthapuram, Ernakulam, Thrissur, Kottayam, and Kollam districts achieved more than the state average. The urban parts of India and the state improved the accessibility of electricity over time. All districts except Wayanad attained more than 95 per cent of access to electricity in their urban areas.

The urban households of all India had only 65.40 per cent accessed drinking water within the premise in 2001 and improved to 71.2 per cent in 2011. The state of Kerala had 79 per cent of urban households attained safe drinking water within their premises in 2001 and it increased to 83.26 per cent in 2011. In all districts, safe drinking water availability increases both in urban and rural areas. According to 2011 census data, in the urban areas, more than 80 per cent of households accessed safe drinking water within their premises excepts in the districts like Alappuzha, Wayanad, and

Pathanamthitta. The availability of safe drinking water within their premises more attained by the households of urban areas compared to rural areas.

In the 1991 census, India had around 36 per cent of urban households access private toilet facility and it increased to 83 per cent in 2011. At the same time, the state of Kerala had located toilet facility around 73 per cent of urban households and improved to 97 per cent in the 2011 census. All districts also have the same improvement in the 2011 census, comparing to 1991. The situation of rural India in case of accessibility of toilet facility is not satisfiable even in the census 2011. However, there is an improvement from 9 per cent to 31 per cent in 2011.

The modern communication means of telephone and mobile phone is dominated in the Indian economy. In the 2001 census, the land phone connection is generalised and accessing mobile phone as a luxury. Urban India had available telephone connection only 23 per cent and it was in Kerala was 29.26 per cent. According to the 2011 census, in India,82 per cent of urban households and 54.3 per cent of rural households accessed telephone or mobile phone and it was in Kerala 59 per cent and 58 per cent respectively.   In India,18.7 per cent of urban households,5.2 per cent of rural households had computer facility in 2011. The state Kerala got a much better position compared to all India and accessed 20.36 per cent urban households and 11.65 per cent of rural households computer or laptop. In the urban areas, the top-listed districts like Ernakulam(26.91 per cent), Thiruvananthapuram(25.51 per cent), Pathanamthitta(24.95 per cent), Idukki(24.9 per cent), Kottayam (23,78 per cent) and Thrissur (20.38 per cent)had better computer accessibility compared to the other districts.

The urban area of all districts of Kerala acquired more vehicles than the rural areas. The urban areas of Ernakulam(42.37 per cent), the most urbanised district reach the topmost position among the other districts in 2011. More than 30 per cent of urban households used two-wheelers in almost districts of Kerala except in the districts like Kasaragod, Kannur, Malappuram, Wayanad, Kozhikode and Kollam. The households accessed four-wheeler in the urban area was highest in Idukki district (23.26 per cent), followed by Pathanamthitta district (21.73 per cent), Kottayam(19.43 per cent), Ernakulam (18.76 per cent), Wayanad(13.82 per cent).

Relatively high values of social development indicators had achieved by the most urbanised district Ernakulam compared to other districts. Though the Pathanamthitta

and Idukki, with their low urbanisation, achieved a better level of social development. The districts like Kottayam, Thrissur, Thiruvananthapuram, Kozhikode, Kollam, Malappuram, Palakkad and Alappuzha attained a medium level of social development. Relatively low social development could be seen in the Kasaragod and Wayanad districts. It can be noted that there is no fundamental relationship between the level of urbanisation in Kerala on the socio-economic development indicators. The values of the Social Development Index(SDI) illustrate that in the state there is wide inter-district variation in social development. We can see the relatively better situation in the social development in the southern side of the state compared to the northern district except Kannur district.

We can see that the overall performance considering socio-economic indicators (Composite Development Index), the urban area of Ernakulam and Idukki districts performed well as compared to the other districts. We can say that the districts like Kasaragod, Wayanad and Malappuram districts performed relatively extremely low as compared with other districts. The low level developed districts necessitate the progress of various aspects of the developmental indicators. It can be noted that the level of urbanisation not an indicator of development in Malappuram district. If urbanisation takes place more or not, these districts need more attention for their better performances in economic and social indicators.

6.3 Conclusion

Kerala is a way of fast urbanising phase and the rate of urbanisation will tend to continue to increase. The present study tried to examine the inter-district variation of intensity of urbanisation in Kerala According to the analysis of the present study, in terms of the intensity of urbanisation; most districts are in the range of medium or high level of urbanisation. We can see the high level of urbanisation in the plain and coastal regions and very low urbanisation in the high range districts. Here, we can see the geographical location of districts determines the intensity of urbanisation to some extent. The economic variable like activities related to non-agricultural pursuits, socio-economic overheads of each district and the percentage of people lives in urban areas also affect the intensity of the urban index in each district. The study also examined to find out the association between the intensity of urbanisation of each district and its implications on the major socio-economic indicators. Here, we could not found any

significant relationship between the level of urbanisation on the socio-economic development of districts. According to the study, we get certain inferences that certain districts with high urbanisation have faced a low level of socio-economic development. This indicated that more attention is needed in these districts with respect to socio-economic development indicators to balance with their level of urbanisation.

6.4 Policy Implications

From the study, we can see the state of Kerala experiences a rapid urbanisation phase, especially in the last two decades. The inter-district variation concerning the level of urbanisation and socio-economic performance can be visibly felt in the study. Obviously, there is more development in urban areas compared to the respective rural areas of all districts. However, our study focused on the performance of urban areas of all districts of Kerala. From the analysis, we got certain inferences that there is over-urbanisation experienced in the districts such as Malappuram, Kozhikode, and Kasaragod etc. Efficient government policies and urban planning are needed for balanced socio-economic development to the rapidly increased urban population in Kerala.

