CHAPTER ONE

Urbanization

1.1. Definition and Concepts

An urban area is spatial concentration of people who are working in non-agricultural activities. The essential characteristic is that urban means non-agricultural. Urban can also be explained as a fairly multifaceted concept. Criteria used to define urban can include population size, space, density, and economic organization. Typically, urban is simply defined by some baseline size, like 20 000 people. The definition of an urban area changes from country to country. In general, there are no standards, and each country develops its own set of criteria for distinguishing cities or urban areas. Generally different countries of the world employ different criteria to define an urban area because the economic, political, social and cultural realities are basically different.

There are several criteria used to define an urban area, (urban function of population), across the world. These are:

i. Specifically named settlement.
ii. Administrative status
iii. A minimum population size
iv. A contiguity element; include or exclude certain areas based on some criteria.
v. A minimum population density
vi. The proportion of population engaged in non-agricultural activities
vii. Functional character-urban or rural function. Urban function focuses on secondary and tertiary activities, while rural function focusing on primary activities.

Urbanization refers to the overall increase in the proportion of the population living in urban areas as well as the process by which large number of the people have become permanently concentrated in relatively small areas forming towns/cities. While specific definitions of urban differ from one country to another, in all regions urbanization has been characterized by demographic shifts from rural to cities; growth of urban population; and overall shifts in economy from farming towards industry, technology and service.

Urbanization is a process involving two phases or aspects

1) The movement of people from rural to urban places where they engage in primarily non rural functions or occupations.
2) The change in their lifestyle from rural to urban with its associated values, attitudes, and behaviors.

The important variable in the former are population density and economic functions; while the important variables in the latter depend on social, psychological and behavioral factors. The two aspects are supportive. *Urbanization,* in conventional terms, refers to the process through which society is transformed from the one that is predominantly rural in economy, culture and lifestyle, to the one that is predominantly urban. It is also a process of territorial reorganization in that it shifts the locations, as well as the characteristics of population and production activities.

Statistically, urbanization reflects an increasing proportion of the population living in settlements defined as urban, primarily through net rural to urban migration. The level of urbanization is the percentage of the total population living in towns and cities while the rate of urbanization is the rate at which it grows. Urbanization is a social process as well as an economic and territorial one. It transforms the role of the family, relationships within families, and concepts of individual and social responsibility.

Urban: Settlements or localities defined as urban by national statistical agencies.
Metropolis: is properly the chief city (but not necessarily the capital) of a country, state or region, but it is often loosely used to refer to any other large cities. It is the legal city together with the built up area surrounding it. The metropolitan area is generally regarded as a central city and peripheral jurisdiction plus all surrounding territory (urban or rural) integrated with the central city.
Metropolitan Fringe- It is on the outskirts of many industrial cities which are meant for commuter housing. Distinctive life-styles prevail between middle class commuters and old working class.

City: the term city is a political designation, referring to a place governed by some kind of administrative body or organization. Thus, the term in itself has no size connotation, although a city is larger than a town or a village. Cities become possible when an agricultural surplus

develops together with improved means of transportation and tend to be located at breaks in transportation.

The city pulls people from various corners towards its nucleus. The rural people faced with various economic problems are attracted by the city and start moving towards the cities. The city provides ample opportunities for personal advancement. It is the centre of brisk economic, commercial, artistic, literary, political, educational, technological, scientific and other activities. Cities are not only the controlling centers of their societies but also the source of innovation and change. They act as the source of new ideas for production, the pace -setters for consumption, guardians of culture and conservers of order in society. Consensus and continuity in a society are maintained from the city centers.

Mega city: Mega city is defined by the United Nations as a city which has a population of 10 million or more.

Primate city: It is defined by size and function. The term derives from urban primacy, a concept first developed in the late 1930s to refer to the tendency for countries to have one city that is at least twice as large as the second largest city and has dominance over the country's economic, political and cultural life. This type of city is found throughout the world, but is especially prevalent in less developed countries. It is an urban form now emerging in developing nations where one city dominates the entire society.

Town: The town is intermediate between rural and urban communities. It is too large for all inhabitants to be acquainted with one another, yet small enough for informal relationships to predominate. Social behavior more closely resembles the rural than the metropolitan city pattern.

Suburbanization: The growth of a ring of relatively small communities around the central city and the movement of urban population to them. It is contemporarily associated with urban sprawl and deterioration of the central city.

Suburb:-is a low density area outside the city and dominated by commuters (people who live in the peripheries and work in the city center). It is a community on the urban fringe. These are of two types- residential and satellite

Exurbia:-is the suburb of suburbs.

Urban growth: The increase in the number of people who live in towns and cities, measured either in relative or absolute terms. It refers to the growth rate of urban areas (physical size) and the total population of urban areas.

Natural increase: The difference between the number of births and number of deaths in a given population.

*First urban revolution***:** The historical emergence of cities and urbanism.

Urbanism: urbanism is abroad concept which generally refers to all aspects-political, economic, social-etc of the urban way of life. Unlike urbanization, urbanism is not a process of urban growth, but rather the end result of urbanization. It is a pattern of behavior, relationships and modes of thought and characteristic of urban life.

Counter urbanization is a demographic and social process whereby people move from urban areas to rural areas. It first took place as a reaction to inner-city deprivation and overcrowding. The process involves the moving of the population away from urban areas such as towns and cities to a new town, a new estate, a commuter town or a village. The concept of counter urbanization was first set forth by Berry (1976) to describe the new phenomenon of urbanization in the USA. In USA counter-urbanization had replaced urbanization as the dominant force shaping settlement patterns during 1970s and 1980s. During these times a similar trend was observed in other Western countries. The process of counter-urbanization has, as its essence, decreasing size and decreasing density of urban settlements. Many urban agglomerations in the more developed regions and some less developed regions experienced the phenomenon of slow or negative growth of their populations during the 1970s and 1980s. Since 1950 this process has been occurring in more economically developed countries. There are four main reasons for counter urbanization.

1. The increase in car ownership over the last 40 years means people are more mobile. This has led to an increase in commuting. Also, the growth in information technology i.e. more people can work from home. Developments in rural electrification and rural Internet bring to rural areas some of the amenities of urbanity;
2. Urban areas are becoming increasing unpleasant place to live. This is the result of pollution, crime and traffic congestion.
3. More people tend to move when they retire
4. New business parks on the edges of cities (on green field sites) mean people no longer have to travel to the city center. People now prefer to live on the outskirt of the city to be near where they work.

1.2 Urban origins

It is important to put the study of towns and cities in historical context. We can only understand a city, old or young, if we know something about the reasons behind its growth; about the rate at which it has grown; and about the processes that have contributed to its growth.

In broad terms, the earliest cities have developed in the Credible of Civilization or the Fertile Crescent made up by the Tigris, Euphrates and Nile river valleys of the Middle East. The rise of urban civilization dates back from 3500-3000 BC in Mesopotamia. With regard to the Nile valley, the main period of urban development dates from around 3100 *B.C*. and was linked with the dynasties of pharaohs, centered on such cities as Memphis and Thebes. Cities in Indus valley appeared around 2500 *B.C*. the two well-documented cities being Mohenjo-Daro and Harappa. In China, urban development is thought to have started around 1500BC on the alluvial plains of Yellow River.

Other areas of independent urbanism include Mesoamerica which seem to date from around 1000 *B.C*. and Andean America (Central Andes) date from 500BC. Meanwhile, the original Middle Eastern urban hearth continued to produce successive generations of urbanized world-empires, including those of Greece, Rome, and Byzantium. In early medieval Europe, most regions, however, did support at least a few small towns.

In sum, the current view is that there were at least seven regions of primary urban generation, that is, areas of apparently independent urban development. These are all in the present day third world. These include:

1. Mesopotamia
2. Egypt
3. Indus valley
4. North china plain
5. Mesoamerica (Central America)
6. Central Andes (South America)
7. South West Nigeria

Together these areas may be regarded as forming the so-called pre-industrial civilization. Four main explanations for the initial emergence of towns and cities may be identified.

1. ***Hydraulic or environmental-ecological theses*:** suggesting that cities occurred due to the presence of favorable physical environment which allowed the extraction of an agricultural surplus.

2. ***Economic theories****:* imply that the city was a product of the articulation of long distance trade and regional market functions.
3. ***Military purpose****:* posited that towns grew for military purposes as defensive strong points.
4. ***Religious theories****:* envisages that urban development occurred about the foci afforded by shrines and temples.

During the Paleolithic or Old Stone Age, human groups entirely relied on hunting, fishing and gathering. Then, during 10,000-8000 BC, the Neolithic revolution commenced in the Middle East. During this period, humans first began to domesticate animals and to plant, cultivate and improve edible grasses and roots. In other words, humans started to modify the environment rather than merely adapting to it, so that the possibility of establishing permanent settlements came about. During the Neolithic revolution, humans cultivated Wheat, Barley and manufactured pots. These and a whole series of subsequent inventions and discoveries, such as the plough, the wheeled cart, the sailing boat, the chemical process of smelting equipped humans for urban life. Simply put, the Neolithic Revolution could have led more settlements and a higher density of population.

In general, it is the joint actions of the following factors that helped to the emergence of towns:

a. **The development of settled agricultural economy**: the necessary condition was the production of surplus storable food. When agriculture becomes prosperity, that is, beyond the level of subsistence, security of the food for the society achieved. This brought the transformation of the human kind from pure dependence on nature to the domestication of animals and plants. This surplus product resulted in the emergence of other classes of the society that could buy and consume, by buying the products from those peasants, that means, in order to have urban revolution, there must be rural revolution; meaning, there must be development of agricultural revolution.
b. **A change in technology**: the things which were used to change production included tool fashioning such as stone, copper bronze, iron etc. to fight nature, man used his technology even though they were rudimentary.
c. **Improvement in transportation and communication on land and sea**: human portage, taming of animals, sea sailing boats, ships railways, vehicles, airplane. Generally, the

interaction between different people in the world (giving and taking process) gave rise to the emergence of towns.

d. **Population increase**: as population increases, there arise other jobs which differ from agriculture, e.g. trade.
e. **Stability**: it is very important to work in a calm climate. This brought time for innovation.
f. **Market potential**: exchange capacity between urban and rural
g. **Increased education**: the more you are knowledgeable, the more you will be ambitious to live in a better town.

