
**ADDIS ABABA UNIVERSITY**

**SCHOOL OF GRADUATE STUDIES**

# SPATIAL DISTRIBUTION OF PUBLIC HEALTH CENTERS AND ACCESS TO HEALTH FACILITIES IN GAMBELLA TOWN, ETHIOPIA

**BY**

**TER JOHN JOCK**

**A THESIS SUBMITTED TO THE DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN GEOGRAPHY AND ENVIRONMENTAL STUDIES (URBAN AND REGIONAL DEVELOPMENT PLANNING)**

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## Declaration

This is to certify that the thesis prepared by Ter John Jock, entitled: **Spatial distribution of public health centers and access to health facilities: in Gambella Town, Ethiopia** and submitted in partial fulfillment of the requirements for the degree of Master of Arts in Geography and Environmental Studies (Urban and Regional Development Planning) complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

## Declared by

Ter John Jock _____ Signature _____ Date

## Approved by

Advisor _____ Signature _____ Date

**Addis Ababa University**

**School of Graduate Studies**

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## List of Acronyms and Abbreviations

**CMH**: Commission on Microeconomics and Health

**CPT**: Central Place Theory

**CSA**: Central Statistic Agency

**EEPCO**: Ethiopian Electric Power Corporation

**FDRE:** Federal Democratic Republic of Ethiopia

**FUPI:** Federal Urban Planning Institutes

**HEP**: Health Extension Program

**HSDP**: Health Sector Development Program

**IOM**: International Organization for Migration.

**MOH:** Ministry Of Health

**MOWUD:** Ministry Of Works and Urban Development

**NUPI:** National Urban Planning Institutes

**PHCU**: Primary Health Care Units

**WHO:** World Health Organization

## *Abstract*

*Inequity in the distribution of the public health centers and access to health facilities has observed in Gambella town. The general objective of the study is to assess the spatial distribution of public health center and access to health facilities in Gambella Town.It has explained the cause of spatial inequality and described the distribution as well as accessibility of health facilities and their areas services in five kebele in the Town. The study used mixed method where both qualitative and quantitative data were used. The collection of data was through questionnaires and face-to-face interviews. Convenience sampling technique was used as the main criteria for selection. The population for this study was 813 in Gambella town from which the researcher extracted a sample of 268 from the total population. The study revealed that public health-centers are not sufficient and unevenly distributed. Most parts of the town have no health-centers and some parts have only health posts, which are even not active. Meanwhile, in Gambella town the problem of road has been identified among the major priority issues as the city has expanded beyond its level. Efforts to construct urban road transport can provide access and facilitates interaction as well as integration of segregated urban spatial units. More generally, the important role of services in the town, it is important to consider services efforts in the urban planning process.The finding ascribed that lack of concern given by those in authority to provide public services based on population living in the town, lack of self initiative by communities, less surveying, and repeated political conflict between two major ethnic groups (Nuer and Anywa) tend to cause inequality in the distribution of public health-center and access to health facilities in the Gambella town. Based on these findings, to overcome these problems due concern to the provision of health services has to be given, town survey has to be in place, immediate reconciliation, further studies, expansion of health infrastructure, equal allocation of funds and health centers, corruption reduction, the demand of the local population and follow up has been recommended to the solution.*



**Keywords:** Spatial, Distribution, Health facilities, Access.

# CHAPTER ONE

# INTRODUCTION

## 1.1. Background of the Study

Distribution of public health centers and access to health facilities varies from continent to continent and from country to country. In many aspects, distribution of healthcare services has shown a wide difference both by type of services provided and by the distance from other centers (Sanni, 2010).Thus, Ujoh and Kwaghsende (2014) notes that adequate and effective distribution of health care facilities contributes immensely to health care service provision and needs by rapid population growth, rising poverty and lack of resources. As Tali et al (2017), an equitable service distribution is the contrast between need for services and demand for them. Hence, access to healthcare requires an adequate supply of health services for the population need and the resources that meet specific characteristics such as geographic location; affordability that fit with patients' needs.

Moreover, provision of healthcare services by the public sector is a crucial factor in addressing the health morbidity and mortality burden for population health (Malik and Shaikh, 2017). But, physical accessibility and spatial distribution of healthcare services in low and middle income countries distress their utilization for improving health and reducing morbidity and mortality burden. According to Atser and Akpan (2009), inequality in facilities' distribution is of crucial significance particularly in developing societies where there are dual problems of limited facilities and low personal mobility. Thus, Sreerama (2015) views health care system among others things should ensure proper access to health care services for people in need, prevention of diseases and disability, detection of health conditions and provision of treatment to improve quality of life. However, barriers to accessing the healthcare services include lack of physical accessibility and geographical barriers such as low quality or functionality of healthcare resources.

In addition, Pinch (2010) regard distance and time as two crucial factors affecting the provision of health services in many low-income countries. Certainly, Stevenson (2004) argued that an inequality in access to social infrastructures distribution and allocation of facilities between areas was a result of social barriers. These barriers pertaining to the spatial

distribution of healthcare services led to the academic communities and practitioner to explore factors that cause regional variations in the distribution of social services such as healthcare facilities (Minutha and Sannasiddanannavar, 2014).

In Africa, there is a noticeable crises/challenge on health sectors. The distribution of public health centers and access to health facilities has not yet been addressed in both urban and rural areas. Nwakeze and Kandala (2011) stated that no appreciable progress has been made in addressing the crisses and ensuring good health for the populace. One of the myriads of problems facing the Nigerian health system is limited access to health facilities. Similar study conducted in Tanzania; by Ahmed (2004) describe variation in healthcare need is rarely measured in developing countries. In most cases, significance differences may exist in accessibility, socio-economic characteristic of the population and their spatial distribution.

According to Berman (1998) most sub-Saharan African countries attempted to provide universal health services to the population through primary healthcare provisions. However, the existing public health systems and provision of health facilities/infrastructure declines by rapid population growth, widespread poverty and lack of financial resources. Ahmed (2004) stressed that most Sub-Saharan Africa suffering for high rate of unemployment, substandard housing and limited access to, piped water, sanitation, drainage, electricity, public transport and other basic social services.

As an East African country, Ethiopia health sector has one of the most ambitious decentralization programs in Africa. It has a concurrent responsibility of the three tiers of government (Federal, Regional State and Local), but responsibility for the support of the PHCs lies with the local government authorities. However, it was clear that national health policy on the declaration of primary health care and implementation was not sufficient. Basic health needs are strongly influenced by cultural and geographical diversities and lack of clarity on health policies in most regions was a result of poor and inadequate dissemination of information (WHO, 2017). Besides, as a low-income country, Ethiopia has made impressive progress in improving health outcomes for Child Mortality rate with under-5 years at 68per 1,000 live births and the challenges remain, with the maternal mortality ratio at 420 out of 100,000 live births(Wang and Ramana, 2014).Nevertheless, Bilal, et al (2011)

Ethiopia healthcares system, often suffer from weak infrastructure, lack of human resources, and poor supply chain management systems.

Awlachew,et al (2019) he notes that poor access to basic health services cause high rate of morbidity and mortality. Most of the people live in rural areas where healthcare service is detrimental and very poor and their accessibility to these services is abysmally low. Meanwhile, access to any types of modern health institution is limited particularly in rural areas of Ethiopia (Chaya, 2007). Healthcare organizations are responsible for providing multiple services like health education and prevention, disease control and managements, medical and nursing actions for early diagnosis and treatment (Ghazban, 2003).

Moreover, similar situation avail in Gambella regional state. The development of the health sector in the region is lowest compared to other regional states. It is one of the most backwardness regions in the country. However, the region has currently registered increment of the health professionals. Nevertheless, the study conducted by Aynalem (2014) stated that shortage in provision and scare distribution of the health services remains an issue affecting the health status of the people. The barrier to equitable distribution of health cares has shortages of trained health professionals, inadequate provision of health supplies, and absence of modern health information systems.

And thereby inadequate potential productivity and low transport networks are hampering efforts to expand health care. Regional disparities have noted Gambella's low population size ensures a relatively low population-doctor ratio. Basically, the location of social services provided does not always match well to the changing demographic composition of the region. The study of public health center, their function, served and unserved areas of each health centers to reduce the gap, the central motivational factors to conduct research in Gambella Town.

## 1.2. Statement of the Problem

Researchers have been conducting varieties of studies on spatial distribution of public health services in the world. As a result, they generate findings from place to place. Among these investigators Minutha and Sannasiddanannavar(2014) and Malik and Shaikh(2017), conducted studies on spatial distribution of public health services at different places in the world. They similarly found that equity in the distribution of health services and equal

accessibility to such services has become a major principle in most health systems. Therefore, understanding the distribution of public health facilities, human resources, equal accessibility to such resources and improvement of them may lead to better planning to make health services accessible to all. Nevertheless, both studies differ on the factors that cause inequality in public health services. The former study stressed geographical location and distance of healthcare as fundamental cause of inequality whereas the latter emphasized unequal distribution of health professionals. The same study conducted by Sheppard (2002) points out that the distributive equity is affected by the dynamic processes of inclusion and exclusion that emanate from beyond the boundaries of the regions. Kim (2008) argues that spatial inequality is fundamentally determined by the location decisions of the state. Inadequate distribution of health care services causes by shortage of personal and facilities, Andersen (1983). Access to good health care is not universal (WHO, 2008).