6.5 Future Research

The present study mainly used secondary data, especially census data. Therefore the scope of the study limited to the year 2011 census, which is the last census under the study period. Future census data should give more updated data. So there is a wide scope for future research in the state based on the availability of data. There is a scope for studying inter-state variations in the intensity of urbanisation. There is a scope for the study of the implication of the level of urbanisation on the socio-economic performance at a national level.

Annexure

ANNEXURE

A 3.1: Components of Urban Intensity Index(1991)

Components of Urban Intensity Index(1991)			
State	**Demographic Index(DI)**	**Economic Index(EI)**	**Geographic Index(GI)**	**Urban Intensity Index(UII)**
Andhra Pradesh	0.360	0.881	0.024	0.196
Arunachal Pradesh	0.173	0.977	0.000	0.031
Assam	0.147	0.955	0.015	0.127
Bihar	0.173	0.786	0.030	0.161
Goa	0.547	0.944	0.148	0.425
Gujarat	0.453	0.949	0.036	0.250
Haryana	0.333	0.912	0.037	0.224
Himachal Pradesh	0.120	0.948	0.007	0.092
Karnataka	0.413	0.883	0.031	0.223
Kerala	0.347	0.788	0.120	0.320
Madhya Pradesh	0.307	0.859	0.025	0.189
Maharashtra	0.520	0.970	0.035	0.260
Manipur	0.373	0.510	0.009	0.121
Meghalaya	0.253	0.963	0.010	0.134
Mizoram	0.613	0.609	0.039	0.245
Nagaland	0.227	0.925	0.023	0.168
Orissa	0.173	0.840	0.020	0.144
Punjab	0.400	0.893	0.042	0.246
Rajasthan	0.307	0.898	0.020	0.177
Sikkim	0.120	0.980	0.029	0.153
Tamil Nadu	0.453	0.909	0.070	0.306
Tripura	0.200	0.917	0.020	0.154
Uttar Pradesh	0.267	0.846	0.024	0.176
West Bengal	0.360	0.980	0.049	0.259
India	0.343	0.907	0.030	0.210

Source: Census of India (1991-2011).Note: UII constructed by the scholar

A 3.2:Components of Urban Intensity Index 2001

Components of Urban Intensity Index 2001				
State	Demographic Index(DI)	Economic Index(EI)	Geographic Index(GI)	Urban Intensity Index(UII)
Andhra Pradesh	0.364	0.936	0.024	0.200
Arunachal Pradesh	0.277	0.997	0.000	0.036
Assam	0.172	0.978	0.015	0.137
Bihar	0.139	0.792	0.030	0.150
Goa	0.663	0.987	0.148	0.463
Gujarat	0.498	0.998	0.025	0.231
Haryana	0.386	0.960	0.037	0.239
Himachal Pradesh	0.131	0.983	0.007	0.097
Jammu & Kashmir	0.331	0.931	0.007	0.130
Jharkhand	0.297	0.984	0.035	0.218
Karnataka	0.453	0.938	0.031	0.235
Kerala	0.346	0.965	0.120	0.343
Madhya Pradesh	0.353	0.888	0.025	0.200
Maharashtra	0.566	0.988	0.035	0.269
Manipur	0.354	0.708	0.009	0.133
Meghalaya	0.261	0.951	0.010	0.135
Mizoram	0.662	0.688	0.039	0.262
Nagaland	0.230	0.998	0.023	0.174
Odisha	0.200	0.946	0.020	0.157
Punjab	0.452	0.944	0.042	0.262
Rajasthan	0.312	0.935	0.020	0.180
Sikkim	0.148	0.986	0.029	0.166
Tamil Nadu	0.587	0.869	0.070	0.329
Tripura	0.227	0.975	0.020	0.166
Uttar Pradesh	0.277	0.849	0.024	0.178
Uttarakhand	0.342	0.991	0.021	0.194
West Bengal	0.373	0.982	0.049	0.263
Chhattisgarh	0.268	0.946	0.056	0.241
India	0.939	0.939	0.030	0.297

Source:estimated by the scholar

A 3.3 :Components of Urban Intensity Index 2011

Components of Urban Intensity Index 2011				
State	Demographic Index(DI)	Economic Index(EI)	Geographic Index(GI)	Urban Intensity Index(UII)
Andhra Pradesh	0.394	0.908	0.041	0.244
Arunachal Pradesh	0.306	0.984	0.001	0.060
Assam	0.188	0.976	0.023	0.161
Bihar	0.151	0.727	0.035	0.157
Chandigarh	0.310	0.988	0.036	0.226
Goa	0.829	0.987	0.308	0.635
Gujarat	0.568	0.980	0.054	0.311
Haryana	0.465	0.918	0.064	0.301
Himachal Pradesh	0.134	0.976	0.007	0.097
Jammu & Kashmir	0.365	0.937	0.008	0.140
Jharkhand	0.321	0.956	0.040	0.231
Karnataka	0.516	0.945	0.045	0.279
Kerala	0.636	0.962	0.279	0.555
Madhya Pradesh	0.368	0.865	0.036	0.225
Maharashtra	0.596	0.966	0.042	0.290
Manipur	0.389	0.727	0.011	0.148
Meghalaya	0.268	0.978	0.018	0.168
Mizoram	0.695	0.726	0.040	0.272
Nagaland	0.385	0.923	0.021	0.195
Odisha	0.222	0.910	0.031	0.184
Punjab	0.500	0.941	0.071	0.323
Rajasthan	0.332	0.926	0.028	0.204
Sikkim	0.335	0.976	0.008	0.138
Tamil Nadu	0.645	0.905	0.150	0.444
Tripura	0.349	0.951	0.053	0.261
Uttar Pradesh	0.297	0.813	0.045	0.221
Uttarakhand	0.403	0.959	0.024	0.210
West Bengal	0.425	0.929	0.082	0.319
India	0.413	0.920	0.044	0.257

Source:estimated by the scholar

4.1 Method and Data Sources of Estimation of Urban and Rural Income

Central Statistics Office provides the GDP estimate for the country at quarterly and yearly intervals. It occasionally updates the base year and expands the exposure of goods and services, integrates latest survey and census data, progresses the estimation techniques as well as familiarises to the reviewed guidelines of Systems of National Accounts. The CSO also delivers supervision to the State Economic and Statistical Agencies on Gross State Domestic Product and District Domestic Product estimation. The state collects an estimate of GSDP every year by the summation of the contribution of various industries or sectors. Both the Central Statistics Office at all India status and the Directorates of Economics and Statistics at the state status practice the same assembling procedure for the estimation to guarantee reliability and comparability of data.