1.3 Causes of Urbanization

Historically, urbanization has been closely connected with industrialization. When more and more inanimate sources of energy were used to enhance human productivity (industrialization), surpluses increased in both agriculture and industry. Larger and larger proportions of a population could live in cities. Economic forces were such that cities became the ideal places to locate factories and their workers.

Urbanization occurs because people move from rural areas (countryside) to urban areas (towns and cities). This usually occurs when a country is still developing.

Table 1: Levels of urbanization in 1950 and 1990

	1950	**1990**
World	30%	51%
MEDCs	53%	74%
LEDCs	17%	34%

Prior to 1950 the majority of urbanization occurred in MEDCs (more economically developed countries). Rapid urbanization took place during the period of industrialization that took place in Europe and North America in the nineteenth and early twentieth century. Many people moved from rural to urban areas to get jobs in the rapidly expanding industries in many large towns and cities. Since 1950 urbanization has slowed in most MEDCs, and now some of the biggest cities

are losing population as people move away from the city to rural environments. This is known as counter-urbanization. Since 1950 the most rapid growth in urbanization has occurred in LEDCs (Less Economically Developed Countries) in South America, Africa and Asia. Between 1950 and 1990 the urban population living in LEDCs doubled. In developed countries the increase was less than half.

The main causes of urbanization in LEDCs since 1950 are:

1. **Rural to urban migration** is happening on a massive scale due to population pressure and lack of resources in rural areas. These are *'push' factors*. People living in rural areas are 'pulled' to the city. Often they believe that the standard of living in urban areas will be much better in urban areas. People also hope for well paid jobs, the greater opportunities to find casual or 'informal' work, better health care and education. These are *pull factors*. In general, the facilities like education, healthcare system, employment avenues, civic facilities and social welfare are reasons attracting people to urban areas.
2. **Natural increase** caused by a decrease in death rates while birth rates remain high.

1.4 Urban growth and the Urbanization Process

Urbanization is the movement of population from rural to urban areas and the resulting increasing proportion of a population that resides in urban rather than rural places. Generally, the proportion of a country's population that is urban (i.e. the level of urbanization) is closely associated with the level of economic development, particularly the degree of industrialization and the standard of living. In the advanced industrial economies today the urban proportion varies between 75 and 90 percent, in middle-income countries from 50 to 75 percent, and in the developing world from 10 to 50 percent. Recently, however, the long-standing association between levels of economic development and income per capita on the one hand and increases in the level of urbanization on the other has been broken. In many developing countries, unlike the industrialized world in the nineteenth century, the rate of urbanization has tended to out-pace the rate of economic growth. This has lead to a situation of over-urbanization, and the appearance of large mega cities, often with insufficient employment opportunities, inadequate services, and intense poverty.

1.5 Features/Characteristics of urban society

- **Heterogeneity:** Urban population is heterogeneous. It consists of various shades of people different castes, classes, ethnic groups, religions, etc. They are not all alike. Urban community is noteworthy for its diversity.
- **Anonymity:** Urbanities do not know each other intimately. Personal mutual acquaintance between the inhabitants which ordinarily found in a neighborhood is lacking. The sheer pressure of number marks for anonymity. Anonymity is a loss of identity and sense of belongingness. The heterogeneity of city life with its mixture of people of all races, castes, classes, creeds, occupations and ethnic origins heightens the sense of anonymity.
- **Mobility:** Urban life is dynamic. Social relations are temporary. Therefore, permanency does not develop in urban relations. There is a high rate of geographical as well as social mobility in urban areas.
- **Transience***:* An urban inhabitant's relation with others last only for a short time; he tends to forget his old acquaintances and develop relations with new people. Since he is not much attached to his neighbors' members of the social groups, he does not mind leaving them.
- **Formality of relations:** In urban social life, relations are not intimate and kinship based. Most routine social contacts in the city are impersonal and segmented. Formal politeness takes the place of genuine friendliness. The impersonality of urban life is a necessary and convenient way of urban living.
- **Social distance:** City people are physically crowded but socially distant. Social distance is a product of anonymity, impersonality and heterogeneity. Occupational differences may be even more important sources of social distance. Urbanites become nigh-dwellers, not neighbours. Apartment dwellers may live for years without any acquaintance with many of the other occupants.
- **Regimentation:** The city is always in hurry. The life (work and entertainment) in the urban community becomes 'clock regulated'. Order, regularity and the punctuality are the characteristics of urban life. On the streets, his movement is controlled by traffic lights, on railway stations and other places by elevators and escalators.

- **Materialism:** In the urban community the social existence of man revolves round wealth and material possessions. The worth of an urbanite today is being judged not by what he is but by what he has. Status symbols in the form of financial assets, salaries, costly home appliances count a lot for the urbanites.
- **Individualism:** The urbanites attach supreme importance to their own welfare and happiness. They hesitate to think or act for the good of others.

1.6 Location and Growth of cities (Site and Situation)

The study of settlement patterns is one of the most important aspects of urbanization studies. Settlements can range in size from a small village with a few hundred residents to a metropolitan city of over one million people. Site and situation are the two concepts used by different investigators of urban studies to answer different questions.

Site refers to the physical environment on which the city originated and evolved. The site is the actual location of a settlement on the earth and is composed of the physical characteristics of the landscape specific to the area. Site factors include things like landforms (i.e. is the area protected by mountains or is there a natural harbor present?), climate, vegetation types, availability of water, soil quality, minerals, and even wildlife. It describes the location of a city with respect to its soil, water supply and relief, or more still the actual point on which a settlement is built while situation describes the surrounds of the city in terms of other settlements, rivers, mountains and communication.

Situation refers to the relative location of a city with respect to other places with which it interacts. It also connotes a city's relation with other cities. Example it is centrally located at the mouth of a major river, or at a point of low transport costs. Site and situation are both important in examining the origins of a city, as well as its relation with others in an urban system. Site characteristics were probably more important in the location of ancient or pre-industrial cities than in modern industrial cities. Situation is defined as the location of a place relative to its surroundings and other places. Factors included in an area's situation include the accessibility of the location, the extent of a place's connections with another, and how close an area may be to raw materials if they are not located specifically on the site.

1.6.1 The Importance of Site and Situation

As nations around the world continue to develop, their sites and situations will play a large role in whether or not they will be successful and though today's ease of transportation and new technologies such as the Internet are bringing nations closer together, the physical landscape of an area as well as its location in relation to its desired market will still play a large role in whether or not such areas will grow to become the next great world city.

1.7 The Social Impacts of Urbanization

It is widely accepted that urbanization transforms societal organizations, the role of the family, demographic structures, the nature of work, and the way people choose to live and with whom. The following are some of the social impacts of urbanization.

- **Fertility rate:** Initially, the societal shift from rural to urban alters rates of natural population increase. There are no recorded examples of where this has not been true. Contrary to public perception, however, it first reduces the death rate, despite the often appalling living conditions in many cities, as in, for example, nineteenth-century Europe and North America and in present-day cities in the developing world. Only later does urbanization reduce the birth rate (i.e. the fertility rate). The time lag between declining death and birth rates initially means rapid urban population growth; subsequently, fertility rates drop sharply and the rate of growth of urban populations declines. As a result, families become smaller relatively quickly, not only because parents have fewer children on average, but also because the extended family typical of rural settings is much less common in urban areas. Children are clearly less useful in urban settlements, as units of labor and producers, than in rural settings, and are more expensive to house and feed. In fact, fertility levels in developed countries have dropped so low that cities are seldom capable of reproducing their own populations. They grow, if at all, largely through in-migration from other cities or from rural areas, the latter is now a largely depleted source of population in Western countries and increasingly through immigration.
- **Families and living arrangement:** The evolution to an urban society is also frequently equated with a decline in the status of the family, and with a proliferation of

nontraditional family forms and new types of households. By nontraditional we mean those families without two parents and/or without children.

- **Links to labor market:** This diversity in living arrangements and family composition in urban societies is also closely linked to shifts in the world of work in the urban economy and in occupations. Not only does urbanization involve obvious changes in employment and working life, it alters the relationships between households (the collective units of consumption) and labor markets (the production sector). Individuals work and earn wages, but it is households (and families) that spend those earnings. Thus, the composition of families and households influences the changing well-being of the individuals in those households as much as the occupational status of its members.
- **Domestic relations:** Such labor market changes are also interrelated, as cause and effect, with shifts in domestic relations inside the household and family. The impacts of these changes have been most obvious for married women. Not only has their involvement in the formal (paid) labor market increased, but so too has their economic position within the family. This gives women more autonomy in decision making. But for many women the challenge of balancing work, domestic responsibilities, and the imperatives of everyday urban life have increased, not decreased. Smaller families, and the dispersion of extended families in contemporary urbanized societies, have in combination also reduced the level of kinship support systems available to these women.

1.8 Functional classification of towns

Although most urban areas have at least a few workers in a wide range of occupations, the balances between different activities vary from city to city. As a result, urban occupations have often been used for classification of cities and towns into different functional types. The functional classifications of cities have long history. Functional classification of cities implies that various towns fall into different groups by virtue of the function they perform. The simple designation of towns as market town or seaport is a form of functional classification with the increasing of diversification of town's function that followed the industrial development of the 18^{th} and 19^{th} centuries. Such descriptive classification become more frequent and elaborate but

the purpose for which various classifications has been designated has not always been made clear by the authors.

1.8.1 General Description

This is the earliest stage in the analysis of town's function. Any approach to function often merely consisted of the subjective application of descriptive level. Urban settlements were categorized as manufacturing cities, commercial center, resort, university town, and so on without any real analysis of their occupational structure. In this case, classes are established in descriptive terms only and are allocated to the classes on a subjective basis. Apart from its very arbitrary nature, such a method of classification does not allow for the fact that most towns obvious function of not necessarily the most important.