In addition, studies have also been conducting on the barriers to the distribution and access to public health services by some researchers. According to Sreerama (2015), barriers to accessing the healthcare services include lack of physical accessibility (geographical barriers), deficit of required healthcare resources, low quality or functionality of health care resources, inability to afford health services due to lack of insurance coverage. Moreover, it is also worth noting that, although, failure of regional policy to address issues of access and transportation contributes to a city form in which household location is determined by a combination of socio-economic status, racial and ethnic identity that dictates opportunity of public health services (Scott, 2004).

On other hand, to overcome barriers to public health services distribution and access, Ensor and cooper (2004) found that there is a clear need for further work to examine the most cost-effective ways of reducing barriers to accessing services and in particular to investigate what methods are most effective in expanding access to essential care among the poor. The challenge for health purchasers—ministries of health, insurance funds, local governments, or civil society organizations—is how to direct finance in a way that improves access through a combination of supply and demand measures.

As shown above, most of the studies conducted in the area of public health services are carried outside of the Ethiopia. And it is obvious that Gambella, one of the regional states of

the country lacks the same studies conducted outside of the country. Therefore, the gap identified is the fact that the area of distribution of public health service in the region remains untouched by researches conducted before. As a result, this study aims at exploring the spatial distribution of public health centers and access to health facilities in Gambella town. In particular, this study focuses on the distribution of public health centers, their functions and services delivery.

## 1.3. Objectives of the Study

### 1.3.1. General Objective of the Study

The general objective of the study is to assess the spatial distribution of public health center and access to health facilities in Gambella Town.

### 1.3.2. Specific objectives of the study are to:

- Examine the causes of spatial distribution of public health centers in Gambella Town.
- Describe inequalities in the distribution of public health centers and access to health facilities in Gambella Town.
- Determine the negative consequences of spatial distribution of public health center in Gambella Town.
- Examine accessibility of health facilities in Gambella town.

## 1.4. Research Questions

- What are the causes of inequalities in spatial distribution of public health centers in Gambella town?
- What are descriptions of inequalities in the distribution of public health centers in Gambella town?
- What are the negative consequences of spatial distribution of public health centers in Gambella Town?
- Are public health facilities accessible in Gambella town?

## 1.5. Scope of the study

This study is geographically confined to the Gambella Town. The main aim of this study is limited to assessing the spatial distribution of public health centers and access to health facilities in Gambella town. In particular, it has focused on the causes, inequality, positive contributions and negative consequences of spatial distribution of public health centers. Moreover, the study had also described the accessibility of health facilities in the study area. Therefore, to assess these issues the data for this study has been collected from both primary and secondary sources within the town. This research was also carried out at one point in time that is cross sectional study.

Concerning the time, this study has been completed within six months as the university authority for academics research recommended, so every specific activities including proposal development, data collection, data analysis and data interpretation was expected to finish before June.

## 1.6. Significance of the study

The study brings the importance of ensuring equity in the distribution of social services of public health centers in the regional level. This is because health facilities are not equitably distributed in the country. Available evidence from introduction has shown that there is uneven distribution of health facilities in Gambella Town. Therefore, the study highlights the need to address these inequalities if Gambella is to achieve universal health care delivery for its citizens.

Moreover, it exposes some of the issues of accessibility such as long distances to access healthcare from health facilities and its implications on health delivery. It also looks at poor road conditions which could lead to long waiting times to get a means of transport as well as high transport cost to health facilities. In this sense, the research would help government to improve road surface conditions in order to enhance access to health facilities with in Gambella Town.

Findings of this study will provide vital information to make inputs to inform government policies and strategies on the issue of spatial distribution of public health facilities in the Gambella town. Again, it will provide the platform to review existing policies on the issue of

spatial inequality in the distribution of health facilities and accessibility within Gambella Town. Thus, the most implementation agency would be informed about some of the challenges people face in accessing health care facilities and the need to put in place interventions to address them.

Specifically, the Gambella Regional Health Bureaus, which is directly responsible for provision of public health services delivery (in terms of policy formulation, monitoring and evaluation and regulation of health services delivery in the region) and their role of implementation and service delivery stands to benefit from the outcome of this research.

Moreover, the outcome of this study will help the future researchers who will be interested in the same topic; it will be a useful material for academic purposes. Reported, this study will have policy implications in the health care service provision and practices.

Equally important, it is also expected that public health provider's especially Government and communities who have knowledge about spatial distribution of public health centers and access to health facilities is low should address people to provide some interventions.

## 1.7. Limitations of the study

One of the major limitations was the acquisition of the relevant data from institution of regional health bureaus, municipality, hospital and kebeles pertaining to this area. There were difficulties in obtaining information from the public servants for the study, particularly on discrepancy of public serviced provision in Gambella Town. The challenges in obtaining the secondary data from the concerned bodies were one problem in this study.

Another limitation on spatial distribution of public health centers and access to health facilities within Gambella Town .It means that, the study was limited on areas coverage by health facilities and lack of data availabilities from local community level. Time and resource constraints were also encountered in this study. Participants were asking incentives to provide information needed from them. Therefore, hesitation and fear of being rejected had made the work become less active.

However, inequalities within each of the districts in terms of these facilities were not established. This is because the amount of data that would be required for such a study would have been so enormous for a study faced with limited time and resource constraints.

## 1.8. Organization of the thesis

The study is organized into five chapters. The first chapter comprises introduction, statement of the problem, objectives of the study, research questions, scope of the study, significance of the study and limitation of the study as well as objective of the study. These set the tone for the discussion of the subsequent chapters. While Chapter two discusses the theoretical framework and related literatures reviews for this study. Moreover, Chapter three deals with the methodology used for this study. Thus, issues such as research approach, sources and method of data collection, samples and sampling procedure, sampling size, sampling frame and method of data analysis were discussed. Meanwhile, Chapter four provided a comprehensive result and discussion of data analysis collected from the field survey. Finally, summary of findings, conclusion as well as research recommendations were discussed under chapter five.

# CHAPTER TWO

# LITERATURE REVIEWS

## 2. Introduction

In this study the review places emphasis on spatial nature that is discussed throughout the regional development literature: on theoretical predictions regarding spatial distribution of social services, the convergence or divergence of per capita incomes affecting the provision of the services. According to Karl Fox's "functional economic area" concept (Fox and Kumar 1994) stated that the variation on the nodal approach is based on the view that the dominance of a central node over the surrounding periphery is attributable to the spatial dependence of workers on adjacent employment centers. In this section the researcher reviewed related literatures written on the topic. There is a clear economic rationale for the delineation of regions based on functionally integrated labor markets. Because workers desire to minimize transportation costs of commuting to work and employers wish to minimize the cost of compensating labor for high commutes, functional economic areas are more likely to correspond to the economic boundaries that firms and workers face in a spatial dimension. This allows regional analysts to examine regional problems in a manner similar to the way the problems are encountered by economic agents.

## 2.1. The Central Place Theory (CPT)

Contemporary developments seem to provide a valuable theoretical benchmark to the analysis of the spatial distribution of health services. Despite the restrictive assumptions of the original model (such as uniform population density, equal transport costs, equal consumer preferences, equal income distribution), its basic concepts of threshold and range can help us in the general understanding of urban networks in the supply of services.

The Central Place Theory, developed by Chris taller (1966), is based on the principle of centrality and considers the space to be organized around a main urban core, called central place. The complementary region, or hinterland, presents a relation of co-dependency with the main core, since this is the locus of supply of goods and services that are urban in nature.

The main role of an urban core is to be a centre of services to its immediate hinterland, by providing essential goods and services. These, in turn, have different features, and generate a hierarchy of urban cores according to the services provided. There are two key concepts to understand CPT: i) threshold, defined as the minimum level of demand necessary to promote the supply of a good or service, which reflects the economies of scale in the production of the service as well as the urban agglomeration economies; and ii) range, defined as the maximum distance the consumer is willing to move in order to access a given good or service, and which varies with the complexity of the service. Therefore, the threshold may be represented as the smallest concentric circle that justifies the supply of a good or service, and the range may be described as the largest concentric circle that forms the complementary region of the central place and defines its area of influence. The limits of such area of influence are given by the existence of another area of influence of another centre of similar or higher hierarchy. The size of this exterior circle varies according to the different goods and services that are supplied, and the demand in its interior varies inversely with the distance to the urban core. The model intends to demonstrate that the sizes of the areas of influence of each central place depend directly to the size and hierarchy of the centre, being the periphery of smaller centre's included in the complementary regions of larger ones. The largest the centrality of a central place, the largest is its hinterland, i.e., the largest the complexity of the services provided, the largest is the area influenced by this centre. According to Regales (1992), the areas of influence of centres of different sizes overlap according to the complexity (hierarchy) of the services supplied, building up urban networks of supply of complementary and interdependent services. Ullman (1970) stresses that the distribution of central places and its areas of influence are not static, and that investment and economic development change the spatial distribution in the supply of services.

Richardson (1969) points up that CPT has limits to its applicability due to its extremely restrictive assumption of a uniform distribution of purchasing power, and given that not all areas receive adequate supply of all services demanded.

Despite the limitations of CPT, we agree with Richardson (1969) when he states that "(…) no other theory emphasizes so much the interdependence between a city and the region where it is located."

Regarding the spatial distribution of complex services, Berry and Parr (1988) argues that in many occasions the services is used very rarely. This argument can be considered given the fact that the supply of health services does not have the same frequency as its utilization. That is to say, emergency services do not present the same spatial frequency as non-emergency services. More than this, there are periodic services that follow identified epidemiologic patterns, but there are also unforeseen and sporadic demands that would justify the supply of complex services without reaching the critical limit that would validate it. From this perspective, a centralized network of distribution of such demands is extremely necessary in order to optimize the system of provision.