There are roughly some diverse problems from the practice of aggregate and disaggregate measurement of domestic product. Firstly, as we move from the aggregate to disaggregate or bottom level, data accessibility at a stiff level develops a task. Secondly, when data for the bottom-up method is not accessible, domestic product is being assessed either through 'labour input' method or being assigned by the state economy to the districts on the source of specific proportions such as the share of employment. Thirdly, due to the scarcity of data, studies that were showed several years ago are now also being used with certain modifications. In this study, we tried to use labour productivity approach across the districts. That is the urban and rural domestic product will be assessed by labour-input method or worker population ratio, which is based on workers' productivity of each sector and the sector-wise number of workers in the region.

For the estimation process of urban and rural income, we need certain necessary data for the same. Such as,

- Population data

- Employment data, and

- Domestic Product data

For the estimation purpose, there is an estimated population of urban and rural is applied by using the method of the average annual growth rate of population based on the census data. Used for estimating urban and rural income in the state Kerala, the Net State Domestic Product by broad sectors are available from the publications of Economics and Statistics Department of Government of Kerala and corresponding employment data are available from the NSSO reports of various rounds. For comparing the urban-rural income of Kerala to the national average, all India performance are also considered. At this purpose, the Net Domestic Product of India published by CSO and employment data is available from the NSSO reports. We have tried to

estimate urban-rural income Kerala and all India average for the years 1983-84,1987-88,1993-94,1999-2000,2004-04 and 2011-12. Here we have also tried to estimate urban-rural income at the district level. For this purpose, the census data of 1991,2001 and 2011 are used for getting employment data, and Net District Domestic Product is available from various Economic Reviews published by State Planning Commission.

For estimating the urban and rural income of an economy, at first, we must consider the population data. In India, population data available in the census data which provide decadal information to us. In between the years, for getting population data, we need to be used the estimated population of urban population and rural population. Next, we need employment data which are available from certain data from census reports and NSSO reports of various rounds of employment and unemployment survey.

The purpose is to estimate total urban income (UI) and rural income (RI) and obtain per capita income in both areas. For deriving Urban Income and Rural Income, we are going to following steps.

Step 1

At first, we should find out the Worker Population Ratio (WPR) of both areas. Therefore,

Urban Worker Population Ratio (UWPR) = $\frac{Uw}{UP}$

Where, UW is Total Urban Workers, UP- Total Urban Population

Rural Worker Population Ratio (RWPR) = $\frac{Rw}{RP}$

Where, RW is Total Rural Workers, RP -Total Rural Population

Step 2

Secondly, identify the structure of employment in the urban area and rural area. The total urban workers and total rural workers are distributed to several sectors of the economy. Such as primary, secondary, and tertiary sectors and their sub-sectors are utilised the workers of urban and rural area. Therefore

Total Urban workers (Uw) $= \sum_{i=1}^{n} Uwi/Uw$

Where, Uw_i is urban workers employed in '*i*' th sector, Uw -total urban workers

Total Rural workers (Rw) $= \sum_{i=1}^{n} Rwi/Rw$

Where, Rw_i is rural workers employed in '*i*' th sector, Rw -total urban workers

It can be provided that the contribution of urban and rural employment to each sector of the economy.

Step 3

Next to find out overall labour productivity of the economy. The following formula can measure the overall labour productivity,

Total Labour Productivity (TLP) $= \dfrac{TP}{TW}$

Where, TP is the total domestic product of the economy TP = UP +RP,

UP = domestic product from the urban area; and RP = domestic product from the rural area

TW is total workers, TW=UW+RW,

UW = total workers of an urban area; RW = total workers of rural area

From the TLP, we can estimate the sectoral productivities of workers in the urban and rural areas by assuming that the labour productivities at each sector remain same in the urban area and the rural area in the condition of non-availability of such data from published sources. In general, it becomes the lower limit of real urban labour productivity at the state and district level the reason that in the urban areas, the sectoral labour productivities are generally higher than in the rural areas.

Step 4

In this step, we should find the per worker labour productivity of each sector as in step 3. After that, we can calculate the total value added of each worker in both areas.

Therefore,

Urban domestic product in sector i (UP$_i$) $=$ UW$_i$ x LP$_i$

Where, UW$_i$ denotes urban workers engaged in 'i'th sector,LP$_i$ is the per labour productivity of 'i' th sector of the overall economy.

There are i = 1,2,3….n sectors in the economy.

Rural   domestic product in sector i (RP$_i$) $=$ RW$_i$ x LP$_i$

Where, RW$_i$ denotes rural workers engaged in 'i'th sector,

LP$_i$ is the per labour productivity of 'i' th sector of the overall economy.

There are i = 1,2,3….n sectors in the economy.

Here $UP_i + RP_i = TP_i$,

which means that summation of the urban and rural domestic product of 'i'th sector gives the total domestic product of 'i'th sector of the overall economy.

Step 5

This is the step to estimate the total domestic product of the urban and rural area, which is the summation of all sectors' domestic product in the boundary of the respective regions. Therefore,

Total Urban Domestic Product or Urban Income (UI) $= \sum_{i=1}^{n} Uw_i * LP_i$

Where UI is the Urban Income derived from the summation of the urban domestic product of all sectors in the urban area. There are i=1,2,3…n sectors in the urban economy.