Among the general descriptive classes of towns, the one made By M. Aurousseau (1921) was perhaps the best classification. His scheme recognized 6 classes of active towns which were then sub-divided:

Class 1 Administration

A. Capital city
B. Revenue town

Class 2 Defense cities

A. Fortress town
B. Garrison town
C. Naval town

Class 3: Culture

A. University towns
B. Cathedral towns
C. Art center
D. Pilgrimage center
E. Religious center

Class 4 Production

- Manufacturing

Class 5 Communication

A. Collection

- Mining
- Fishing
- Forestry

B. Transfer

- Market town
- Fall line town break of bulk towns
- Bridgehead towns
- Navigation towns

C. Distribution

- Export owns
- Import towns
- Supply towns

Class 6 Recreation

- Health resort
- Tourism
- Holiday

1.8.2 Statistical description

This stage in the consideration of town functions introduces objective material into the problem of classification. Most consistently used data have been occupation or employment ratios. There is a clear link between an employment group and town function. Numbers employed are not immediately important but rather the proportional place which an employment group takes in the sample of groups in the town.

If mining employs 30% of the total occupied population in the town, then this is a clear diagnosis of an important mining function and such figure can be referred as the diagnostic ratios. But there are difficulties in the equation of employment category and town function. These are:

1. Problem of reducing the many thousands of occupations into a limited number of significant groups. In this process, a large number of arbitrary decisions are made which the classifier has to accept on the principle that all the results will be similarly affected.
2. The same occupation group can mean different things in different countries.

The most widely quoted example was put forward in 1943 by Chauncy D. Harris, in his work in which a functional classification of the USA cities was outlined. Eight classes of towns: Manufacturing, Retail, Wholesale, Transport, Mining, University, Resort, and Retirement and Diversified were recognized. To classify a town into one of these groups, principles are followed. For example, transport center are defined as towns where transportation and communication contain at least 11% of gainful workers in transportation and communication and equals at least one-third the number in manufacturing and mechanical industries and at least two-thirds the number in trade. These criteria were set by simple empirical means on the basis of the experiences of the classifier and were used to classify towns into functional classes on the basis of the definition.

1.8.3 Statistical Analysis

This was the next step in functional classification. It was linked with the attempt to offset criticism of the sort directed at the previous scheme. This necessitated the classes being derived statistically from the raw data. The critical basis of Harris's classification is the comparison of the proportion employed in the city with the national average virtually on the same basis as the calculation of the location quotients. Hence, Nelson (1955) posed the question:

i. How large a percentage of the labour force must be employed in a particular service to make the performance of the service far enough above normal to warrant a separate classification?
ii. What is to be taken as normal?

The Nelson answered his question by defining normal as the mean or average for the whole country and the degree above normal was identified by using the standard deviation (SD). Diagnostic occupation groups were selected from the census returns. For each occupation group, the standard deviation from the mean for all the towns was calculated. Any town which then showed a percentage employment of more than mean plus one standard deviation was said to be significantly characterized by the function diagnosed by the occupation group.

Nelson measures further specialization by mean plus two standard deviation and mean plus three standard deviation. No more than three standard deviations were measured because the SD is properly only valid when the distribution about the mean is normal. For example, Butte, Montana, Mi32+3 indicates that, butte was a mining town with 32 percent of total employment and three standard deviation above the mean. Other schemes of functional classification of towns are Multivariate Analysis and Economic Base Studies.

CHAPTER TWO

Urbanization and Economic Development

2.1. Urban growth

Urban growth is the combined result of population growth, natural increase, migration, reclassification-annexation when the place where they live is reclassified as urban. Economic development advancing technology and agglomeration economies, specialization, political, cultural and social influences gives ways to development of cities.

Urban transformation or city growth evolves along cyclical dimension three phases or stages as explained below. Urbanization curve has the shape of an attenuated "S" each stage has different characteristics.

I. Initial stage

This stage is characterized by the following features:

- Population is fairly dispersed
- Economic activity is primarily rural and agricultural
- Urbanization increases gradually

It is characterized by fastest growth in the core of the city and this phase can be called urbanization.

II. Acceleration stage

On this stage,

- An increasing large share of the population resides in urban centers
- 25% to 70% or more of the total population is living in urban areas
- Economic activity becomes more localized and secondary; and tertiary economic sectors take an increased importance.

It is characterized by fastest growth in the ring around the core of the city; and this phase can be called suburbanization.

III. Terminal stage

In the third stage,

- urban population consists of about 60 or 70% of the total;
- remaining 40 or 30% of the rural population supply the needs of the urban dwellers;
- urbanization curve begins to flatten, approaching a ceiling of around 80%.
- functional equilibrium reaches rural and urban population at this level.

It is characterized by the population decline in the core and the ring, with the core closing more population than the ring. This phase can be called counter-urbanization.

Most of the cities in the more developed regions seem to be at the third stage of this cycle of growth. There are three major theories which explain the growth and development of urban area in less developed countries. These are

(1). Modernization theory

It was developed by Rostow in 1959. It was the philosophy which believes that less developed countries urban development is a convergent evolutionary process in which diffusion of economic and cultural innovation come from the west.

(2). Dependency theory:

It was developed by Frank (1967) in Latin America. The fundamental premise of this theory was that development and under development was different outcomes of the same process and cities played a central role in this process. The chain of surplus extraction established by colonial powers created both centers and peripheries on the world scale. At the world scale the less developed countries supplied the metropolitan countries with raw materials and imported manufactured products through major port cities.

(3).World system theory

It was first developed by Waller Steins in 1974. He has identified the following three types of national position within the world.

a. A dominant core of North America and West Europe.

b. A semi-periphery of richer leading developing countries with mineral exports and/or limited industrialization for export.
c. Periphery of poor countries that had been in the past continues to be exploited as a result of their involvement in the global economy.

This theory states that

1. countries may change their relative position and are not doomed to perpetual underdevelopment
2. In addition, the size, role and characteristics of individual cities reflect the world position of their society.

2.2. De-industrialization and decentralization

2.2.1. Definition and concepts

De-industrialization (also spelled de-industrialisation) is a process of social and economic change caused by the removal or reduction of industrial capacity or activity in a country or region, especially heavy industry or manufacturing industry. It is an opposite of industrialization. There are multiple interpretations of what this process is.

1. De-industrialization can mean a straightforward decline in the output of manufactured goods or in employment in the manufacturing sector.
2. De-industrialization can mean a shift from manufacturing to the service sectors, so that manufacturing has a lower share of total output or employment.
3. De-industrialization can mean that manufactured goods comprise a declining share of external trade, so that there is a progressive failure to achieve a sufficient surplus of exports over imports to maintain an economy in external balance.
4. De-industrialization can be defined as a continuing state of balance-of-trade deficit (as described in the third definition above) that accumulates to the extent that a country or region is unable to pay for necessary imports to sustain further production of goods, thus initiating a further downward spiral of economic decline.

Amongst developed countries industry once the engine room of economic growth, is now being displaced by service-led growth. The process of de-industrialization, strictly defined as an

absolute loss of jobs in industrial activities. It is not uniform across the range of manufacturing or at the same rate in every region. It tends to be both regionally and industrial selective.

In conclusion, deindustrialization is not a negative phenomenon, but a natural consequence of further growth in advanced economies. The main reason for deindustrialization is the faster growth of productivity in manufacturing than in services. North-South trade has played very little role in deindustrialization. Trade among industrial countries (rather than between industrial countries and the developing world) accounts for some of the differences in employment structure between different advanced economies. Future growth within the developed world is likely to depend increasingly on productivity growth in services. The nature of the service sector is less suited to centralized wage bargaining.

2.3. Counter urbanization

Counter urbanization is a demographic and social process whereby people move from urban areas to rural areas. It first took place as a reaction to inner-city deprivation and overcrowding. The process involves the moving of the population away from urban areas such as towns and cities to a new town, a new estate, a commuter town or a village. The concept of counter urbanization was first set forth by Berry (1976) to describe the new phenomenon of urbanization in the USA. In USA counter-urbanization had replaced urbanization as the dominant force shaping settlement patterns during 1970s and 1980s. During these times a similar trend was observed in other Western countries. The process of counter-urbanization has, as its essence, decreasing size and decreasing density of urban settlements. Many urban agglomerations in the more developed regions and some less developed regions experienced the phenomenon of slow or negative growth of their populations during the 1970s and 1980s. Since 1950 this process has been occurring in more economically developed countries. There are four main reasons for counter urbanization.

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2. Urban areas are becoming increasing unpleasant place to live. This is the result of pollution, crime and traffic congestion.
3. More people tend to move when they retire
4. New business parks on the edges of cities (on green field sites) mean people no longer have to travel to the city center. People now prefer to live on the outskirt of the city to be near where they work.

2.4. Uneven development and Regional Inequalities

It is clear that, urbanization is frequently characterized by marked variations in economic development and welfare both across space and through time. Such differences between the urban and rural components of national space are leading to rural-to-urban migration and ultimately contributing to the natural increase of population that is being recorded in the urban areas of developing countries. Not only are urban areas as a whole generally becoming more prosperous in relative terms, but also large cities are often becoming more affluent than small and intermediate urban places.

All of these may be viewed as part of a wider pattern of marked income divergence, regionally, personally and at the intra-urban level in developing countries. These personal income disparities in third world cities exist alongside urban-rural disparities in wealth, so that a four-layer pyramidal structure occurs. Thus, generally, a small wealthy urban elite exists at the apex, above secondly, government servants and those employed in modern industries, and thirdly, the vast numbers of the urban poor. Finally, the masses of rural poor exist at the broad base of the welfare pyramid. Regional inequalities in developing countries are substantially larger than those in developed countries. If the gross regional products of the richest and poorest regions of nations are compared, then there is great variation of ratio between developed and developing countries.

There are three broad patterns of spatial concentration and inequality: economic social differences between urban and rural areas; regional disparities; and the degree to which one city dominates the national urban structure (urban primacy).

- **Rural- urban disparities**: major differences are apparent between the standards of living of urban and rural populations. Most third world rural areas contain a higher proportion

of very poor people, offer fewer and less adequate services, and have more limited opportunities for well-paid work.