## 2.2. Spatial Distribution of Health in the World

There are numerous studies in distribution of health services and spatial disparities in economic development in the world. The distribution of health services in the world differ from country to country and from region to region depends on natural resource, good governance, physical and geographical landform in the countries(Kanbur and Venables, 2005a ; Kanbur, Venables, and Wan, 2006). With issues concerning spatial distribution of health services in the world need to be addressed by different sectors, planners, health administrative and policy makers need to play their role and make sense of the interdependent nature of region's and urban spatial inequality in distribution of health services.

Henderson (2002) point out that, developed countries are more politically decentralized than developing one. In addition, fiscal decentralization is also positively correlated with population size and land area but negatively correlated with percent of population (Ibid). More generally, other industries such as agricultural and mining are likely to contribute to spatial inequality as natural resources are distributed unequally, whereas most services, especially those that serve local markets, tend to reduce spatial inequality (Kim, 1995).

Fay and Opal (2000) argue that Africa's level of urbanization is not all in all different from countries with similar levels of income and economic structure. Rather, because Africa was under-urbanized during the colonial period, they suggest that the recent heave in urbanization without growth may be accounted for by a catching-up premise. Thus, spatial differences in the

distribution of the resources are reflected in urban inequality and discriminative access to the structure of power (Thorns, 2002).

Moreover, places themselves are in continuous process (Massey, 1993), and how health is understood, experienced, and managed will similarly be embedded in the particularities and procession dynamics of place as a critical issue in global. The capability in attainment of wellbeing is differentially distributed across time, space, and citizenship, as well as located within the intersections of gender, class positioning, race, and other social locations that are given particular meaning in a variety of social and geographical localities. Berry (1967) explains spatial access as the core of economic geographers and focus was the relationship between human spatial behavior of individuals' movements in space and spatial structure of the organization of activity which bring misunderstanding among people. Moreover, a concern for people's access to opportunities, where access was seen in terms of spatial separation (measured in distance or travel time) and opportunities were central places (agglomerations of retail facilities) of varying sizes.

Furthermore, travel burden increase, and access decrease, exponentially with increasing distance term describing this phenomenon include distance decay and gravity weighting (Khan ,1992).Thus, access to health care services take on special significance in the nation's frontier areas, where very low population densities and great distances to providers are particularly acute challenge, often requiring special policy consideration. Daniels goes further to describe the central moral importance of health care for the purposes of justice. Effective health care service protection an individual's normal functioning, participate fully in society, and protect a fair share of the opportunities most people would choose. Thus, health care as right derives from societal obligations to protect equality of opportunity (Daniels, 1985).

In other hand, health care is often considered a merit good-a commodity that a individual or society should have based on need, rather than on the ability or the willingness to pay (Johnson, 2005).When health care is considered a merit good, equitable access to health care without excessive burden becomes an ethical obligation of society (IOM, 1993).Therefore, health care is both a social good and a human right Gulliford et al.( ,2002).This suggestion seems to be more appropriate to specific policies such as sanitation and urban infrastructure,

as well as applies it to the regions in which the legacy of an institutional culture unfair towards inequalities yet exists (Werna, 2000).

However, spatial inequality may be socially destabilizing if the regional divergence in economic welfare and political interests contributes to general social instability. The most prominent pattern that emerges from the data on the spatial inequality of developing countries is its varied nature. Thus, nation-specific geographic location and political factors may play an excessively larger role in shaping the patterns of spatial inequality in developing countries as compared to developed nations. These variations in the patterns of inequality of developing nations present significant challenges in identifying the causes of spatial inequality(Kanbur and Venables, 2005a ; Kanbur, Venables, and Wan, 2006).

For this reason, policy makers need to take into account the dynamic nature of spatial inequality, and must be able to evaluate the impact of spatial inequality in the distribution of health services, and most importantly, understand the role of political institutions on spatial inequality.

The spatial distribution of health service in western countries shows improvement due to the availability and utilization of sophisticated hospital based equipment compared to less developed countries (LDCS),where the provision of health care in most of these countries was formally affected for the benefit of the rulers or bad government(Z.Zuganzi,2013). Therefore, more than75% of the Western society has been urbanized for more than a century; the centres of Health Care-Hospitals have been largely based in urban centres. The trends in hospital development, equipment sophistication and the centralization of care have followed the socio-economic development and conditions of these countries.

As noted by Kim (2008) spatial inequality in developing countries was caused by different factors variation in the distribution of social services. Thus, specific indicator is geographic location and political factors in the distribution of social services and services delivery may play a major role in shaping the patterns of spatial inequality in developing as compared to developed nations. These variations in the patterns of inequality of developing nations present significant challenges in identifying the causes of spatial inequality. Therefore, spatial inequality is beginning from interpersonal inequality and it dimension should be considered based on variation in per capital income across group and individuals. Most

fundamentally, uneven distribution of socio-economic across space would cause spatial dimension to inequality.

More importantly, political elites in many developing nations may not solve problem of their countries they reduce problem when they benefit from politics of corruption. Another aspect in developing countries are informal services sector when matched with urban activities on the nature of economic agglomeration will bring market failure in the cities, which is more difficult to estimate exact size of the city. His main focus was inequalities of household income, resources distribution and political implication in the distribution of social services. He concluded that political institution need better understanding of economic development and growth may contain common factors to determine the set of possibility to solving problem associated with inequality.

## 2.3. Spatial Distribution of the Health in the Developed Countries.

Spatial distribution service of health in developed countries has shows progress for technology and utilization of human capital income of health facilities. Most broadly, economic development policies in the developed nations can be characterized in many ways, for the preferred spatial distribution, and by associated support measures (including a skilled workforce and employment land). According to work by Brian J. L. Berry, who studies at empirically testing the tenets of Central Place Theory in various US contexts (Berry 1967).This studies articulated a concern for people's access to opportunities, where access was seen in terms of spatial separation (measured in distance or travel time) and opportunities were central places (agglomerations of retail facilities) of varying sizes. As such spatially distribution of social services, abstracting from space explain regional growth in terms of progression of economic structure from primary sectors, secondary manufacturing sectors and tertiary/services activities (Clark, 2000).

Though, regional economies are not vacuum-sealed; they are placed in national and international, but are opened to the flows of buy and sell from the outside world (North 1956 and Tiebout,1956). They point out that external demand for the products of a regional's export industries are vital determinant of regional growth through utilization of natural resource. Therefore, income from export sales will lead to the development of residentiary activities, capital and labour movements which are future for regional growth. But our

globalizing world the external, national and international environment for a regional economy cannot be ignored. As such internal factors can be of considerable importance and are intertwined with the external determinants (Ibid).

Parkinson et al. (2004) demonstrated the importance of various sectors in economic activities and their contribution for European urban centers growth. This reflects the need for highly sophisticated knowledge and proficiency in modern goods and services, even though there is a danger of becoming trapped in particular structural and technological trajectories that can make them defenseless to shifts in competition and trade. As result, the expression indicate that services are now the key growth sectors, such as finance, business, public administration, education, health and social services.

Therefore, economic development and distribution of social services varies from countries to countries and from regions to sub-region for different activities (Glasson, 2002). Most, generally, developed countries have experienced early for manufacturing industries such as (biotechnology and pharmaceuticals),medical equipment and technology, financial and professional services, computer software, creative industries and environmental technologies. For this reason, most policies incorporate support for diversification, plus a mix of attracting in new industry from outside the region, and often outside the country, but also encouragement for indigenous development. Common features in the preferred *spatial distributions* include regeneration zones, both urban and rural, high-tech corridors, innovation hubs/clusters, science and technology parks, and strategic investment sites. Thus, western countries economic development influenced the number of cities and their geographical distribution of health facilities was extended across cities to regions. Mean while, access distribution to health and health care, and mode of service delivery was a result initiative response of industrial expansion and manufacturing activity.

Fair distribution of social services and their provision in any countries are depended on natural resource, good governance, physical and geographical landform in the countries. The more powerful nation which produces more manufacturing services, creating jobs for the people and urbanization goes hand by hand to core-peripheries to development. Therefore, availability and utilization of sophisticated hospital based equipment of developed countries in health services distribution facilities was indicator of urbanized for more than century of

those countries. Thus, most importantly, spatial distribution of health service in western countries followed the socio-economic development.

## 2.4. Spatial Distribution of Health in Developing Countries

In developing countries, most of the variations of spatial distribution of health are caused by physical access to service and administrative structure of the country (Kanbur and Venables, 2005a, b; Kanbur, Venables, and Wan, 2006). This growing body of work in developing countries has documented the existence of spatial inequalities in many forms in various countries like Asia, Europe, Africa and Latin America. This is because rapid economic growth is often associated with uneven regional and urban development, policy makers are also concerned that development is likely to intensify rather than reduce spatial inequalities.

Yet, despite the fact that, this concerns, there seems to be little agreement on the causes of spatial inequality and how policy makers should respond to growing spatial inequalities. However, spatial inequality may be socially destabilizing if the regional divergence in economic welfare and political interests contributes to general social instability. Kessides (2005) also argues that urbanization in Africa is not excessive or imbalanced, but that the sub-Saharan Africa's urbanization, as well as urbanization in South Asia, Middle East, North Africa, Latin America, and the Caribbean, seems only weakly correlated with industrialization. Rather, urbanization in these regions seems to be fueled by the growth in the informal service sector. However, there seems to be some evidence that urban inequality is greater in developing countries.