Total Rural Domestic Product or Rural Income (UI) $= \sum_{i=1}^{n} Rw_i * LP_i$

Where, RI is the Rural Income derived from the summation of the rural domestic product of all sectors in the rural area. There are i=1,2,3…n sectors in the rural economy.

If we estimate urban income and rural income, we can estimate the per capita income of both areas as follows.

Urban Per Capita Income (**UPCI**) $= \dfrac{UI}{UP}$

$$\text{or} \qquad UPCI = \dfrac{Uw}{UP} \times \dfrac{UI}{Uw}$$

$$UPCI = UWPR * ULP$$

Where, UI is urban income, UP is the urban population, UW is urban workers, UWPR is urban worker population ratio, and ULP is urban labour productivity. Similarly, we can find the rural per capita income as follows.

Rural Per Capita Income (**RPCI**) $= \dfrac{RI}{RP}$

$$\text{or} \qquad RPCI = \dfrac{Rw}{RP} \times \dfrac{RI}{Rw}$$

$$RPCI = RWPR * RLP$$

Where, RI is rural income, RP is a rural population, RW is rural workers, RWPR is rural worker population ratio, and RLP is rural labor productivity

A 4.2 :Urban and Rural Population in Kerala and All India in 1991,2001 and 2011(in persons)

Districts	1991			2001			2011		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Thiruvananthapuram	998243	1948407	2946650	1091661	2142695	3234356	1779319	1527965	3307284
Kollam	446036	1961530	2407566	465978	2119230	2585208	1184684	1445025	2629709
Pathanamthitta	155034	1033298	1188332	123798	1110218	1234016	131390	1064147	1195537
Alappuzha	609610	1391607	2001217	621457	1487703	2109160	1145849	976094	2121943
Kottayam	320918	1507353	1828271	299808	1653838	1953646	566698	1412686	1979384
Idukki	50881	1027185	1078066	57593	1071628	1129221	51940	1055513	1107453
Ernakulam	1373177	1444059	2817236	1477085	1628713	3105798	2232601	1047259	3279860
Thrissur	720216	2017095	2737311	839433	2134799	2974232	2089207	1021120	3110327
Palakkad	374577	2007658	2382235	356575	2260907	2617482	677144	2133748	2810892
Malappuram	282454	2813876	3096330	356170	3269301	3625471	1816220	2294736	4110956
Kozhikode	1004497	1615444	2619941	1101157	1777974	2879131	2074628	1014915	3089543
Wayanad	22949	649179	672128	29612	751007	780619	31601	784957	816558
Kannur	1145476	1106251	2251727	1212898	1196058	2408956	1642927	882710	2525637
Kasaragod	176226	895282	1071508	233700	970378	1204078	505148	797452	1302600
Kerala	7680294	21418224	29098518	8266925	23574449	31841374	15932602	17455081	33387683
India	**217,551,812**	**628,836,076**	**846,387,888**	**285,354,954**	**741,660,293**	**1,027,015,247**	**377105760**	**833087662**	**1210193422**

Source : Census data 1991,2001 and 2011

A 4.3: District-wise of Urban and Rural workers in Kerala (in persons)

Districts	1991			2001			2011		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Thiruvananthapuram	293712	594901	888613	353586	695573	1049159	651163	582562	1233725
Kollam	120582	552130	672712	144898	672267	817165	398376	511686	910062
Pathanamthitta	41014	280581	321595	33830	329961	363791	40886	351290	392176
Alappuzha	184313	418291	602604	270003	454172	724833	432207	370097	802304
Kottayam	92301	444786	537087	93832	548212	642044	183202	540526	723728
Idukki	15951	373185	389136	18077	461353	479430	17704	497956	515660
Ernakulam	409267	464141	873408	503910	615049	1118959	830690	417734	1248424
Thrissur	207541	597197	804738	266495	687537	954032	714068	377877	1091945
Palakkad	114058	672305	786363	122079	830860	952939	235576	807140	1042716
Malappuram	59719	611767	671486	85718	789925	875643	448614	612840	1061454
Kozhikode	240123	368882	609005	314492	489038	803530	633363	316650	950013
Wayanad	7948	219505	227453	12636	293545	306181	12051	327665	339716
Kannur	286491	303896	590387	358112	417852	775964	502328	322570	824898
Kasaragod	51202	275298	326500	75263	344089	419352	160962	300478	461440
Kerala	2124222	6176865	8301087	2604835	7678187	10283887	5276336	6336129	11612465
India	63642914	222289579	285932493	92278654	309956070	402234724	135740199	334413666	470153865

Source : Census data 1991,2001 and 2011

A 4.4 :Sector -wise and district -wise of urban-rural workers in Kerala and All India in 1991 (in persons)

Districts/state	Primary		Secondary		Tertiary	
	Urban	Rural	Urban	Rural	Urban	Rural
Thiruvananthapuram	70616	351241	53664	88235	169432	155425
Kollam	29419	286004	33660	114810	57503	151316
Pathanamthitta	17185	175283	5208	27451	18621	77847
Alappuzha	40061	204479	64438	92049	79814	121763
Kottayam	21896	247708	17387	57875	53018	139203
Idukki	6032	293923	1948	19301	7971	59961
Ernakulam	57041	232624	122721	94656	229505	136861
Thrissur	35113	280259	62459	127670	109969	189268
Palakkad	32888	442238	22817	80216	58353	149851
Malappuram	21507	344501	8410	75729	29802	191537
Kozhikode	42203	169017	66509	55633	131411	144232
Wayanad	3724	167707	875	10841	3349	40957
Kannur	60981	189712	95125	30162	130385	84022
Kasaragod	15229	147364	14925	63849	21048	64085
Kerala	453895	3532060	570146	938477	1100181	1706328
India	9205034	183887070	19182736	15031948	35255144	23370561