- **Regional disparities:** Regional disparities in third world countries are extreme in terms of any kind of socio-economic indicator, medical provision, schooling, industrial activity etc. Regional income disparities have two major characteristics, firstly, there seems to be little tendency towards greater equality in most third world countries. Secondly, there is a lack of clear relationship between rising per capita income and levels of regional disparity.
- **Urban primacy:** in many third world countries, most large-scale modern activities, most forms of social infrastructure, and most centers of decision making are found in a single major city (The way one city dominates all others). This phenomenon is usually known as urban primacy.

2.5 Urban Agglomeration and Regional Disparities

2.5.1 Urban Agglomeration

Urban agglomeration is the spatial concentration of economic activity in cities. It can also take the form of concentration in industry clusters or in employment centers within a city. One reason that agglomeration takes place is that there exist external increasing returns, also known as agglomeration economies. Evidence indicates that there exist both urbanization economies, associated with city size, and localization economies, associated with the clustering of industry. Both effects attenuate geographically. Theoretical research has identified many sources of agglomeration economies; including labor market pooling, input sharing, and knowledge spillovers.

Urban agglomeration is a continuous urban spread constituting a town and its adjoining urban outgrowths (OGs), or two or more physical contiguous towns together and any adjoining urban outgrowths of such towns. Examples of Outgrowth are railway colonies, university campuses, port area, military camps etc. that may have come up near a statutory town or city but within the revenue limits of a village or villages contiguous to the town or city. The following are the possible different situations in which urban agglomerations could be constituted.

a. a city or town with one or more contiguous outgrowths;

b. two or more adjoining towns with or without their outgrowths;
c. a city and one or more adjoining towns with their outgrowths all of which form a continuous spread.

The term "agglomeration" is more appropriate for determining the populations of large super-cities like Tokyo, Mexico City, and Seoul. These examples are super-cities which have expanded enough to consume other neighborhoods. Although administration may be separate for outlying districts, the population might say they are from the central city.

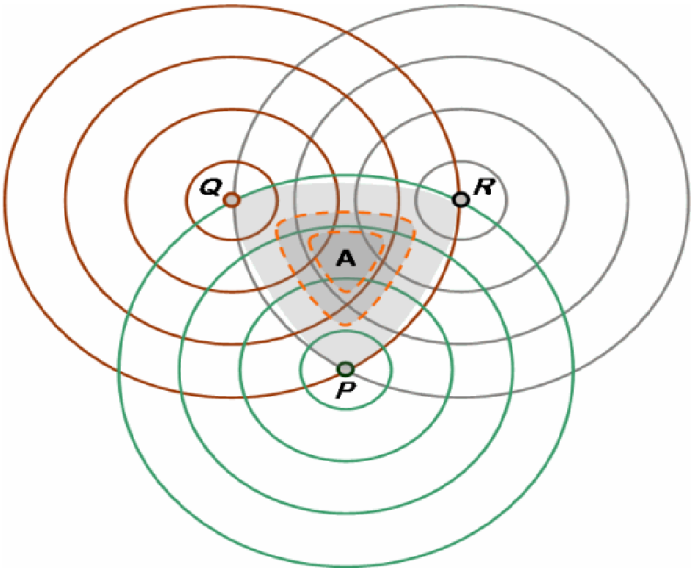
According to one list, the largest agglomerations in the world are as follows:

Rank	City Name	Country	Population
1	Tokyo	Japan	34,000,000
2	Guangzhou	China	24,200,000
3	Seoul	South Korea	24,200,000
4	Mexico City	Mexico	23,400,000
5	Delhi	India	23,200,000
6	Mumbai	India	22,800,000
7	New York City	USA	22,200,000
8	São Paulo	Brazil	20,900,000
9	Manila	Philippines	19,600,000
10	Shanghai	China	18,400,000

Agglomeration economies are a powerful force that helps explain the advantages of the "clustering effect" of many activities ranging from retailing to transport terminals. There are three major categories of agglomeration economies:

- **Urbanization economies**. Benefits derived from the agglomeration of population, namely common infrastructures (e.g. utilities or public transit), the availability and diversity of labor and market size.

- **Industrialization economies**. Benefits derived from the agglomeration of industrial activities, such as being their respective suppliers or customers. This favors the emergence of industrial clusters.
- **Localization economies**. Benefits derived from the agglomeration of a set of activities near a specific facility, let it be a transport terminal (logistics parks), a seat of government (lobbying, consulting, law) or a large university (technology parks).



On the above figure, three activities (P, Q and R) having their respective location constraints can benefit from agglomeration economies if they locate at A. The additional transport costs that may derive will be more than compensated by the cheaper functional linkages between the activities. For instance, a shopping mall is composed of many unrelated commercial activities which would otherwise have their own location based on specific factors, such as rent, accessibility or market size. They substantially benefit from this clustering by sharing a common facility with many amenities (parking lots, public space) and having consumers combine multipurpose commercial trips into one (in addition to maximize the chances of impulse buying). The same rationale applies to logistics parks where distribution centers involved in very different supply chains locate to take advantage of common infrastructure and accessibility to transportation systems.

CHAPTER THREE

Theories of Cities and Economics Development

3.1 Theories of Development

There is no single theory of economic development. Most philosophers link the economic growth with urbanization. The studies of economic base for example associate economic growth with the expansion of export activities. A second approach connects economic expansion to the growth of manufacturing on rural areas, based on the opportunities provided by a surplus labor supply. A third approach, growth pole theory, ties economic expansion to the process of large urban areas in providing self generating expansion.

3.1.1. Growth pole theory

One of the most widely discussed and debated theories of growth, is the growth pole theory, originally put forth by the French economist François Perroux in the early 1950s. This theory is basically one type of the internal growth theory in that its emphasis is on changes within a region that penetrate economic growth.

A region does not grow economically at the same rate over all of its area, but rather tends to grow most rapidly at a point or points while lagging or remaining stagnant elsewhere. The rapidly growth points (or poles) are metropolitan areas, which exert dominance over the entire region. The growth pole theory attempts to account for the reasons why growth is geographically unbalanced in this way.

Associated with the growth point is a key industry noted for its great size and importance and for its interconnections with other industries or activities. As the key industry grows and prospers, so does the local area in which the industry is located; as employment increases, purchasing power rises, and new industries and activities are attracted at the area. The key industry has connections with other industries, called affected industries-those with which the key industries

does a significant amount of business, whether in purchasing materials or selling processed foods. An increase in output in the key industry stimulates a whole wave of production increases in the affected industries.

There is a concentration of the affected industries near the location of the key industry. The result is that the industries affected by the dominant industry will be most likely to prosper and grow, and that their spatial clustering further reinforces the idea of the growth point or center. The remainder of the region stagnant.

The regional disparity in economic growth has both positive and negative elements. First, there are positive elements for the lagging region, resulting from the tricking-down processes. These may take the form of purchases in the growth center of goods originating in the lagging region. Second, some investments in the lagging region is bound to occur with capital supplied from the growth center finally, to the extent unemployment exists in the lagging region; the growth center will act to absorb some of the region's labor surplus. In all cases, the advantages so evident in the growth center will partially trickle down or "spill over" to the benefit of the lagging region. Normally the remote from the growth center, the less the trickle-down effect will be felt.

At the same time, geographically concentrated growth may have a number of harmful effects on the lagging region. These unfavorable features are the polarization processes. Local industries in the lagging region may become depressed by the considerably more competitive industries in the growth center. The less efficient high-cost producers in the lagging region will have their market areas severely curtailed, if not eliminated, by the large scale regional producers at the growth point.

3.1.2 Polarization and trickling down process.

Concentrating investment in one area usually leads to polarization of development. As growth accelerates in the urban area, the hinterland experiences a parallel decline. This latter circumstance was labeled by Myrdal as a backwash involving the migration of rural residents from the hinterlands to take advantage of urban job opportunities. Financial resources (bank deposits, investments) often vacate rural areas in favor of the development pole in early stages of development. The net result of this process is that the hinterland can become more impacted and less able to meet local needs, such as the provision of health and educational services. The

migration process itself is also highly selective, with a disproportionate share of the younger population moving away, leaving an older, more dependent clientele in peripheral areas. As time passes, a tricking down process of spread effect counteracts the initial depletion of human and financial resources in the hinterland. Growing markets, new technology and friction of distance combined with congestion, pollution and diseconomies of scale in the hearth land and the amenities of the hinterland make outlying areas more attractive to the development over time. Just as centripetal forces encourage concentration of growth in the center at first, centrifugal effects gradually begin to provide increased opportunities in the outlying areas as centralization pressure increase. The impacts of the latter process are much weaker than the centripetal forces and can take a half century or more to appear.

3.1.3. Application of the growth pole theory.

Growth process in underdeveloped countries fit the growth pole conceptualization particularly well. Less-developed countries also conform to this development sequence. In some instances the growth pole approach has been used to describe the development process within the context of the existing hierarchy of existing cities, while in other instances it has been used as a guide for development new, planned cities as focal points for development in the depressed areas. Such a planned pole was suggested as a magnet for growth. Core regions initiate the development process which is later transferred to peripheral regions.

3.2. Circular and cumulative causation

Allan Pred, following Myrdal, offered further insight into features of regional economic growth. It is readily observed that early in a region's evolution are the cities or growth points around which the entire regions evolve. Why do large cities grow larger and why do larger cities grow at a faster rate than smaller ones? In addition to the geographic paralleling of economic connections between the key and affected industries, Pred argued that the mere existence of an industry at a location at an early time increases the likelihood that new or enlarged industries will occur at or near that initial location.

A local growth point emerges as the result of the location or the development of an industry at some place within a region. The new industry enhances the local economy immediately and directly by providing employment, by increasing purchasing power, and perhaps by inducing immigrants. Indirectly, but importantly, the workers attracted to the new industry require supporting retailing and service activities. An additional grocery is needed to the community, half a barber and three quarters of doctor's services. In other words, the new industry creates a multiplier effect whereby additional supporting personnel are attracted to the community to serve the needs of the workers and their families. The service personnel generate the need for still more service workers. The net outcome is enlarged market for the industry and the opportunity for the industry to expand to fulfill its enlarged market.