In addition to direct impact on the health of developing countries was disorganized function of land markets, which pushes up land prices, and increases the difficulties of providing infrastructure and services (Smolka and Larangeira, 2008). In turn, this affects the ability of the city to attract investments, to create jobs and to generate a better financial base for implementing improvements in the city.

In most case, social categories are not natural or essential but they are constructed through power relations, cultural practices and representational processes (Gregory, 1994).In general, ideally, we hope to better understand how regional economic development and distributive equity are affected by the dynamic processes of inclusion and exclusion that originate from beyond the boundaries of the region (Sheppard ,2002). Thus, these perspectives build on the

basic geographic idea that spaces, including regions, are not fixed but constantly being reorganized and reconstructed in conjunction with the dynamic social relations inherent to capitalist economies.

As noted by Benabou (2000), economic inequality and policies may be jointly determined; suggesting that policy instruments cannot be treated as completely exogenous. However, with in regions and countries, access to health workers is also unequal. If a society chooses an equilibrium path where high inequality and low redistribution are mutually reinforcing, and then attempts to introduce policies of equality may be ineffective. While Benabou's (2000) analysis occurs in a democratic setting, policy constraints may be even more important in nondemocratic societies. While the process of economic development and growth may contain general common factors, each country possesses different geographic, institutional, and political conditions that may ultimately determine the set of possible policies available for solving problems associated with spatial inequality.

Moreover, the extent of spatial inequalities in distribution of health services in most parts of developing countries has shows significant barrier in socio-economic, health, education, and existing of poverty were factors which causes disparities in resources reallocation. According to world health organization(WHO,2008,)more importantly however, is the fact that, the decentralization of health systems in developing countries varied from region to region with population of ,100 000 to 750 000 in sub-Saharan Africa to 5 million in India. However, district and regional/provincial distribution of health care services (facilities, beds, health workers), have had evaluated and implement the penetration of specific intervention programmed, such as shortages of drugs, uneven distribution of health services, poor availability of equipment.

Hence, distribution of service within country between district and regional comparisons is not appropriate to care valuable information for service provision (e.g. equipment functionality, drug availability, training intensity, and infrastructure).According to Hirschman (1958) growth is supposed to trickle down from the core, which emerges through polarization. The concentration forces were collectively referred to by Hirschman as polarization. The term polarization is actually the process of spatial concentration of

resources into a core. He argued that polarization should be viewed as an unavoidable characteristic of the early stages of economic development.

According to him, the result of subdivision of natural unbalanced growth is geographically uneven development, and he specifically cited Perroux's (1955) idea growth pole. The crucial argument, however, was that eventually development in the core will lead to the "trickling down" of growth-inducing tendencies to backwash regions. The implication of his thesis is that government should not intervene to reduce inequalities. Hirschman's approach is therefore set in the traditional liberal model of letting the market decide. Most of those who perceive development as a process whereby societies or social institutions change are more from tradition or less developed conditions to more complex and impersonal conditions are modernization scholars.

## 2.5. Spatial Distribution of Health in Africa

The distribution of social services infrastructure and the development of Africa history have been influenced by European colonial powers whose history has affected the socio-economic institutions, structures socio-philosophies and perceptions of African societies. As stated by Onimode (1988) in their explanations, it give the fact that the historical experiences of Africa from colonial and neo-colonial era of western society cause rural-urban inequality in the distribution of socio-economic facilities. The growth and development of Africa whether in urban or rural infrastructure that provides the essential utilities and services necessary for living standard are characterized by unreliable access of health facilities,inedequate road networks, light or power supply, education and recreational facilities.

Urban infrastructure can better be understood as those specialized basics in the development process that bring about improvements in the distribution of socio-economic welfare of the urban dwellers. The development of Africa and economic growth should be understand when it improved the physical, human, and institutional forms of capital which enables urban or rural residents to better perform their production, processing, and distribution of social services activities, as well as help to improve the overall quality of life. At the same time their presence can be an indicator of the level of development. The positive scenario is that they are classified as social infrastructure; health (hospitals, dispensaries, health centers, primary healthcare), education and utilities (water and electricity). The study of spatial

distribution of public health services in the urban centre's of Kenya. According Z.Muganzi (2013), he explained the distribution of health services in Kenya and expansion of economic growth is not balanced and does not occur everywhere at the same time. According to him, uneven development which generally takes the form of a hierarchical diffusion of health care provision in most parts of the country was a result of colonial era where hospitals were built in centre's of non- Africa settlement.

Most of the high quality of social services especially hospitals and schools are still found and still being expanded mainly in the urban centre's, where their availability does not necessarily mean their accessibility to the potential users who form the majority of the urban poor and low income groups. He conclude that more health care provision are in periphery of the country where major prevention to the formulation of more effective health would appear to be value system of the elite groups and agencies where the structures of their establishment are found in the periphery of the country.

## 2.6. Spatial Distribution of Health in Ethiopia

Health distribution and services provision was witnessed Ethiopia as one of the lowest health statuses in the world. This is because distribution was mainly linked with backward socio-economic development which was resulting in low standard of living, poor environmental conditions, poverty and inadequate health services. In general focus, access to public services and their distribution is an important measure of countries like Ethiopia but the availability and distribution was affected by distance between the residential of households and the facility at hand. Another important aspect measure was human capital of health status of individuals in society in distribution of health facilities which cause difficulty due to inadequate potential productivity and low transport networks. Distribution of health facilities and services delivery and their allocation in Ethiopia was therefore developed through active involvement of different sectors: government, health committees, management boards, community and their representative. The overall aim of health status of the peoples of Ethiopia was fair and equity distribution of health facilities in the countries. According to report of the (WHO ), and Commission on Microeconomics and Health (CMH) the impact of health on adult population and expenditure of household on health was the result of services inequality distribution. In these recent years, the Federal Democratic Republic of Ethiopia

(FDRE) recognized the state of affair to eradicate poverty and strength economic development. Now a day the number of public sector of health facilities has increased dramatically: from 110 to131hospitals; 384 to 600 health centers; and from1, 023 to 4, 211health posts. Currently, the numbers of private sectors have grown up which result into provision of some facilities by non-governmental organizations, private for-profit clinics, rural drug vendor and traditional practitioners all of them make up about one third in services provision.

To ensure effective services delivery and their distribution in the countries a new system was operated: ( 1) primary health care units (PHCU) comprising health centers and five satellite health posts programmed to serve 25,000 people, (2) district hospital can give training and care to population of 250,000 people;(3)zonal hospitals would supply four basic services specialties to 1,000,000 people and training for clinical nurse; and(4) specialized hospital has divided into subspecialist and clinical training give more services to communities. For the issue of services delivery problem within countries, government addressed and enforced HSDP with strong community-based component centered on the Health Extension Program (HEP).

Most broadly, Health Extension Program (HEP) is a new initiative which was operated under (HSDP).The over aim, is to make health care universally through the expansion of health centers and effective implementation of Health Extension Program which constitutes the Primary Health Care Unit at community level. It main objective is to improve access and equity of health care delivery system in community or kebele health services with strong focus on health actions and health awareness. The health extension workers would provided more focusing on preventive health measures targeting households particularly women/mothers at the kebele level. With this matter government intended to deploy two health extension workers per Kebele with 5,000 populations and be accountable to health centers of their areas, stated by Tesfanesh Belay (2015).

The WHO describes PHC as ‘an integral part of the country’s health system of which it is the central function and main focus, and of the overall social and economic development of the community’ (WHO, 1978). WHO’s Declaration of Alma-Ata (1978) outlined ten essential aspects of health and health care and the importance of primary care to achieving health for

all. This comprehensive approach to PHC accounts for socio-economic and cultural determinants of health, identifies primary health needs, provides health care to the total community and integrates preventive and curative care with significant community involvement (Gofin, 2005).

## 2.7. Spatial Distribution of Health in Gambella

In Ethiopia, the distribution of health facilities among regions remains uneven in the coverage of health provided by government. Most factors are poor road coverage which is major cause particularly rural Ethiopia, where access to any types of modern health institution is limited at best. In addition, inadequate health systems, roads network and transportations are severe, especially during rainy season. In rural area almost all births take place at home in Ethiopia (94%) with only six percent of women delivery in a clinic or hospital. Many of these women live in remote areas that are too far from a road, let alone of health facilities where they can receive obstetric care stated by (Chaya, 2007).

Therefore, in Gambella region access distribution of social services to public and services delivery was started since1967 in time of imperial regime, and1995 the National Urban Planning Institutes (NUPI).As such the development plan in the distribution and reallocation of social services fail to satisfy the demand of people. In more general terms, there are many aspects which prevent effective distribution such as: lack of finance, skilled personnel and equipment. Moreover, proper implementation was affected by absence of good governance by the former ruler.

In March 2005, Federal Urban Planning Institute (FUPI) operated development plan which produce the clear map of the town. The planning process was care by various sector committees, town representative and stakeholder to collect all necessary data. Therefore, the planning team analyzed the situation of the town and thereby they identify problems and opportunities of the town. The main issue identified was capacity building of the municipality, opening of access road and preparation of waste management size in the town. On that basis, Gambella town plan has prepared with interest in alleviating poverty and making the town as center of administration, commerce, industry, education and tourism. Moreover, urban center with good social and infrastructure services was made in the core but services are limited in certain part to peripheries.