Source: census data 1991 (primary abstract table)

A 4.5: Sector-wise and district -wise of urban-rural workers in Kerala and All India in 2001(in persons)

Districts/state	Primary		Secondary		Tertiary	
	Urban	Rural	Urban	Rural	Urban	Rural
Thiruvananthapuram	52284	259753	85960	203840	215342	231980
Kollam	25264	237727	49064	226810	70570	207730
Pathanamthitta	6940	160661	6712	56415	20178	112885
Alappuzha	31231	185981	145018	115536	93754	152655
Kottayam	12190	238037	22554	110850	59088	199325
Idukki	4501	342468	3240	35470	10336	83415
Ernakulam	46418	238874	174220	165565	283272	210610
Thrissur	32749	232392	87182	192595	146564	262550
Palakkad	23261	449380	31134	149195	67684	232285
Malappuram	20436	317305	19390	171320	45892	301300
Kozhikode	45126	183053	99752	112990	169614	192995
Wayanad	4774	205955	2010	25895	5852	61695
Kannur	57208	221167	129558	75445	171346	121240
Kasaragod	15055	157449	26200	101645	34008	84995
Kerala	377437	3430202	833898	1792325	1393500	2455660
India	6937216	2.27E+08	4814262	12142680	80527176	70662425

Source: census data 2001 (primary abstract table)

A 4.6: Sector-wise and district -wise of urban-rural workers in Kerala and All India in 2011(in persons)

Districts/state	Primary		Secondary		Tertiary	
	Urban	Rural	Urban	Rural	Urban	Rural
Thiruvananthapuram	66549	165406	134986	192148	449628	225008
Kollam	25855	122344	107402	210968	265119	178374
Pathanamthitta	5332	141851	17272	89614	18282	119825
Alappuzha	35092	90415	144818	137195	252297	142487
Kottayam	28291	227291	43973	122159	110938	191076
Idukki	3928	208494	5279	142465	8497	146997
Ernakulam	42365	104298	259840	149158	528485	164278
Thrissur	82618	104775	211507	111727	419943	161375
Palakkad	11000	257155	95328	244967	129248	305018
Malappuram	65871	122948	109830	205812	272913	284080
Kozhikode	25968	84727	229847	119872	377548	112051
Wayanad	4396	136145	1638	72807	6017	118713
Kannur	56160	147186	204247	96274	241921	79110
Kasaragod	22001	164512	46240	81249	92721	54717
Kerala	459569	1990812	1661518	2023126	3155249	2322191
India	10099071	2.16E+08	46477444	66615202	79163684	51867560

Source: census data 2011 (primary abstract table)

A 4.7 :District-wise and Sector-wise Net District Domestic Product at Current Prices and labour productivity in Kerala 1990-91

Districts/State	Primary			Secondary			Tertiary		
	Total WF	NDDP	LP*	Total WF	NDDP	LP	Total WF	NDDP	LP
Thiruvananthapuram	421857	28152	6673	141899	28376	19997	324857	59417	18290
Kollam	315423	37005	11732	148470	22648	15254	208819	37219	17824
Pathanamthitta	192468	18831	9784	32659	11738	35941	96468	19921	20650
Alappuzha	244540	24414	9984	156487	20490	13094	201577	34122	16928
Kottayam	269604	30074	11155	75262	10594	14076	192221	35150	18286
Idukki	299955	25930	8645	21249	19931	93797	67932	11154	16419
Ernakulam	289665	38316	13228	217377	65209	29998	366366	63699	17387
Thrissur	315372	29928	9490	190129	29538	15536	299237	48645	16256
Palakkad	475126	25731	5416	103033	17622	17103	208204	33377	16031
Malappuram	366008	27090	7401	84139	10318	12263	221339	32969	14895
Kozhikode	211220	25692	12164	122142	30655	25098	275643	44853	16272
Wayanad	171431	17810	10389	11716	4987	42566	44306	6952	15691
Kannur	250693	28712	11453	125287	18102	14448	214407	36503	17025
Kasaragod	162593	14643	9006	78774	8103	10286	85133	15233	17893
Kerala	3985955	372328	9341	1508623	298311	19774	2806509	479214	17075
India	193092104	14025101	7263	34214684	10302004	30110	58625705	23579611	40221

Source : census data 1991 used for Total Work Force(number of persons), NDDP at current prices (Rs lakhs) taken from economic review 1993-94,published by planning commission. Government of Kerala . *Note * Labour Productivity(LP) can be calculated by dividing Net District Domestic Product to the total work force of an economy.*

A 4.8: District-wise and sector-wise Net Domestic Product and labour productivity of Kerala 2000-01

Districts/State	Primary			Secondary			Tertiary		
	Total WF	NDDP	LP	Total WF	NDDP	LP	Total WF	NDDP	LP
Thiruvananthapuram	312037	121331	38884	289800	138094	47651	447322	411571	92008
Kollam	262991	145167	55198	275874	117540	42606	278300	249842	89774
Pathanamthitta	167601	80951	48300	63127	34433	54546	133063	125357	94209
Alappuzha	217212	71896	33099	260554	119592	45899	246409	234140	95021
Kottayam	250227	105735	42256	133404	73150	54833	258413	245354	94946
Idukki	346969	148603	42829	38710	27176	70204	93751	85071	90741
Ernakulam	285292	145018	50831	339785	207065	60940	493882	413786	83782
Thrissur	265141	115536	43575	279777	157354	56243	409114	352221	86094
Palakkad	472641	117222	24801	180329	85540	47436	299969	245698	81908
Malappuram	337741	132724	39298	190710	80696	42313	347192	269892	77736
Kozhikode	228179	137526	60271	212742	118454	55680	362609	315958	87135
Wayanad	210729	91250	43302	27905	11553	41401	67547	71006	105121
Kannur	278375	117947	42370	205003	105947	51681	292586	243586	83253
Kasaragod	172504	75041	43501	127845	57837	45240	119003	106002	89075
Kerala	3807639	1605947	42177	2626223	1334431	50812	3849160	3369484	87538
India	234088181	41886421	17893	16956942	36540745	215491	151189601	100957934	66776

Source : census data 2001 used for Total Work Force(number of persons), NDDP at current prices (Rs lakhs) taken from economic review 2002-03,published by planning commission. Government of Kerala.