In the early development of a region, its small industries will be significantly tied primarily to the local market. This means that only certain kinds of industries can exist in the region, and theses will be industries that have a small market threshold. The market threshold refers to the minimum number of people necessary for the industry to exist profitably. A small food-processing factory could then exist on the sales to a small community, say, 5000, people, but an iron-and-steel mill could not. Once the market threshold of the community reached 10,000 people, a new range of industrial types could come into existence because there would now be a sufficiently large local market to support them.

The larger the industrial base becomes the greater are the chances that further technological progress will occur. Large industrial firms have sizable research staffs. Large, Modern industrial countries have numerous, highly trained personnel whose research activities tend to uncover new and improved methods of operation. Central to this idea is technological innovation access to the needed information. Typically the information source for any particular industry is geographically concentrated near the location of the industry. It has been said that cities are centers of change. This is so because cities have huge information pools, the advanced technology to gain access to their information pools, and the means to transmit that information via transportation and communication facilities. Pred has recognized that regional economic growth is dependent not just on investment capital, export flows, or rises in per capita income; it also depends very fundamentally on the information base used in making economic decisions on

the role of access to information used in industrial innovations and inventions. And information is most unequally spread geographically, being primarily confined in or near the growth center of a region.

This is especially true at a world scale. Although no really good measure of "information supply" is available on a world level, several surrogates may be used as close approximations.

4.3. Economic base theory

As urbanization accelerated, and the planning profession emerged in the post World War I era, interest grew in predicting urban growth and in explaining the mechanism that propelled this expansion. This urban growth was typically measured in relation to the strength of:

a. The industrial sector of the urban economy
b. The level of services

In 1927, a report of the New York regional plan association distinguished between primary and secondary employment. The former referred to industry and the latter to the service activity. By the 1960s, a more formal statement of economic base theory appeared. An article in fortune magazine in 1938 study by Hoyt promulgated the new terminology and analytical framework.

The foundation of support for a city according to the economic base approach came from the sales goods and services outside the community. These sales were called exports. Revenues that such sales produce, according to the scenario, assisted local expansion by providing dollars to support service activities. Goods and services produced for sale outside the local urban area were called basic and employment related to sale in the home community was labeled as non basic. Economists at the time typically attributed urban growth to basic portion of total employment, relegating services to a backup role, arguing that they developed after basic activity expansion.

3.4 Stages of Development

Thompson's scenario of growth using the basic-non basic dichotomy describes a series of stages in the development of the city. The first stage of export specialization appears when a local economy emerges under the aegis of a single manufacturing firm. The next stage which is the second that it characterized by export complex unfolds as additional companies begins production to supply input or purchase output from the original enterprise. The growth of local

service sector signifies the presence of the third stage which is the stage of economic maturation. As growth continues, the city may become wholesaler and broker for the other city that was once the rival cities but now which become its satellites. Cities that reach the fourth stage, the metropolis, provide many services to the hinterland. The fifth stage which is the elite stage is the technical–professional virtuosity that signals the national preeminence for the city. But not all cities experience the full sequence of development stages. Some lose the momentum because of competition from other center, poor location, or lack of leadership. Others prosper whether from chance, local boosterism, location or favored resource availability.

4.5. Basic-non basic ratios

In the 1940s and 1950s, geographers and economics widely heralded the economic base approach as a key to unlock the mystery of urban growth. The terms primary, external, basic and town building came to be used interchangeably to describe basic sector jobs. At the same time secondary, ancillary, service and town serving tags were applied to non-basic jobs. Determining a specific basic ratio linking industrial and service jobs shares becomes a topic of great concern. Proponents of this approach though future growth could be promoted by increasing the number of basic (industrial) jobs, which in turn would spin off non-basic employment.

Basic-non basic ratio analyses revealed a systematic variation with city size. In smaller cities a greater share of employment was typically basic in nature.

CHAPTER FOUR

Theories Urban Land Uses /Models of Urban Land Use

A variety of theories have been developed to describe and explain the pattern of land uses and the distribution of population groups with in cities. The following are most widely accepted theories that are useful in analyzing the internal spatial structures of cities.

4.1. Concentric zone theory

It was first conceptualized by Fredrich Engles in the mid-19th century. He describes the spatial pattern of the city in the class stratification terms. Most urban studies and other social scientists consider E.W. Burgess, responsible for the concentric zone model and theory in 1925. It was the first to give the explanation of distribution of social groups within urban areas. This concentric ring model depicts urban land use in concentric rings: the Central Business District (or CBD) was in the middle of the model, and the city expanded in rings with different land uses.

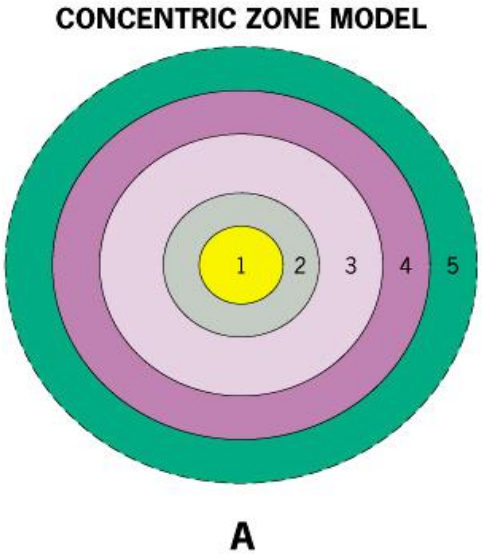
Assumptions for the model:

- Land was flat and therefore transport was equally cheap in all directions.
- All transport was as efficient as each other.
- Land near the center was of higher value than land at the outskirts.
- Buildings aged as we move out from the center.
- Well-defined separations either ethnically or economically.
- Those who could afford transport lived further out.
- No concentration of heavy industry.

According to Burgess, the growth of any town or city occurs through a radical expansion from the centre so as to form a series of concentric zone circles. These circles ma\y be numbered to designate both the successive zones of urban extension and the types of areas differentiated in the process of expansion. The five zones Burgess observed are

1. *CBD*: Central business district contains all the major shops, offices thereby making it the center for commerce and entertainment.
2. *Zone of Business and light manufacturing*: either invaded by light industry or degrading old housing, mostly recent immigrants.
3. *Homes of factory workers*: This is where people who are slightly better off live, these may also be second generation immigrants working in industry reduced traveling cost
4. *Residential zone of high class apartment buildings/ single family dwellings:* Occupied by people who have both the money to afford housing here and who can afford to commute every day.
5. *Commuters' zone.*

Burgess described the changing spatial patterns of residential areas as a process of invasion and succession.



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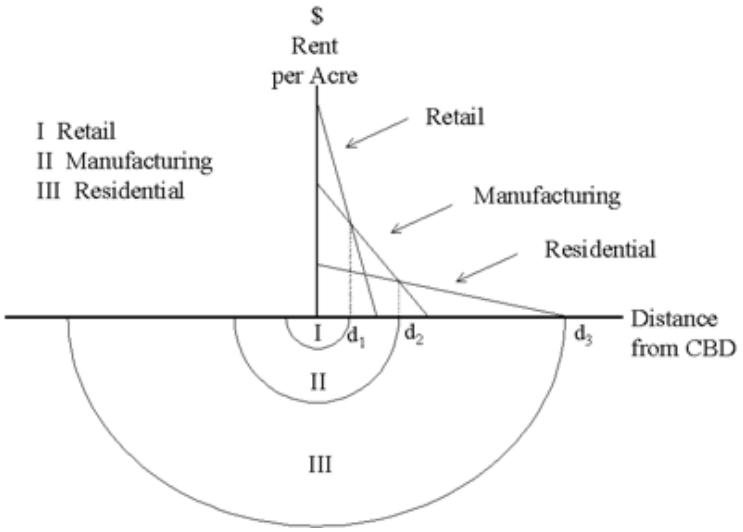
As the city grew and developed over time, the CBD would exert pressure on the zone immediately surrounding it (the zone of transition). Outward expansion of the CBD would invade nearby residential neighborhoods causing them to expand outward. The process was thought to continue with each successive neighborhood moving further from the CBD.

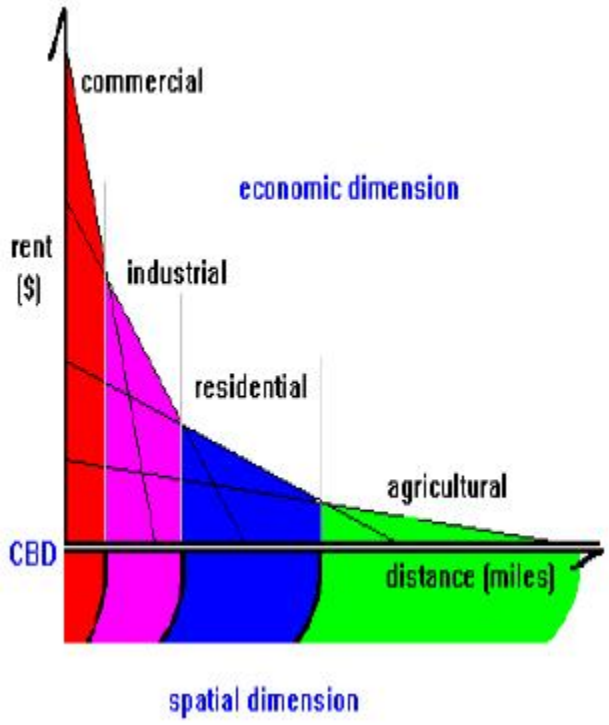
Burgess often observed that there was a correlation between the distance from the CBD and the wealth of the inhabited area; wealthier families tended to live much further away from the Central Business District. As the city grew, Burgess also observed that the CBD would cause it to expand outwards; this in turn forced the other rings to expand outwards as well.

The model is more detailed than the traditional down-mid-uptown divide by which downtown is the CBD, uptown the affluent residential outer ring, and midtown in between.