**Table 1.Land use in Gambella town by functions and category**.

| No | Land Use Classification | Total area (ha.) | % of the total urbanized area |
|---|---|---|---|
| 1 | Residence | 472.31 | 27.42 |
| | - Pure (Existing) | 121.86 | 7.08 |
| | - Pure (Proposed) | 288.18 | 16.73 |
| | - Mixed (proposed) | 62.27 | 3.61 |
| 2 | Administration | 62.41 | 3.62 |
| 3 | Commerce and Trade | 62.87 | 3.65 |
| 4 | Services | 168.89 | 9.80 |
| 5 | Manufacturing and Storage | 73.65 | 4.28 |
| 6 | Transportation | 7.63 | 0.44 |
| 7 | Recreation | 61.76 | 3.59 |
| 8 | Agriculture | 205.59 | 11.93 |
| 9 | Forest and Informal Green | 74.10 | 4.30 |
| 10 | Special Function | 187.84 | 10.90 |
| 11 | Road Network | 345.7 | 20.07 |
| | **Total** | **1722.75** | **100.00** |

**Source: MOWUD, 2007**

## 2.8. Operational Definitions

**Spatial distribution**: can be defined as the arrangement of phenomenon across the earth, s surface and geographical display of such arrangement is an important tool in geographical and environment statistics (Wikipedia).

**Health:** is defined broadly, concerning both ill health (i.e., disease) as well as positive health (i.e., well-being and quality of life). (Kearns 1995, Kearns and moon 2002)

**Health**: is defined as a state of complete physical, mental, and social well-being and not merely absence of disease or infirmity (WHO, 1947).

**PUBLIC HEALTH:** defined as the science and practice of protecting and improving the health of the community, as by preventive medicine, health education, control of

communicable diseases, application of sanitary measures, and monitoring of environmental hazards The American Heritage Dictionary, Public Health Institute. PUBLICHEALTH 101(Winslow, 1920).

**Spatial Equity:** a distribution of services among the population spatial in way considered fair and socially just (Amer, S., 2007).

**Spatial Effectiveness:** services provided at particular locations should offer real benefit (Amer, S., 2007).

**Spatial Efficiency**: organized the spatial configuration of supply to obtain highest output from a finite level of resources (Amer, S., 2007).

## 2.9. Spatial inequality in distribution of social services

Spatial inequalities in many countries, both developed and developing have linked inadequate access to healthcare facilities which increasing unavoidable and preventable deaths. While systematic evidence on the extent of spatial inequality in developing countries is still relatively scarce, many studies of work has documented the existence of spatial inequalities in many forms in various countries in Asia, Europe, Africa and Latin America (Kanbur and Venables,2005a,b; Kanbur, Venables, and Wan, 2006).

Within and cross countries attributed factors influencing distribution was geographical imbalances in the health workforce and shortages of skilled health personnel in rural and poor urban area is an issue of social and political dimension in most countries (World Health Report, 2006).

In developing countries the provision of health services is characterized by large regional disparities. In Nigeria, the geographical distribution of health facilities imposes constraint on the access to these services, given that the distance between the locations of supply and demand imposes additional difficulties to the use of the services. The government budget huge amount of money for sustainable development and for the important of health care facilities but the sect oral approaches are adopted, without giving much attention to the spatial dimension of the facilities provided. The distribution of health care services has shown wide discrepancy both by type of service available and the distance from other center providing similar services (Sanni, 2010).

Inequalities in access to social infrastructures may also be as a result of inefficiency in the distribution and allocation of facilities between areas or as a result of social barriers like ethnicity, religion or status which may directly limit certain groups from having access to public facilities (Stevenson, 2004).

## 2.10. Cause of spatial inequality

The excessive concentration of urban population and political interests in the city may impose social instability in the distribution of social services. More specifically, uneven distribution of natural resources, poor road network which were associated with underlying socio-economic are attributor factor of spatial inequality which bring problem in the regions and urban development. According to Williamson (1965), four reasons are mentioned which cause spatial inequalities: natural resources, migration, capital mobility, and government policies. He stated that most natural resources are point resources and thus are unequally distributed among different regions of a country. A creation of new resources will then increase unbalanced development of regions, and a selective influx of labor and capital, perhaps encouraged by government policies, will lead to a further increase in spatial inequality. According to Berry and Parr (1988) argued that in many occasions spatial distribution of services in many countries have more challenges in their used. However, it is very difficult to solve these problems in the contact of supply of health services which does not have the same frequency as its utilization. That is to say, emergency services do not present the same spatial frequency as non-emergency services. More than this, there are periodic services that follow identified epidemiologic patterns, but there are also unforeseen and sporadic demands that would justify the supply of complex services without reaching the critical limit that would validate it. For this reasons, a centralized network of distribution of such demands is extremely necessary in order to optimize the system of provision.

## 2.11. Extent of spatial inequality in the distribution of social services

The significance nature of place in ensuring access to care in hospitals varied in type, specialty, scale, and location, and patients who always cross town or city boundaries for doctor or hospital services, which is an inevitable consequence of dispersed population and medical services. As people live and work in urban spaces, they strongly consume hospital services and service-oriented. To eliminate spatial polarization and to reduce spatial

differences they need to improve spatial distribution of social services to maintain fair resource allocation.

## 2.12. Consequence of spatial distribution of social services

In many countries, barrier of spatial distribution of social services cause regional variation in distribution of health income, education and transportation. Moreover, inadequate distribution of social services cost barriers to healthcare, either through the patient's inability or regional shortage of personnel and facilities. Barriers to accessing the healthcare services are lack of physical accessibility geographical barriers deficit of required healthcare resources, low quality or functionality of health care resources, inability to afford health services due to lack of insurance coverage. Poor health and inadequate public health services such as waste collection, lack of access to clean drinking water coupled with inadequate sanitation and where air quality is poor. However, as Bailey et al (1993) pointed out, the mismatch between service needs or demands and services supply were factors that cost allocating inefficiency. Certainly, Stevenson (2004) argued that inequalities in access to social infrastructures may also be as a result of inefficiency in the distribution and allocation of facilities between areas or as a result of social barriers like ethnicity, religion or status which may directly limit certain groups from having access to public facilities. This gap, as Olajuyin et al (1997) found, healthcare facilities were unevenly distributed among the settlements and that the distance was a paramount factor.

## 2.13. Solution needed to solve spatial distribution challenge of social services inequalities

Most importantly, the best way to overcome services inefficiencies is to improve a system which helps plan and monitoring efficient allocation and promoting greater access to health care services. In addition to this issue where challenge are faced by people for the services provision commitment is needed to strengthen health systems for equitable health outcomes and specifically to develop social protection systems. Moreover, implementation distribution of health services will be achieved whenever rule and regulation are enforced on those who misuse country property. Indeed, concerned with the distribution and allocation of resources within countries structural adjustment is best solution to solve services inequalities in the city

government which have responsibility for providing and control of services. According to Thorn (2002) argues that spatial distribution of resource in urban city have multi-effect due to inequality access and discriminative of power structure of politician and administrative structure of urban managers.

## 2.14. Types of health facilities

The Federal Democratic Republic of Ethiopia (FDRE) recognized the state of affair to eradicate poverty and strength economic development. Now a day the number of public health facilities in Ethiopia is: 131 hospitals, 600 health centers and 4, 211health posts. According to survey results respondents explained that in Gambella town there are three health facilities one general hospital, one health center and one health post which are run by government.

## 2.15. Literature Gaps

A more interesting conceptual gap, however, concerns about many studies focused on health distribution of social services in general and the relationships between distance across space and health care services delivery and the allocation of resource.

Another aspect was inequalities distribution of health services within country was a result of western colonization and former ruler ideology. The gap identified was concentration of more services provision in the peripheries and the vast coverage of the studies. This ideas base on the western missionary or organizations which provide health services at peripheries around big city.

The political implication on health services distribution and allocation of resources within a country. These gaps have seen as attributed factors of inequality in distribution of health services in general. Therefore, this study attempt to find the solutions which can work as a panacea in health care service delivery by assessing the contextual challenges in countered in the study area.