A 4.9 : District-wise and sector-wise Net Domestic Product and labour productivity of Kerala 2010-11

Districts/state	Primary			Secondary			Tertiary		
	Total WF	NDDP	LP	Total WF	NDDP	LP	Total WF	NDDP	LP
Thiruvananthapuram	231955	241304	104031	327134	583627	178406	674636	1706843	253002
Kollam	148199	334116	225451	318370	298227	93673	443493	1172795	264445
Pathanamthitta	147183	210060	142720	106886	127076	118889	138107	633601	458775
Alappuzha	125507	197488	157352	282013	305640	108378	394784	1030647	261066
Kottayam	255582	355356	139038	166132	272220	163858	302014	1035814	342969
Idukki	212422	328640	154711	147744	114493	77494	155494	456868	293817
Ernakulam	146663	379381	258675	408998	1148719	280862	692763	1816653	262233
Thrissur	187393	217801	116227	323234	513316	158806	581318	1571932	270408
Palakkad	268155	301055	112269	340295	394911	116050	434266	1141027	262748
Malappuram	188819	329977	174758	315642	329866	104506	556993	1266367	227358
Kozhikode	110695	211658	191208	349719	452004	129248	489599	1436549	293413
Wayanad	140541	123201	87662	74445	52463	70472	124730	299985	240507
Kannur	203346	227353	111806	300521	335591	111670	321031	1198988	373480
Kasaragod	186513	167187	89638	127489	104946	82318	147438	516839	350547
Kerala	2450381	3624577	147919	3684644	5033099	136597	5477440	15284908	279052
India	226029975	123154406	54486	113092646	11796349	10431	131031244	407681314	311133

Source : Census data 2011and WPR estimated by NSSO 68th round unit data are used for estimating Total Work Force(number of persons)in each district, NDDP at current prices (Rs lakhs) 2010-11 taken from state income report 2004-05 series. ,published by economics and statistics department , Government of Kerala.

A 4.10 :District-wise and sector-wise of Urban-Rural Income to Net District Domestic Product of Kerala 1990-91(*Rs in lakhs*)

Districts/State	Primary			Secondary			Tertiary			Total		
	UNDP*	RNDP*	Total NDDP*	UNDP	RNDP	Total NDDP	UNDP	RNDP	Total NDDP	UNDP	RNDP	Total NDDP
Thiruvananthapuram	4712	23440	28152	10731	17644	28376	30989	28427	59416	46433	69511	115945
Kollam	3451	33554	37005	5134	17513	22648	10249	26971	37220	18835	78037	96872
Pathanamthitta	1681	17150	18831	1872	9866	11738	3845	16075	19921	7398	43091	50490
Alappuzha	4000	20414	24414	8438	12053	20490	13511	20612	34123	25948	53079	79026
Kottayam	2442	27632	30074	2447	8146	10594	9695	25455	35150	14585	61233	75818
Idukki	521	25409	25930	1827	18104	19931	1309	9845	11154	3657	53357	57015
Ernakulam	7545	30771	38316	36814	28395	65209	39904	23796	63700	84263	82962	167224
Thrissur	3332	26596	29928	9704	19835	29538	17877	30767	48644	30912	77198	108111
Palakkad	1781	23950	25731	3902	13719	17622	9355	24023	33377	15038	61692	76730
Malappuram	1592	25498	27090	1031	9287	10318	4439	28529	32968	7062	63314	70377
Kozhikode	5133	20559	25692	16692	13963	30655	21383	23469	44853	43209	57991	101200
Wayanad	387	17423	17810	372	4615	4987	525	6427	6952	1285	28464	29749
Kannur	6984	21728	28712	13744	4358	18101	22198	14305	36503	42926	40390	83317
Kasaragod	1372	13271	14643	1535	6568	8103	3766	11467	15233	6673	31306	37979
Kerala	42398	329930	372328	112741	185574	298315	187856	291356	479211	342995	806860	1149853
India	668601	13356500	14025101	5775901	4526103	10302004	14179831	9399780	23579611	20624333	27282383	47906716

*Source:estimated by the scholar. Note * UNDP- Urban Net Domestic Product at current price, RNDP-Rural Net Domestic Product at current price , NDDP-Net District Domestic Price at current price in 1990-91*

A 4.11:District-wise and sector-wise of Urban-Rural Income to Net District Domestic Product of Kerala 2000-01 (*Rs in lakhs*)