The bid rent curve



Consequence of land use



Burgess's work is based on the bid rent curve. This theory states that the concentric circles are based on the amount that people will pay for the land. This value is based on the profits that are obtainable from maintaining a business on that land. The center of the town will have the highest number of customers so it is profitable for retail activities. Manufacturing will pay slightly less for the land as they are only interested in the accessibility for workers, 'goods in' and 'goods out'. Residential land use will take the surrounding land.

Criticisms

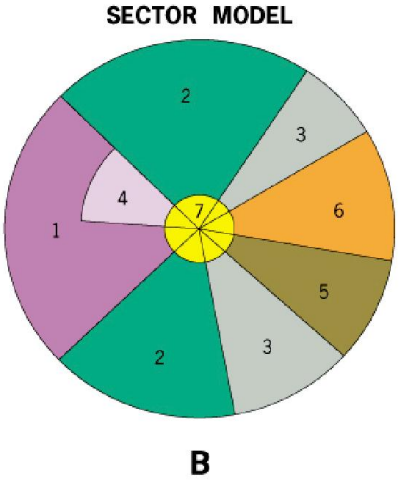
The model has been challenged by many contemporary urban geographers. First, the model does not work well with cities outside in particular with those developed under different historical contexts. Because of changes such as advancement in transportation and information technology and transformation in global economy, cities are no longer organized with clear "zones".

- It assumes an isotropic plain - an even, unchanging landscape
- Physical features - land may restrict growth of certain sectors
- Commuter villages defy the theory, being in the commuter zone but located far from the city
- Decentralization of shops, manufacturing industry, and entertainment
- Urban regeneration and gentrification - more expensive property can be found in 'low class' housing areas
- Many new housing estates were built on the edges of cities
- It does not address local urban politics and forces of globalization
- The model does not fit polycentric cities.

4.2. Sector Theory

1.High Class Residential

2-3.Middle class Residential



4. Low Class Residential

5-6: Transportaion and industry

7. CBD

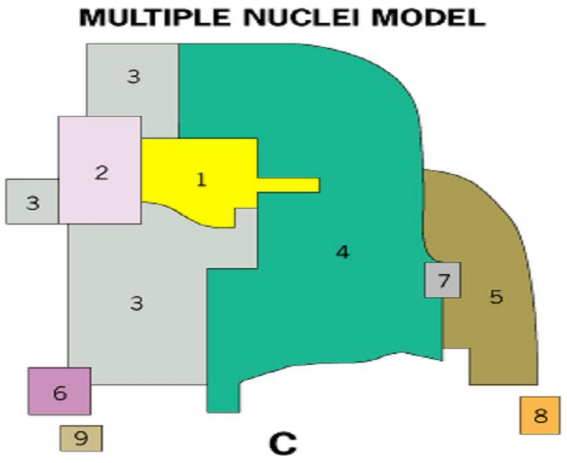
It was developed by an economist Homer Hoyt in 1939. He was primarily concerned in his study with residential land use. His major contribution to urban structure was the identification of directional element in city growth. The sector pattern of the city growth can be explained in part by a filtering process. The model works on a system of wedges or sectors concentrating on the effect of communication lines on the growth pattern and that if an area had a certain land use then this sector would continue having that sector through time.

Variables:

- Wealthy people chose to live where they could afford to, eg. Services etc.
- Wealthy residents used their cars as transport from home to work and vice versa thereby living further from industry but close to main roads.
- Similar types of land use clustered together to create "sector" development.

In this process, the city grows overtime in the direction of the high-class residential sector.

4.3. Multiple Nuclei Theory



1. CBD
2. Whole sale and Light manufacturing

3. Low Class Residential
4. Medium Class Residential
5. High Class Residential
6. Heavy Manufacturing
7. Outlying Manufacturing
8. Residential Suburbs
9. Industrial Suburb

It was developed by Chauncy Harris and Edward Ullman in 1945. According to this theory, cities tend to grow around not one but several distinct nuclei, thus forming a multiple nuclei pattern. The number of distinct nuclei occurring within a city is likely to be function of city size and recency of development.

Note: the above three theories of urban spatial structure apply primarily to cities of MDCs and American cities in particular.

4.4. Inverse concentric zone theory

It is mostly applied to cities in less developed cpontries. Cities where this pattern exist have been called pre-industrial i.e. primarily administrative and/or religious centers. In such cities, the capital area is a place of resistance of the elite or upper class. The poor live on the periphery. Unlike most cities in the more developed countries, social class is inversely related to distinction from the center of the city.

The reasons for this pattern are twofold.

a) lack of adequate and dependable transportation system
b) The functions of the city (administration, religious…) dominated by the elite concentrated in the centre of the city.

4.5. Central place theory

Central place theory is a geographical theory that seeks to explain the number, size and location of human settlements in an urban system. The theory was created by the German geographer Walter Christaller, who asserted that settlements simply functioned as 'central places' providing services to surrounding areas.

Functional hierarchies

1. The larger settlements are in size, the fewer in number they will be i.e. there are many small villages but relatively fewer large cities.
2. The larger settlement grow in size, the greater the distance between them i.e. villages are usually found close together while cities are spaced much further apart.
3. As a settlement increases in size the range and number of its function will increase.
4. As a settlement increases in size the number of higher order services will also increase.

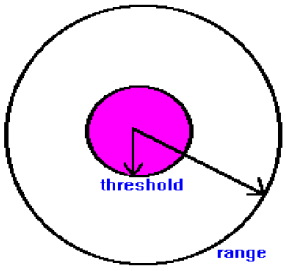
Assumptions:

- An isotropic (all flat), homogeneous, unbounded limitless surface.
- Transport costs were proportional to distance from the central place.
- An evenly distributed population.
- Evenly distributed resources.
- All consumers have a similar purchasing power and demand for goods and services.
- Goods and services were always obtained from the nearest central place.
- Some central places offered only lower goods, for which people were not prepared to travel far, other central places offered higher sphere of influence. The higher order central places provided both higher and lower order goods.
- No provider of goods or services is able to earn excess profit. Therefore the trade areas of these central places that provide a particular good or service must all be of equal size
- There is only one type of transport and this would be equally easy in all directions
- Transport cost is proportional to distance traveled in example, the longer the distance traveled, the higher the transport cost.

Walter Christaller developed the Central Place theory to explain the size and spacing of cities that specialize in selling goods and services. The theory then relied on two concepts: *threshold* and *range*.

- **Threshold** is the minimum market (population or income) needed to keep it about the selling of a particular good or service.
- **Range** is the maximum distance consumers are prepared to travel to purchase goods - at some point the cost or inconvenience will outweigh the need for the good. It is dependent

up on the value of the good; the length of the journey; and the frequency that the service is used.



The result of these consumer preferences is that a system of centers of various sizes will emerge. Each center will supply particular types of goods forming levels of hierarchy. In the functional hierarchies, generalizations can be made regarding the spacing, size and function of settlements.

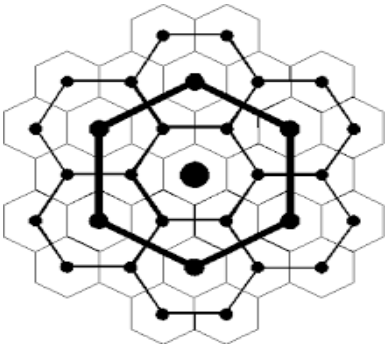
1. The larger the settlements are in size, the fewer in number they will be, i.e. there are many small villages, but few large cities.
2. The larger the settlements grow in size, the greater the distance between them, i.e. villages are usually found close together, while cities are spaced much further apart.
3. As a settlement increases in size, the range and number of its functions will increase.
4. As a settlement increases in size, the number of higher-order services will also increase, i.e. a greater degree of specialization occurs in the services.

The higher the order of the goods and services (more durable, valuable and variable), the larger the range of the goods and services, the longer the distance people are willing to travel to acquire them. Examples for low order goods and services are: newspaper stalls, groceries, bakeries and post offices. They are supported by a smaller threshold population and demand. Examples for high order goods and services are: jewellery, large shopping arcades and malls. They are supported by a much larger threshold population and demand.

Predictions of the theory

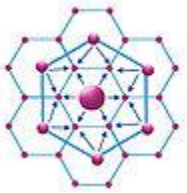
In the orderly arrangement of an urban hierarchy, seven different principal orders of settlement have been identified by Christaller, providing different groups of goods and services. Settlements are regularly spaced - equidistant spacing between same order centers, with larger centers farther apart than smaller centers. Settlements have hexagonal market areas, and are most efficient in

number and functions. The following figure illustrates the different hierarchical arrangement of cities and their respective market areas.



The central place theory has three orders or principles. The different layouts predicted by Christaller have *K*-values which show how much the Sphere of Influence of the central places takes in — the central place itself counts as 1(one) and each portion of a satellite counts as its portion:

- **The marketing principle (k=3)**. The territory is served by a minimum number of urban centers. Each centre has the largest choice (3) to purchase goods and services of a higher order.



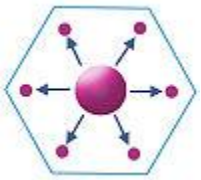
Although in this *K* = 3 marketing network the distance traveled is minimized, the transport network is not the most efficient, because the important transport links between the larger places do not pass through intermediate places.

In the marketing principle, market areas at a certain level of the central place hierarchy are three times bigger than the next lowest one. The different levels then follow a progression of threes, meaning that as one moves through the order of places, the number of the next level goes up three times. For example, when there are two cities, there would be six towns, 18 villages, and 54 hamlets.

- **Transport principles (K = 4*):*** in this principle, the central place hierarchies are four times bigger than the area in the next lowest order.

According to *K* = 4 transport principle, the market area of a higher-order place includes a half of the market area of each of the six neighboring lower-order places, as they are located on the edges of hexagons around the high-order settlements. This generates a hierarchy of central places which results in the most efficient transport network. There are maximum central places possible located on the main transport routes connecting the higher order center. In this distribution, as many centers as possible are along main transport lines. The system tends to be linear in orientation. With the transportation principle, towns not on major transportation routes are smaller than expected because on the market principle. Transportation routes attract business and allow more and large towns to develop along the rail road.