# CHAPTER THREE

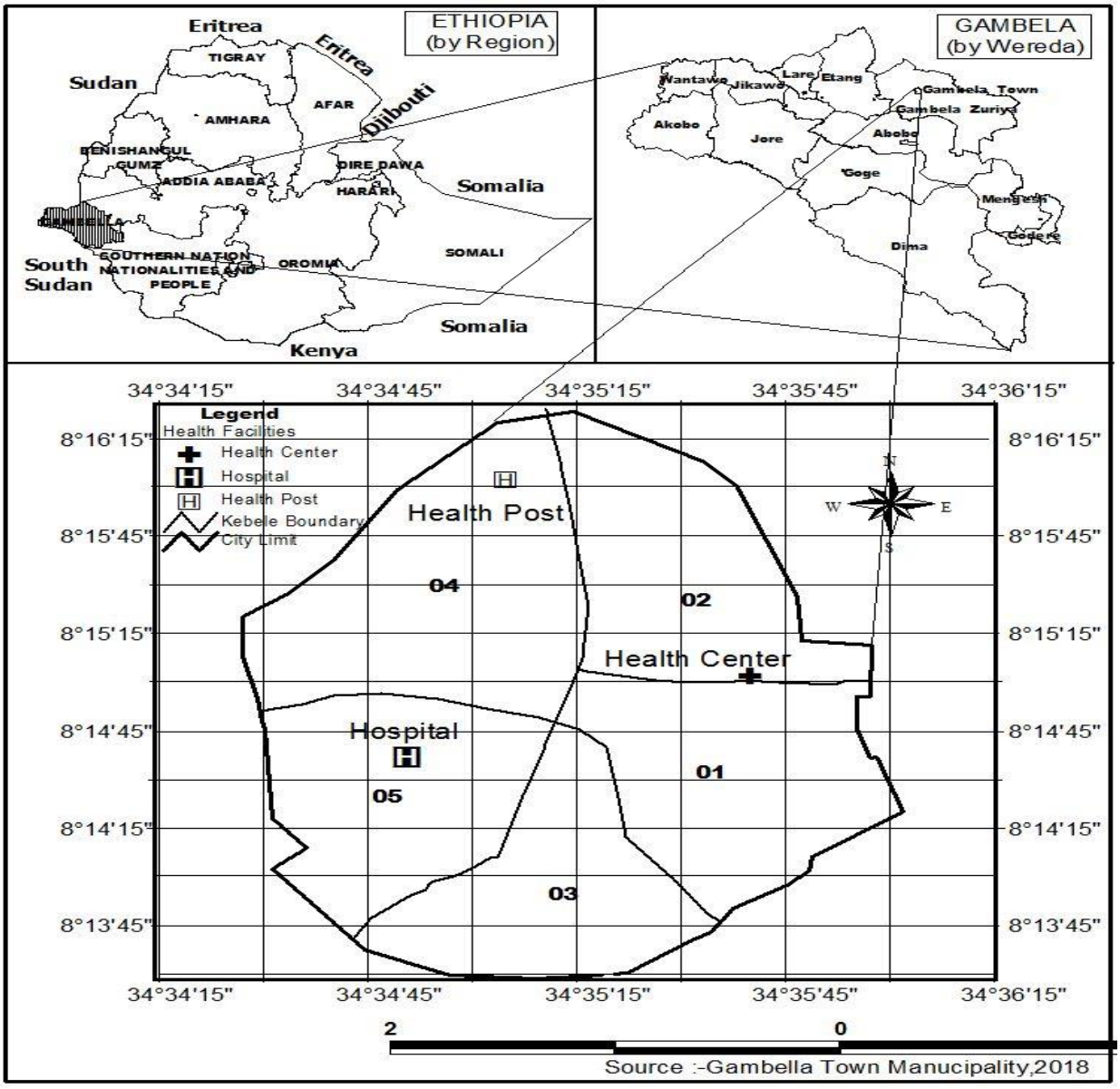
# RESEARCH SETTING AND METHODOLOGY

## 3.1. Description of the Study Area

The Gambella People's National Regional State is the one of the regional states of Ethiopia. It is located in the South West of Addis Ababa. According to Central Statistic Agency of Ethiopia (2007), Gambella has an annual population growth index of 4.01 with a population of 307,096 where 159,787 of them are males and 147,309 are females. Within the region, there are five indigenous ethnic groups with a population of 143,280 Nuer, 64,986 Anywaa, 12,280 Majang, 990 Opo, and 224 Komo. There are also other Ethiopians who live in the region with a population of 96,388.

Gambella region has been subjected to occasional expansion of its area mainly due to administrative reasons. It has an area of 34,063km2. Recently the region is known to have three administrative zones and 13 *Woredas*. The capital of the region is known as Gambella town, which is located at a distance of about 766km from Addis Ababa. Furthermore, Gambella Regional State is bordered to the state of SNNPRS in the South and with Oromiya in the North, Benishagul-Gumuz Regional State in the East and Republic of South Sudan in the West. According to Central Statistic Agency (2007), the total population of Gambella town is 39,022.

**Figure 1: Map Showing the Location of the Gambella Town**




### 3.1.1. Topography

Gambella region is endowed with tremendous natural resources. It owns fertile land, favorable climate for various types of agricultural products, suitable rain fall, underground and surface water, fishery, forestry and mining. Hence, most parts are characterized by flat topography and humid climate. While some parts of this region are characterized by slopping and rolling terrain land form.

### 3.1.2. Demography

Gambella National Regional State is located in the South West part of Ethiopia with distance of 766 kilo meters from Addis Ababa. The region is inhabited by several of different ethnic groups of people. The five indigenous ethnic groups are Nuer, Anyuak, Komo and Oppo in the region. The five indigenous ethnic groups in this region are depends on agriculture and livestock as their economic status. They also have difference languages spoken in the region. Many other languages are also spoken in the region due to the influx of people of various ethnic backgrounds across the nation.Ahmaric is used as the official language in the region .According to the Central Statistic Agency (CSA,2007) the population of the region is 307,096 of whom 159,787 were males and 147, 3098 were females.Hence,the largest population of the region is 46.65% Nuer, 21.17% Anyuak, 8.42% Amhara, 4.83% Oromo, 4%Mejenger, 5.05% Kefficho, Kembeta, and the rest are Shekecho, Bench, Tigrian and others.

## 3.2. Research Approach

According to Kothari (2004), mixed research concerns with both quantitative and qualitative phenomena relating to or involving numerical and quality or kind. Therefore, mixed research uses multiple data collection methods that are interactive and humanistic. Therefore, a proper implementation of this design in this study has produced effective results in term of causes, inequality, and negative consequences in distribution of public health centers and access to health facilities in Gambella town. According to Kothari (2004) a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. In fact, the research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data.

Moreover, Cresswell (2002) there are different research designs but the best design is determined by nature of the problem under study. Kothari (2004) cross-sectional studies provide a clear 'snapshot' of the outcome and the characteristics associated with it, at a specific point in time. Kleinbaum, Sullivan, and Barker (2007) describe across-sectional as a snapshot of the health experience of a population at a specified time and had often used to

explain patterns of disease occurrence. Hence, cross-sectional is a convenient and inexpensive way to look at the relationships among several exposures and several diseases.

Therefore, by considering the purpose of this study which is in partial fulfillment of requirements for the degree of master of art, this research is cross-sectional, which utilized mixed research method. This design has been used for this study because it can encourage the generating of detailed information about the issue under study. Similarly, Kothari (2004), research design is needed because it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort, time and money. This study had looked into the aspects of the spatial distribution of public health centers and access to health facilities, which include causes, inequality, and negative consequences of existing public health centers distribution in Gambella town.

## 3.3. Sources and Methods of Data Collection

Both primary and secondary data were collected for this study. Primary data were collected from respondents and key informants through field interviews and questionnaires. As a result, within a total sample of 268 participants of the study 100 individuals who were patients in general hospital and health center were interviewed. Each of them was given a 20-30 minute for an interview. However, before interview takes place six enumerators who were students of Gambella Teachers' Education and Health Science College were selected. However, before interview takes place six enumerators who were students of Gambella Teachers' Education and Health Science College were selected. The enumerators were given a short training on data collection technique and each of them was given 500 birr as their incentives through the interviews. An individual enumerator has successfully interviewed 20 respondents in the health center. Nevertheless, some challenges were faced by the enumerator during the interview. The enumerator claimed that some patients who were seriously sick hesitated and slowly provided the answers of the question being asked. As a result, the time planned for interview was used unwisely.

To continue data collection with the rest of sample respondents, health bureaus 40, transport office18,municipality, 20, hospital and health center 70 respondents, physician, nurses, pharmacists, midwifery, and psychiatrists were given questionnaires in order to fill. In the

mean time, they complain that they should be given one full day to fill and return back the questionnaires because they were busy for their official works. In the next day they all manage to return the filled questionnaires.

To cover the sample size selected for this study, 20 respondents were selected from five kebeles , 02, 03, 04 and 05 kebeles of Gambella town. In each Kebele 4 respondents were interviewed. Five enumerators were chosen from the same College that is Gambella Teachers' Education and Health Science College. For single interview, 20-30 minutes were provided. For each enumerator to interviewed the respondent in Kebeles. The challenge faces during this interview was respondent unwillingness to provide information due to fear that the interviewers may be intentionally send by government agents but when the intention of interviews were explained to them in detail they willingly provided the information.

Finally, in order to triangulate the data gather through respondents' interview, key informants were also conducted with five chiefs of five Kebeles and the heads of Health Bureau and Gambella Town Mayor as well. At this juncture, difficulty of getting key informants was also a problem encountered but the author of this study repeatedly visits them until all of them were interviewed.

Similarly, secondary data were also collected by reviewing documents from published and unpublished works such as, Books, Newspapers, Journals, and Articles. Some of these data include Statistical reports from health centers and health professional data were also reviewed.

## 3.4. Samples and Sampling Procedure

This study used sample from population of the research target group related to this particular topic. According to Mugenda (1999), sampling unit refers to sample from the whole population to be investigated. The researcher summed up the number of employees who were working in Gambella health bureau, hospital, health center, municipality and transport bureau. Gambella town has five administrative kebeles head of each kebele was included in the sample. Patients who were looking for medical treatment were also included. The target population for this study was 813 from this the researcher used sample from this population.

The study employed the convenience sampling technique. The sample sizes from 813population, 268 respondents were selected by non probability random selection to ensure spatial distribution public health centers, availability of healthcare facility and access to health services. The questionnaire and interview were randomly administered to the respondents in this study area. While the sampling technique was then used to determine the sample size and number of questionnaire has been distributed to the selected population in the study area.

## 3.5. Sample size

The sample size is an important feature of any empirical studies**.** It helps to determine sample from large population. This study used Israel formula for determining the sample size. Representative from various offices and stakeholders in Gambella town were identified as follows:

The size of the sample for the survey is calculated by using a formula of Yamane (as cited in Ajay & Micah, 2014). The formula is used to calculate the sample size with 95% confidence level and P =0.05, as shown below:

$n = N / [1 + N ( e )2 ]$ Where n is the sample size,

N is population size, and

e is the level of precision.