Districts/state	Primary			Secondary			Tertiary			Total		
	UNDP*	RNDP*	Total NDDP*	UNDP	RNDP	Total NDDP	UNDP	RNDP	Total NDDP	UNDP	RNDP	Total NDDP
Thiruvananthapuram	20330	101001	121331	40961	97133	138094	198131	213440	411571	259422	411574	670996
Kollam	13945	131222	145167	20904	96636	117540	63354	186488	249842	98204	414345	512549
Pathanamthitta	3352	77599	80951	3661	30772	34433	19009	106348	125357	26023	214718	240741
Alappuzha	10337	61559	71896	66562	53030	119592	89086	145054	234140	165985	259643	425628
Kottayam	5151	100584	105735	12367	60783	73150	56102	189252	245354	73620	350619	424239
Idukki	1928	146675	148603	2275	24901	27176	9379	75692	85071	13581	247269	260850
Ernakulam	23595	121423	145018	106170	100895	207065	237332	176454	413786	367097	398772	765869
Thrissur	14270	101266	115536	49033	108321	157354	126182	226039	352221	189486	435625	625111
Palakkad	5769	111453	117222	14769	70771	85540	55438	190260	245698	75976	372484	448460
Malappuram	8031	124693	132724	8205	72491	80696	35674	234218	269892	51910	431402	483312
Kozhikode	27198	110328	137526	55542	62912	118454	147793	168165	315958	230532	341406	571938
Wayanad	2067	89183	91250	832	10721	11553	6152	64854	71006	9051	164758	173809
Kannur	24239	93708	117947	66956	38991	105947	142650	100936	243586	233846	233634	467480
Kasaragod	6549	68492	75041	11853	45984	57837	30293	75709	106002	48695	190185	238880
Kerala	159192	1446755	1605947	423719	910712	1334431	1219844	2149640	3369484	1802754	4507108	6309862
India	1241306	40645115	41886421	10374319	26166426	36540745	53772596	47185338	100957934	65388221	113996879	179385100

*Source:estimated by the scholar.Note * UNDP- Urban Net Domestic Product at current price, RNDP-Rural Net Domestic Product at current price , NDDP-Net District Domestic Price at   current price in 2000-01*

A 4.12: District-wise and sector-wise of Urban-Rural Income to Net District Domestic Product of Kerala 2010-11(*Rs in lakhs*)

Districts/State	Primary			Secondary			Tertiary			Total		
	UNDP*	RNDP*	Total NDDP*	UNDP	RNDP	Total NDDP	UNDP	RNDP	Total NDDP	UNDP	RNDP	Total NDDP
Thiruvananthapuram	69231	172073	241304	240823	342804	583627	1137568	569275	1706843	1447623	1084151	2531774
Kollam	58290	275826	334116	100607	197620	298227	701094	471701	1172795	859991	945147	1805138
Pathanamthitta	7610	202450	210060	20535	106541	127076	83873	549728	633601	112018	858719	970737
Alappuzha	55218	142270	197488	156951	148689	305640	658662	371985	1030647	870831	662944	1533775
Kottayam	39335	316021	355356	72053	200167	272220	380483	655331	1035814	491871	1171519	1663390
Idukki	6077	322563	328640	4091	110402	114493	24966	431902	456868	35134	864867	900001
Ernakulam	109588	269793	379381	729791	418928	1148719	1385862	430791	1816653	2225241	1119512	3344753
Thrissur	96024	121777	217801	335886	177430	513316	1135561	436371	1571932	1567471	735578	2303049
Palakkad	12350	288705	301055	110628	284283	394911	339597	801430	1141027	462574	1374419	1836993
Malappuram	115115	214862	329977	114779	215087	329866	620489	645878	1266367	850383	1075827	1926210
Kozhikode	49653	162005	211658	297072	154932	452004	1107776	328773	1436549	1454501	645710	2100211
Wayanad	3854	119347	123201	1154	51309	52463	14471	285514	299985	19479	456170	475649
Kannur	62790	164563	227353	228082	107509	335591	903528	295460	1198988	1194400	567532	1761932
Kasaragod	19721	147466	167187	38064	66882	104946	325030	191809	516839	382815	406157	788972
Kerala	679789	2944788	3624577	2269577	2763522	5033099	8804787	6480121	15284908	11754154	12188430	23942584
India	5218451	111577087	116795538	48479206	69484288	117963493	246304269	161377045	407681314	300001926	342438420	642440345

*Source:estimated by the scholar.Note * UNDP- Urban Net Domestic Product at current price, RNDP-Rural Net Domestic Product at current price , NDDP-*

Net District Domestic Price at current price in 2010-11

A 4.13: District-wise of Urban, Rural, and total Per Capita Income at current prices of Kerala (in Rs)

Districts	1990-91			2000-01			2010-11		
	UPCI*	RPCI*	PCI*	UPCI	RPCI	PCI	UPCI	RPCI	PCI
Thiruvananthapuram	4651	3568	3935	23764	19208	20746	81358	70954	76551
Kollam	4223	3978	4024	21075	19552	19826	72592	65407	68644
Pathanamthitta	4772	4170	4249	21020	19340	19509	85255	80696	81197
Alappuzha	4256	3814	3949	26682	17444	20166	75999	67918	72282
Kottayam	4545	4062	4147	24556	21200	21715	86796	82928	84036
Idukki	7188	5195	5289	23582	23074	23100	67647	81938	81268
Ernakulam	6136	5745	5936	24853	24484	24659	99670	106899	101979
Thrissur	4292	3827	3950	22573	20406	21018	75027	72036	74045
Palakkad	4015	3073	3221	21307	16475	17133	68313	64413	65353
Malappuram	2500	2250	2273	14574	13196	13331	46822	46882	46856
Kozhikode	4302	3590	3863	20935	19202	19865	70109	63622	67978
Wayanad	5599	4385	4426	30566	21938	22266	61642	58114	58250
Kannur	3747	3651	3700	19280	19534	19406	72700	64294	69762
Kasaragod	3787	3497	3544	20836	19599	19839	75783	50932	60569
Kerala	4466	3767	3952	21807	19119	19817	73774	69827	71711
India	9480	4339	5660	22915	15370	17467	68059	34327	44838

Source:estimated by the scholar.Note* UPCI denotes Urban Per Capita Income ,RPCI denoted Rural Per Capita Income and PCI denotes Per Capita Income .