- **Administrative principles (K = 7):** It is the last system and here, the variation between the lowest orders and highest orders increase by a factor of seven. Here, the highest order trade area completely covers that of the lowest order, meaning that market serves a larger area.



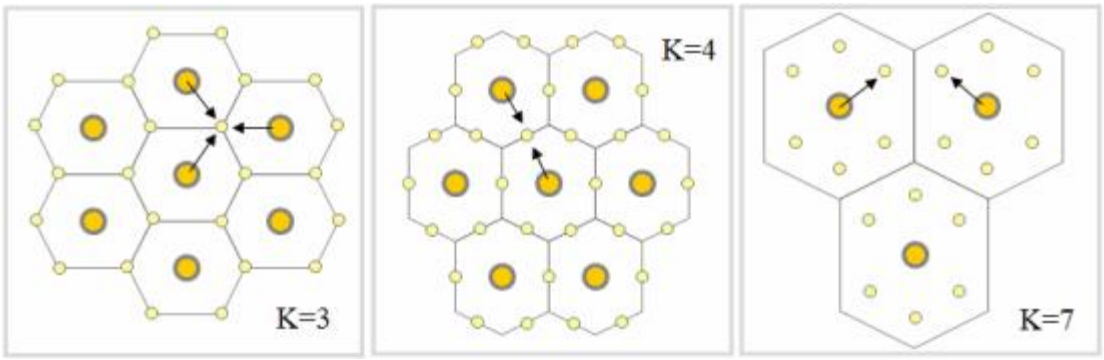
According to *K* = 7 administrative principle (or political-social principle), settlements are nested according to sevens. The market areas of the smaller settlements are completely enclosed within the market area of the larger settlement. Since tributary areas cannot be split administratively, they must be allocated exclusively to a single higher-order place. Efficient administration is the control principle in this hierarchy.

The validity of the central place theory may vary with local factors, such as climate, topography, history of development, technological improvement and personal preference of consumers and suppliers.

Economic status of consumers in an area is also important. Consumers of higher economic status tend to be more mobile and therefore bypass centers providing only lower order goods. The application of central place theory must be tempered by an awareness of such factors when planning shopping center space location. Purchasing power and density affect the spacing of centers and hierarchical arrangements.

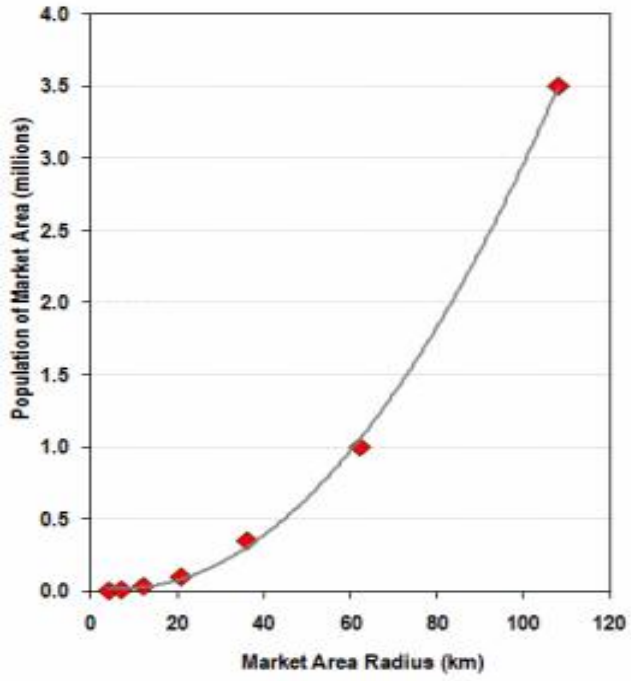
Factors shaping the extent of market areas:

- Land use: industrial areas can provide little in the way of a consuming population
- Poor accessibility: this can limit the extent of a center's market area
- Competition: this limits the extent of market areas in all directions
- Technology: high mobility afforded by the automobile allows overlapping of market areas



In central places theory the k value is often used to define the geographical relationship between different orders. With a k=3 relationship, each market area of a superior order contains three market areas of a lower order. Several other values of k can be possible, but the most common are 3, 4 and 7.

Market Size / Area Relationships in the Central Places Theory



Order	Market Area Radius (km)	Population of Town	Population of Market Area
M (Marktort)	4	1,000	3,500
A (Amtsort)	6.9	2,000	11,000
K (Kreisstadt)	12	4,000	35,000
B (Bezirkstadt)	20.7	10,000	100,000
G (Gaustadt)	36	30,000	350,000
P (Provinzstadt)	62.1	100,000	1,000,000
L (Landstadt)	108	500,000	3,500,000

The importance of a central place is determined by the order of goods and services being offered. In other words, there is a hierarchy of service activities, ranging from low order services found in every center to high order services found only in major centers. Therefore, the size of a market area is directly proportional to the size of its center. The order illustrates the position of a central place in a hierarchy of central places.

To support its activities, each urban centre needs a threshold population that varies according to its size. Obviously, large cities have an important threshold, so there may be only of few of them on a specific territory while there can be a large number of small villages. In his analysis of central places, Christaller established 7 major orders, ranging from the state capital (Landstadt - **L**) with a population above 500,000 to the small market town (Marktort - **M**) with a population of 1,000.

	Range	Goods and Services Offered	A	B	C
A	Large (City)	Diversified	X	X	X
B	Average (Town)	Average		X	X
C	Small (Village)	Limited			X

The above table simplifies a central places hierarchy with three levels, A, B and C. Centers of type A have a large range and diversified goods and services (health, shopping mall, finance, etc.). They correspond to large cities or metropolises and offer all the array of possible services. Types B are cities of medium size offering an intermediate range of services (banks, restaurants, etc.) over a more limited market area. Cities of type C are offering limited goods and services (gas station, convenience store) with a small range. A center of order A has activities of 3rd order having the lowest range, 2nd order activities with a higher range and 1st order activities with the highest range. For a center of B order, it only has 2nd and 3rd order market areas.

Criticism

The Central Place Theory has been criticized for being static; it does not incorporate the temporal aspect in the development of central places. Furthermore, the theory holds up well when it comes to agricultural areas, but not industrial or postindustrial areas due to their diversified nature of various services or their varied distribution of natural resources.

4.6 Central Place Size and Spacing

Within the central place system, there are five sizes of communities. A hamlet is the smallest and is a rural community which is too small to be considered a village. Cape Dorset (population 1200), located in Canada's Nunavut Territory is an example of a hamlet. The rank order of central places is:

- Hamlet
- Village
- Town
- City
- Regional Capital

4.7 Industrial location

Alfred Weber (1868-1958) formulated a theory of industrial location in which an industry is located where it can minimize its costs, and therefore maximize its profits. According to Weber,

three main factors influence industrial location; transport costs, labor costs and agglomeration economies. Locations thus imply an optimal consideration of these factors.

1) **Transportation:** the site chosen must entail the lowest possible cost of
   A) Moving raw materials to the factory, and
   B) Finished products to the market. This, according to Weber, is the most important.
2) **Labor:** higher labor costs reduce profits, so a factory might do better farther from raw materials and markets if cheap labor is available (e.g. China – today).
3) **Agglomeration:** when a large number of enterprises cluster (agglomerate) in the same area (e.g. city), they can provide assistance to each other through shared talents, services, and facilities (e.g. manufacturing plants need office furniture).

Assumptions

1. There is an uneven distribution of natural resources on the plain. Raw materials are concentrated in specific sites.
2. The size and location of markets are given at fixed points on the plain.
3. There are fixed locations of labor where wage rates are fixed and labor is immobile and unlimited (capitalists love that).
4. The area has a uniform culture, climate and political system.
5. Entrepreneurs minimize costs of production.
6. Perfect competition exists.
7. Costs of land, structures, equipment and capital do not vary regionally.
8. There is a uniform system of transport over a flat surface.

Qualifications to Industrial Location

Companies make economies of scale and benefit from shared facilities, labour force, infrastructure, services and raw materials if they are sited in the same place as existing factories. This process of agglomeration concentrates many factories into industrial regions or zones. At the other end of the process is industrial inertia. As changes occur in raw materials, decline of location advantages and transport infrastructure, old industrial areas decline, but do not lose all of their industry or population. Factories close and unemployment soars, but people remain

because it is their home. These areas decline gradually over a very long period and may regenerate with new light industry. Light manufacturing or footloose industry is increasingly controlled by Trans National Corporations who make global location decisions based on economies in transport, wages and infrastructure. They poured investment into South East Asia, and then pulled it out. They drive much of the world economy and benefit from extremely efficient transportation that skews the location decision towards the largest markets.

4.8 Rank-Size Rule

In 1949, George Zipf devised his theory of rank-size rule to explain the size of cities in a country. He explained that the second and subsequently smaller cities should represent a proportion of the largest city. For example, if the largest city in a country contained one million citizens, Zipf stated that the second city would contain one-half as many as the first, or 500,000. The third would contain one-third or 333,333; the fourth would be home to one-quarter or 250,000, and so on, with the rank of the city representing the denominator in the fraction.

Settlements in a country may be ranked in order of their size. The 'rule' states that, if the population of a town is multiplied by its rank, the sum will equal the population of the highest ranked city. In other words, the population of a town ranked *n* will be $1/n^{th}$ of the size of the largest city—the fifth town, by rank, will have a population one- 5^{th} of the first. On normal graph paper, the plot of cities and their size and rank will appear as a concave curve. When plotted on logarithmic scales, the graph may emerge as a straight line. This is the *rank-size pattern*. It is usually possible to relate the ranks and sizes of the central places in country by using a regression analysis:

$$P_n = p_1 . R_n^{-1} \quad \text{Or} \quad \text{Log } P_k = \log P_1 - b \log k$$

Where P_1 is the population of the largest city or town, P_k is the population of the k^{th} town by rank, and *b* is a coefficient which must be established empirically for each investigation. The greater the value of *b*, the steeper the slope, and the greater the primacy of the largest city or town. Many developing countries show a sharp fall from the largest, primate city to the other cities, and this is known as the primate rule.