The sample size from 813 populations was 268

## 3.6. Sampling Technique

This study used sample from various offices and stakeholders in Gambella town. Sampling procedures were used to get exact representative from the population. The researcher used non probability sampling technique; hence, convenience sampling to get key informants from difference offices. The reason to use convenience sampling technique was because it is inexpensive way to collection data from various offices. The researcher select respondents from health bureau, hospital, health center, transport bureau, municipality office, kebeles and patients who were travelling daily to seek medical treatment.

## 3.7. Methods of Data Analysis

The collected data were analyzed by using mixed methods. Therefore, all questionnaires and interview with key information about spatial distribution of public health center and access to health facilities were tabulated and analyzed. The inequality and equity were organized and all the data were analyzed using SPSS version 22, the tables and graphs were used for the presentation of the results. Whereas the qualitative data were used to describes and explained the outcome of interviewed questionnaires from respondents.

## 3.8. Ethical Considerations

Research ethics has become an area of much greater concern in recent years; with many universities, and research funders requiring that research receive ethical approval before it is carried out (Sapsford and Juppt, 2006). This study has considered the ethical issues in order to obtain effective information of the issue understudy. This ethical consideration has entertained the autonomy of the person, justice, and beneficence. In this thesis, ethical issues of the research have been taken into consideration. Hence, letters that require different concerned bodies support were written by the department of Geography and Environmental Studies, Addis Ababa University.

Before data collection takes place, the official letter of approval has been submitted to Gambella health bureaus, hospital, health center, transport bureau, municipality office and kebeles where the study will take place. The researcher has selected the research participants based on their consent. Next to this, the researcher introduced himself. He has informed the research participants about the purpose of the study, the benefits and notions of risk of participation, guarantee of confidentiality, and assurance of withdrawal at any time during the interview and questionnaires provision of contact address for possible questions that might arise (See appendix, I).

Creswell (2002) suggests that consent has a brief description about the identification of the researcher, how participants have been selected, the purpose of the research, the benefits and notions of risk of participation, guarantee of confidentiality, and assurance of withdrawal at any time during the interview and provision of contact address for possible questions that might arise.

Every possible effort has been made to ensure secrecy, not to disclose the identities of the participants and the information they provide without their permission. Thus, participants' number and names change has been used to preserve anonymity trust. Creswell, (2002) researchers need to safeguard the research participants in all the way and need to develop the trust. In this way, the researcher was able to get trust and cooperation from many organizations as well as individual participants of the study in the overall process of gathering the necessary information. In addition, all participants of were informed about the nature and the purpose of the research and ask for their consent to participate in the study. They were informed that their identity and response should remain confidential and not used for purposes other than the objectives of the study. They were also informed of their unconditional right not to participate or withdraw at any time. Overall, it would be after participants' verbal consent that the data gathering process were operational taken place.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

## 4. Introduction

This chapter presents the results from the data obtained from the study areas. It presents the data collected through questionnaires from different sections of the study area. It also presents the data collected by the means of interviews from five kebeles and patients who used public health-care facilities. The information were collected from 268 respondents, out of which 20 respondents were selected from five kebeles, 100 were patients in the hospital, 40 were from health bureau, 18were from transport bureau, 50 were from hospital workers, 20 were from municipality and 20 were from health center. The responses rate in this study is 100%, which means that all the respondents have returned all the questionnaires. In addition, among the respondents 120 interviewee were interviewed.

## 4.1. Profile of Respondents

### 4.1.1. Classification of respondents by sex

Regarding the classification of the respondents by gender, the study result has shown that among the total respondents, about 215 (80.2%) of which were males where as 53(19.8%) of which were females respondents. Thus, Table- 4.1.1 below illustrates the number of the respondents by sex.

**Table-4.1.1. Classification of respondents by sex**

| **Sex** | **Frequency** | **Percentage** |
|---|---|---|
| Male | 215 | 80.2 |
| Female | 53 | 19.8 |
| Total | 268 | 100.0 |

**Source: Field Survey, 2018**

### 4.1.2. Classification of Respondents by Ages.

As it is described in the table-4.1.2 below, the age classification of the 268 respondents has been found that about 56(20.9%) were between the age of 18-23 years old. About 77(28.7%) were between the age of 24-29 years old and 71(26.5%) were between the age of 30-35 years old. Distinctively, about 41(15.3%) were between the age of 36-41 years old while 23(8.6%) were between 42-47 years of ages. The least number of the respondents from the age distribution groups was the group ranging from 42-47 years of ages. The implication here is that the selected samples were dominated by young adults.

**Table-4.1.2. Classification of Respondents by Age**

| **Age** | **Frequency** | **Percentage** |
|---|---|---|
| 18-23 | 56 | 20.9 |
| 24-29 | 77 | 28.7 |
| 30-35 | 71 | 26.5 |
| 36-41 | 41 | 15.3 |
| 42-47 | 23 | 8.6 |
| Total | 268 | 100.0 |

**Source: field Survey, 2018**

### 4.1.3. Classification of respondents by educational level

The description of qualification of the respondents is presented in the table-4.1.3 below. About 22(8.2%) and 78(29.1%) of respondents were certificate and diploma qualified respectively while 136(50.7%) and 32(11.9%) were bachelor degree and master and above. Generally, it is true that the predominant numbers of the respondents are those who are degree holders. Therefore, there is an educated work force.

**Table 4.1.3. Classification of respondents by educational level**

| Qualification | Frequency | Percentage |
|---|---|---|
| Certificate | 22 | 8.2 |
| Diploma | 78 | 29.1 |
| Bachelor degree | 136 | 50.7 |
| Master and above | 32 | 11.9 |
| Total | 268 | 100.0 |

**Source: field Survey, 2018**

### 4.4. The causes for unfair distribution of public health centers in Gambella Town

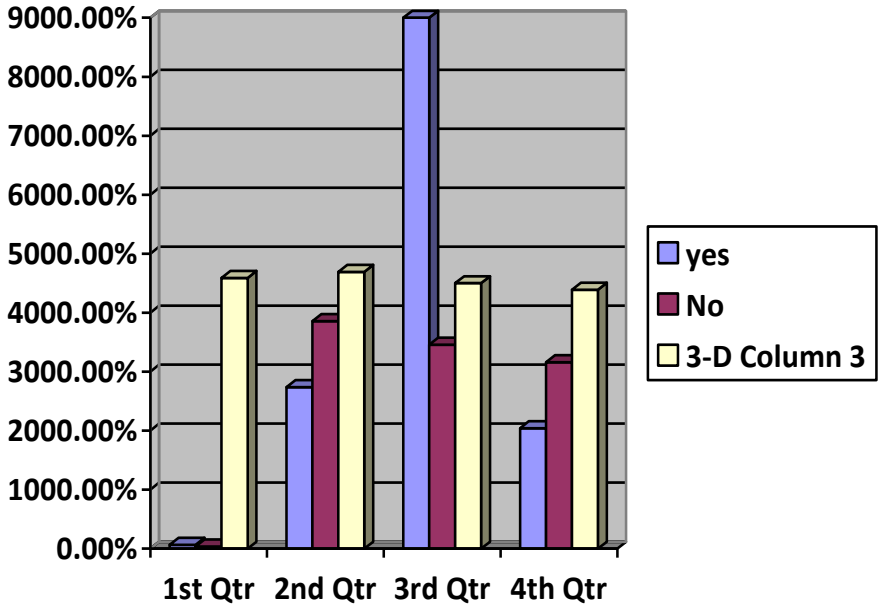
The respondent's response to the research question number one of which this study needs to address. It been addressed as, what are the causes of spatial distribution of public health centers in Gambella Town?

The challenges of health facilities in Gambella town have become one of the major obstacles which affect community health in the region and in Gambella town in particular. This study presents some of the bottlenecks which were mentioned by respondents. According to the results, the cause for unfair allocation of public health in the town is linked to different factors. Almost all respondents agreed that the causes for these are lack of resources, lack of good governance and corrupt practices among others.

Thus, other respondents claim that excessive concentration of urban population and political interests among certain groups in the town could impose instability in distribution of public health facilities. According to 2007 population and housing census, it shown that population dynamics has direct cause on the geographical distribution and with other aspects of social and economic change in distribution of public services. Therefore, the respondent's response for the cause of spatial distribution of public health centers were explained as a result interest of political leader in which health facilities were located where their ethnic groups are living. And thereby, uneven distribution of health services in Gambelle town has become a major issue, despise inadequate distribution, there are implication where they are located because two majority ethnic groups Nuer and Anuak were not living in same kebele in the town they

are living separately said by the patients in the interview. Moreover, in line with key formants interviews the problem in distribution of public health service has understands as lack of good governance and corruption of those who hole main position in the town. The survey result indicated that 64.8% of the respondents agreed public health centers are not equally distributed, while only 35.2% of the respondents disagreed.

*Figure. 4.1. Illustrates the response rates of respondents concerning the causes of the unfair distribution of the public health*




**Source: Field survey, 2018**

## 4.4. Distribution of Health Facilities in Gambella Town

According to 2007 population and housing census, the health facilities are spatially distributed as shown below by table 4.3. That means the region has a hospital, health center and health post in three kebeles. The cause of distribution of the health facilities in the town is not clarified by the census but when key informants interview was conducted, the state minister of health bureau claims that the facilities were distributed based on the population of the kebeles. Therefore, key informant interview conducted with the state minister was not in

line with the survey result. Moreover, existing of only three health facilities in the region indicated that the people have little access to public health services.