A 4.14 :District-wise of Urban and Rural Worker Population Ratio in Kerala and all India (in %)

District	1991		2001		2011	
	urban	rural	urban	rural	urban	rural
Thiruvananthapuram	29.42	30.53	32.39	32.46	36.60	38.13
Kollam	27.03	28.15	31.10	31.72	33.63	35.41
Pathanamthitta	26.45	27.15	27.33	29.72	31.12	33.01
Alappuzha	30.23	30.06	43.45	30.53	37.72	37.92
Kottayam	28.76	29.51	31.30	33.15	32.33	38.26
Idukki	31.35	36.33	31.39	43.05	34.09	47.18
Ernakulam	29.80	32.14	34.12	37.76	37.21	39.89
Thrissur	28.82	29.61	31.75	32.21	34.18	37.01
Palakkad	30.45	33.49	34.24	36.75	34.79	37.83
Malappuram	21.14	21.74	24.07	24.16	24.70	26.71
Kozhikode	23.90	22.83	28.56	27.51	30.53	31.20
Wayanad	34.63	33.81	42.67	39.09	38.13	41.74
Kannur	25.01	27.47	29.53	34.94	30.58	36.54
Kasaragod	29.05	30.75	32.20	35.46	31.86	37.68
Kerala	27.66	28.84	31.51	32.57	33.12	36.30
India	29.25	35.35	32.34	41.79	36.00	40.14

Source :Census tables 1991,2001,2011

A 4.15 :District-wise urban-rural average MPCE in Kerala (MMRP* in Rs)

District/state	Urban			Rural			urban-rural gap MPCE
	Food	Non-Food	Total	Food	Non-Food	Total	
Thiruvananthapuram	1616.19	2526.01	4142.2	1226.34	1425.39	2651.73	1490.47
Kollam	1277.11	1364.66	2641.77	1263.14	1319.75	2582.89	58.88
Pathanamthitta	1630.32	1841.21	3471.53	1601.7	1479.14	3080.84	390.69
Alappuzha	1668.28	1992.7	3660.98	1346.53	1603.46	2949.99	710.99
Kottayam	1402.9	2068.04	3470.94	1291.66	1870.88	3162.54	308.4
Idukki	1501.7	2473.19	3974.89	1321.91	1503.45	2825.36	1149.53
Ernakulam	1344.16	2402.42	3746.58	1218.53	1566.08	2784.61	961.97
Thrissur	1168.6	2321.63	3490.23	1078.59	1706.43	2785.02	705.21
Palakkad	1142.84	1677.25	2820.09	1202.16	1166.72	2368.88	451.21
Malappuram	965.3	1288.53	2253.83	889.36	1312.76	2202.12	51.71
Kozhikode	1104.68	1280.45	2385.13	1020.05	1169.82	2189.87	195.26
Wayanad	1037.97	1434.24	2472.21	853.14	1127.13	1980.27	491.94
Kannur	1027.48	1272.95	2300.43	986.28	1127	2113.28	187.15
Kasaragod	1033.4	1204.91	2238.31	926.57	1024.09	1950.66	287.65
Kerala	1276.42	1879.43	3155.85	1141.56	1391.75	2533.31	622.54
India	1130.9	1499.1	2630	757.9	672.1	1430	1200

Source: NSSO 68th round (2011-12). Note: *Modified Mixed Reference Period*

A 5.1:Residential Housing Condition in Kerala and India (per cent)

Districts	URBAN						RURAL					
	2001			2011			2001			2011		
	Good	Livable	Worst*	Good	Livable	Worst	Good	Livable	Worst	Good	Livable	Worst
Thiruvananthapuram	61	31	8	68	26	6	45	42	13	56	34	10
Kollam	60	31	9	70	24	5	55	34	12	63	30	7
Pathanamthitta	67	28	5	74	24	3	60	32	8	65	30	5
Alappuzha	63	29	9	67	27	7	59	31	10	62	30	8
Kottayam	60	35	5	71	26	3	52	40	9	60	35	5
Idukki	63	31	6	75	23	1	43	45	12	48	44	8
Ernakulam	72	24	4	75	22	3	66	28	6	65	30	5
Thrissur	57	37	6	68	28	4	51	41	8	60	35	5
Palakkad	58	37	5	69	28	3	48	46	7	59	35	5
Malappuram	66	30	4	76	21	3	56	38	6	68	27	4
Kozhikode	69	26	5	77	19	4	57	35	8	66	27	7
Wayanad	60	30	10	55	40	6	50	39	11	56	35	9
Kannur	69	27	3	79	19	2	48	43	8	63	31	6
Kasaragod	63	31	6	79	18	3	47	43	10	61	32	8
Kerala	65	29	6	72	24	4	53	38	9	61	33	6
All India	64	32	4	69	28	3	45	49	6	46	47	7

Source:Census of India(2001,2011)from,H series; the Tables on Houses,Household Amenities and Assets. * *noted as 'dilapidated' in the census table.*

A 5.2:Overall performance of districts in the Composite Development Index in Kerala(URBAN+ RURAL)

District/ state	Overall performance				
	Economic Index	Education Index	Health Index	Amenities Index	Compound Index
Thiruvananthapuram	0.603	0.561	0.409	0.639	0.553
Kollam	0.482	0.519	0.568	0.562	0.533
Pathanamthitta	0.530	0.764	0.627	0.603	0.631
Alappuzha	0.517	0.657	0.287	0.541	0.501
Kottayam	0.616	0.741	0.378	0.618	0.588
Idukki	0.603	0.584	0.375	0.551	0.528
Ernakulam	0.695	0.763	0.323	0.752	0.633
Thrissur	0.628	0.644	0.393	0.661	0.581
Palakkad	0.552	0.282	0.463	0.549	0.462
Malappuram	0.334	0.357	0.541	0.672	0.476
Kozhikode	0.428	0.546	0.454	0.559	0.497
Wayanad	0.459	0.278	0.339	0.392	0.367
Kannur	0.446	0.540	0.652	0.527	0.541
Kasaragod	0.456	0.226	0.446	0.367	0.374
Kerala	0.536	0.557	0.460	0.593	0.536

Source:estimated by the scholar

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