CHAPTER FIVE

Urban Problems

5.1 Water supply

The world's population is increasingly found in cities. Today, throughout the developing world, urbanization trends are gaining speed and are irreversible. From a technical standpoint, it is easier to provide water and sanitation services to people living closer together in urban settings than in dispersed rural communities. However, the costs of meeting the needs are much higher per capita, and are growing. The health risks posed by the lack of sanitation increase exponentially as densities increase and as people share drinking water and sanitation resources. The urban environmental sanitation crisis in developing countries is taking the large health, economic and environmental toll on all city residents.

5.2 Decline in quality of living for urban dwellers

Urbanization is major concern for management researchers because it decline in quality of living for urban inhabitants. As the metropolis becomes a developed city, the land value will also increase. The housing provision will focus more to fulfill the needs of the high income group. As such, there will be a problem in the provision of housing, especially for the middle and low class people. The supply of housing for the urban poor is still inadequate as the cost of these houses is very high to which low and middle income group cannot afford. The lack of housing provision for the low income group has led to the continuation of unlawful resident settlements in the city. These unlawful tenant settlements will certainly lack in proper infrastructure that will bring about many hindrances to the urban environment and create social problems such as child education, crime, drugs, delinquency and others. Besides housing problem for low income group, the process of urbanization has also increased the demand on infrastructure and utility which cannot be fulfilled from the existing facilities. The maintenance of drains and debris collection is incompetent which can raise other serious problems such as flash floods and poor public health. The reappearance of flash floods is due to the drainage system being unable to contain surface water run-off that has greatly increased with the higher intensity of urban activities.

5.3 Unsuccessful urban governance

The urban authority undergoes with multifaceted challenges to manage a city. The fast speed of urbanization is major challenges which need every party to be more focused in undertaking each and every responsibility in urban development. However, the involvement of several agencies and departments in urban management made it complicated to synchronize many actions and resultant, it affects the efficiency of those actions. Besides this, the local authority also deals with the different goals and interests of community groups which they need to fulfill. The local authority also needs to find solution for different social issues.

Cities are developed on two percent of the land's surface. Their inhabitant uses over three-quarters of the world's resources and release similar amounts of wastes. Urban wastes have local impacts but these are issues at global scale. The impacts of the cities are usually seen both locally and globally such as air pollution, city pollutions, as the major users of energy, cause both regional and worldwide pollution. These factors have adverse impact on health of the people, air quality and biosphere.

5.4 Urban waste management

The closure of the existing open dumping sites and the introduction of sanitary landfill is an urgent priority everywhere in the developing world. Even where complementary disposal technologies such as composting or incineration (waste to energy plants) are practiced, a landfill is still required and is the backbone of any sustainable disposal system. Given the essential nature of the landfill for final disposal, and the lack of local experience and financial resources for introducing sanitary landfills, central government support in terms of technical assistance and access to financing is needed in any lower and middle income countries. Matching grants designed to encourage landfill investments and sustainable operation may be an appropriate instrument to consider, primarily because the environmental damages and benefits tend to spill over into neighboring municipality and regions, or into underlying ground water resources.

5.5 Problem of Urban Pollution

Rising urbanization in present situation led to develop industries and transport systems out of proportion. These developments are mainly responsible for contamination of environment, particularly the urban surroundings. Urban pollution is mainly the collection of impurities created by cities which would certainly shock city dwellers. It includes Air, water, ground, the entire environment. Air pollution has dangerous consequences which emerge due to urbanization. Cities are the source of several dangerous gases, particularly vehicles like passenger cars, Lorries, buses which generate carbon dioxide (CO2), carbon monoxide (CO), sulphur dioxide (SO2), nitrous oxides (Nox), benzene, ozone in addition to fine particles released by diesel motors which create a serious threat to human health. Heating installations use fossil fuels which also contaminate the air of urban centres. However, in numerous urban agglomerations, the main source of the worsening of air quality is from industrial facilities which emit veritable poisons into the air, which is then inhaled by riverside dwellers. Water is also source of pollution in urban areas. Since earlier times, cities are attracting millions of rural

residents to their recognizable shores. Each of these individuals has required water to live, and consume for other basic needs. Cities under continuous development must increase their water resources and their water treatment capacities. In many countries, this has created nearly insoluble problems and millions of human beings are not assured daily access to potable water. As regards wastewater, the lack of effective collection and treatment facilities means that wastewater is often quite simply dumped back into Nature, often into the ocean, which creates severe and long lasting pollution problems.

5.6 Degradation of environmental quality

Due to urbanization, there is environmental degradation especially in the quality of water, air and noise. With the influx of more people in cities, there is great demand of facilities such as housing. Some unlawful factories and even houses which have a poor infrastructure, the waste from buildings are directly channeled to the nearest river or water resources which directly pollute the water. The domestic waste, industrial effluents and other wastes that were dumped directly to the river, degrade the water quality. Another after effects of rapid urbanization is the air pollution which has also increased due to emanation from motor vehicles, industrial development and use of non-environmental friendly fuel sources. The noise pollution is produced from the various human actions which also degrade the environment and ultimately affect the human health. The growth of population has generated a very high quantity of solid waste and there is pressure to provide a waste disposal place in the urban areas.

5.7 Urban transport problem

Cities are locations having a high level of accumulation and concentration of economic activities. They are complex spatial structures supported by complex infrastructure, including transport systems. The larger a city, the greater its complexity and the potential for disruptions, particularly when this complexity is not effectively managed. Urban productivity is highly dependent on the efficiency of its transport system to move labor, consumers, and freight between multiple origins and destinations. Additionally, transport terminals such as ports, airports, and railyards are located within urban areas, contributing to a specific array of challenges. Some are ancient, like congestion, while others are new like urban freight

distribution or environmental impacts. Among most notable urban transport problems some are treated under.

5.7.1 Traffic congestion and parking difficulties

Congestion is one of the most prevalent transport challenges in large urban agglomerations, usually above a threshold of about 1 million inhabitants. By the 21st century, drivers are three times more likely to be affected by congestion than in the latter part of the 20th century. Congestion is particularly linked with motorization and the diffusion of the automobile, which has increased the demand for transport infrastructures. However, the supply of infrastructures has often not been able to keep up with the growth of mobility. Since vehicles spend the majority of the time parked, motorization has expanded the demand for parking space, which has created space consumption problems particularly in central areas; the spatial imprint of parked vehicles is significant.

Congestion and parking are also interrelated since street parking consumes transport capacity, removing one or two lanes for circulation along urban roads. Further, looking for a parking space called “cruising” creates additional delays and impairs local circulation. In central areas of large cities cruising may account for more than 10% of the local circulation as drivers can spend up to 20 minutes looking for a parking spot. This practice is often judged more economically effective than using a paying off-street parking facility as the time spent looking for a free (or low cost) parking space is compensated by the monetary savings. Also, many delivery vehicles will simply double-park at the closest possible spot to unload their cargo.

Identifying the true cause of congestion is a strategic issue for urban planning since congestion is commonly the outcome of specific circumstances such as the lack of parking or poorly synchronized traffic signals.

5.7.2 Longer commuting

On par with congestion, people are spending an increasing amount of time commuting between their residence and workplace. An important factor behind this trend is related to residential affordability as housing located further away from central areas (where most of the employment

remains) is more affordable. Therefore, commuters are exchanging commuting time for housing affordability. However, long commuting is linked with several social problems, such as isolation (less time spent with family or friends), as well as poorer health (obesity).

5.7.3 Inefficient transportation system

Urbanization created severe problem of transportation. Due to movement of people into metropolitan cities, the number of vehicles on the road is increasing every year. Although various types of public transportation are provided in the cities but people in cities still prefer to drive private vehicles. This is due to the ineffective public transportation. The public transportation facilities are provided without referring to the need to integrate the different modes of transportation. Consequently it is difficult for the user to change the modes of transportation. Since the public transportation is not trustworthy, people usually travel from private vehicles which led to the severe problem of blockage in the cities. If any traffic jam happens, public transportation, especially bus and taxi and private vehicles are trapped together and cannot move. It creates lot of problem for people.

5.7.4 Difficulties for no-motorized transports

These difficulties are either the outcome of intense traffic, where mobility of pedestrian's bicycles and vehicles is impaired or because of a blatant consideration for pedestrians and bicycles in the physical design of infrastructure and facilities.

5.7.5 Loss of public space

Most roads are publicly owned and free of access. Increased traffic has adverse impacts on public activities which once crowded the streets such as markets, agoras, parades and processions, games, and community interactions. These have gradually disappeared to be replaced by automobiles. In many cases, these activities have shifted to shopping malls while in other cases, they have been abandoned altogether. Traffic flows influence the life and

interactions of residents and their usage of street space. More traffic impedes social interactions and street activities. People tend to walk and cycle less when traffic is high.

5.7.6 High infrastructure maintenance costs

Cities facing the aging of their transport infrastructure have to assume growing maintenance costs as well as pressures to upgrade to more modern infrastructure. In addition to the involved costs, maintenance and repair activities create circulation disruptions.

5.7.7 Environment impacts of energy consumption

Pollution including noise generated by circulation has become a serious impediment to the quality of life and even the health of urban population. Further, energy consumption by urban transportation has dramatically increased so the dependency on petroleum.

5.7.8 Accidents and safety

Growing traffic in urban areas is linked with a growing numbers of accidents and fatalities especially in developing countries. Accidents account for a significant share of recurring delays. As traffic increase, people feel less safe to use streets.

5.7.9 Land consumption

The territorial imprint of transportation is significant particularly for the automobile. Between 30 and 60% of a metropolitan area may be devoted to transportation, an outcome of the over reliance or some forms of urban transportation. Yet, this land consumption also underlines the strategic importance of transportation in the economic and social welfare of cities.

5.7.10 Freight distribution

Globalization and the materialization of the economy have resulted in growing quantities of freight moving within cities. As freight traffic commonly shares infrastructures with the circulation of passengers the mobility of freight areas has becomes increasingly problematic city

logistics strategies can be established to mitigate the variety of challenges faced by urban freight distribution