**Table 4.1.4. Distribution of public Health Facilities by Kebele and Population**

| Kebele | population | Hospital | Health center | Health post |
|---|---|---|---|---|
| 01 | 9,777 | 0 | 0 | 0 |
| 02 | 5,841 | 0 | 1 | 0 |
| 03 | 8,586 | 0 | 0 | 0 |
| 04 | 7.317 | 0 | 0 | 1 |
| 05 | 7,501 | 1 | 0 | 0 |
| Total | 31294 | 1 | 1 | 1 |

**Source: Field survey,2018**

### 4.4.1. Number of health facilities in Gambella town

According to 2007 population and housing census, it was clear that the number of health facilities provided by government in Gambella town is not enough to ensure effective service delivery compared to other region. Therefore, the existing numbers of health facilities which were provided by government are three; one primary health center, one health post and one referral hospital. The respondent's claim that these health facilities could provide service but their function is over use by the largest population who are in need for medical propose in the town.

The same finding indicated that there more than 25 private health centers, but these health facilities provide little quality health care to the community. Respondents have emphasized that the operation of these facilities are problematic because government doesn't regulate them properly. Lack of resources to build more health centers in proportional to the population is also impossible because of resources limitations in the region. Another problem

found out by the researcher is that those in authority they know the exact population of Gambella town since the last census result in 2007. The estimated population increase of the town for many people is not clearly understood. There is an increase of the number of people who recently arrived in Gambella town from various parts of urban centers who sought employment opportunity in different investment types in the region. Spatial distribution of health facilities is very crucial for the general wellbeing of the citizens. Various literatures also support this and encourage easy access to health care facilities based on the criteria considered as standard for health care accessibility.

## 4.5. The extent of spatial inequality in the distribution of public health centers in Gambella Town.

According to survey and interview results, the extent of spatial distribution of public health centers in Gambella is very challenging. Hence, the descriptions of spatial inequality in the distribution of health services in Gambella town compared to the standard population have become crucial challenge which has been faced by the people. According to (MOH,2005) the standard population considered for distribution of public health services and access delivery in the country compared to the existing distribution of health facilities in Gambella town has show a wide gap. Thus, this distribution of health facilities in the country is based on population in which Regional hospital can give services to population of, 250,000,Zonal hospital with,100,000, and health center with,25,000 as well as heath post with population of,5,000.

According to (MOH), each kebele in the town in the distribution of health facilities to it population size is served by one health post institution. However, the distribution of health services and access to health facilities is not effective in Gambella town where there are only three health facilities compare to other regions of Ethiopia. From the findings of the study, the distribution of health facilities are not unbelievably lacking in some parts of the kebeles in the town. From the responses obtained, there are three health facilities which provide services to the communities. However, of the 268 respondents in Gambella town, 157 said that there is no availability of health facilities, while 64 claim that access of health facilities is appropriate in the center and the periphery part of the town lack health services provision. And thereby, 47 reported that distribution of health facilities and access to them is fair and

appropriate within the town. There is no 100 percent responses on availability of health facilities by respondents.

This study, recognizing the inadequate distribution of public health services as well as accessibility of health facilities in Gambella town. According to respondents what make the matter worse is that Gambella town has number of ambulances which do not provide service to local population in the town. They are used only to refer sick people out of the town for farther referral either Jimma or Metu referral hospitals.

Moreover, inadequate distribution of public health services together with shortage of health facilities within town was indicator of inequalities in their distribution. In that case, respondents have been also claimed that, the existing of spatial inequality in Gambella town often reflected in disparities in the distribution of infrastructural facilities among the communities. When these shortages of health facilities and access to health services are improved upon, they will be a solution to sustainable for all kebeles development within Gambella town.

According to Silas(2011) development is an integrated process involving several components which include agricultural development, industrialization, improvement in social and physical infrastructural facilities in sectors such as health, education, transportation, water, electricity, etc. Thus social infrastructures are critical variables in their distribution for development. They are recognized for their ability to provide many prospects for employment and income generation among people of the country. Therefore, to overcome the health services challenges and access to health facilities in Gambella town. They will be distributed base on national criteria by considering the population size of each kebele.

## 4.5. Distance travelled to access various health cares

The comparison between distances travelled to access the various healthcare facilities, 16.8% and 22.0% of participants indicated a distance to health facilities is, 1km and 2km to the nearest health care facilities, while 30.2% to31.0% participant indicated distance of 4 km and over 5 km access to health care facilities. This shows that the majority of the population has small access to health care services.

**Table 4.1.5 Distance travelled to access various health cares**

| Distance | Frequency | Percentage |
|---|---|---|
| 1km | 45 | 16.8 |
| 2km | 59 | 22.0 |
| 4km | 81 | 30.2 |
| Over 5km | 83 | 31.0 |
| Total | 268 | 100.0 |

Source: Field survey, 2018

### 4.5.1. Distance affects access to health facilities

In Gambella town the problem of road has been identified among the major priority issues as the city was expanded beyond its level. Efforts to construct urban road transport which can provide access and facilitates interaction as well as integration of segregated urban spatial units. Generally, the implementation of the master plan was to widen the existing narrow roads according to their hierarchy. According to (CSA, 2007) in order to overcome the challenges in distribution of access to health facilities the construction of road has implemented to integrate the entire spatial unit in the town. In fact few roads were constructed in the middle of the town but their construction failed to reach the periphery of the city. Most of the existing roads are very poor in quality, narrow and abruptly blocked and there is a need for government to revitalized or to construct more in order to improve the standard of roads for all areas and hence accessibility for all citizen as well.

From the study findings, access distribution of health care is very difficult for people to get because the utilization of health services depends on many factors. Therefore, implication of migration on access to health facilities has observed as a major challenge in Gambella town. In Gambella town, 57% identified as migrants and with highest growth rates of (4.1%).Thus, poor infrastructure and limited transportation that make health facilities, personnel, and services hard to reach has a result increase of urban population.

With key informants interviews two kebeles head, claim that access to health services is not appropriate, some parts of the town have no access to health facilities that are found far in the

town. These areas were created as a result of town expansion so some people prefer to visit private facilities to get health care services. From respondents, 68 patients who were interviewed reported that there is need for fair allocation of health facilities in the town because many people died on the way to hospital. Again looting of property on the way to health facilities and long walking has caused by inadequate access of health facilities. As the town population is increasing dramatically so that additional government health faculties are needed to be constructed to narrow the gap. In time of emergence it was very difficult to reach health care due to long distance and inadequate access transportation in the town.

Massey (1984) he noted that space-size, density, distances, direction, territory and location can exert powerful influences on urban development and on human interaction. Of course social dimension on access to services should create complexity and diversity in the city based on their variety. Inadequate access of transportation and long distance difficulty to reach health care services has problem which affect the accessibility of health facilities. Hence, the survey result shown that 40% of the respondents agreed that because of long distance to travel they preferred nearby private health centers with limited health facilities to avoid the distance, 85% of them shown that they don't have access to health facilities and finally 65% said they don't have any problem with distance.

According to (CSA, 2007) there are number of factors which undermine the effectiveness operation of accessibility of public health facilities in the town. The demand for transport in Gambella town, whether of people or goods, is affected by a complex set of personal; site and location of socio-economic, infrastructure provision and lack of availability of health facilities. These problems are caused by rapid population expansion and growth rate of 4.1 driven by in-migration leads to many new arrivals being forced to live at increasing distances from the job opportunities of the center of the town or far away from health facilities. This significant increase of population also produces a pattern of travel demand with spatial and temporal characteristics different from those generated by the more formally organized settlement.

However, rapid population growth reduces the advantage of public transport and limits access, especially for those who occupy periphery beyond the range of existing systems of health facilities. In addition to these, unplanned expansion of the town also makes it difficult

to organize a cost-effective public transport service to reach all health facilities. The spatial structure of the built-up area also presents problems for the provision of good delivery of public-transport system. Most fundamentally, the underlying aspect of health facilities are caused by poorly developed road network, lack of investment in the current mass-transit system( i.e. the public bus, Bajaj) and poor planning and government failure to take an appropriate action for transport policy.

The existing of transport services save only the small population or administrative core, while the street are always narrow and congested in which their function are not segregated spatially. Due to difficulty of the movement, government is needed to interlink all routes from centers to periphery to provide public services because the short-distance services function in administrative core save only low-density residential areas where high-density residential are still facing this problem. Respondents suggested that to overcome this situation the government should co-ordinate the problem of transportation between formal and informal settlements to maximize the benefits and minimize the costs associated with each. Walking from long distances is the most basic form used by people and the distance to be covered can be too far to walk. This is a transportation challenges in the town when people seeking health care.

According to Ruth and William (2010), road traffic safety though helpful, excludes other categories of road users and does not address the root cause of accidents in cities. Data obtained from the 27 cities indicates that Gambella is among two regions hardest hit by traffic accidents. Therefore, lack of accessibility of road and poor traffic management measures are not yet fully developed.

## 4.6. The negative consequences of spatial distribution of public health center in Gambella Town

In this study, the researcher asked the respondents to state or identified the negative consequences in spatial distribution of health facilities in the town which are considered as the major factors for achieving inadequate health care service provision in Gambella town. Researcher asked the respondents for negative consequences and outcomes of spatial distribution of health care service. This survey question was posed by the researcher in order to get response for researcher question number three. Which was addressed as what are the

negative consequences of spatial distribution of social services of public health center in Gambella Town?

In Gambella town barrier of spatial distribution of social services cause regional variation in distribution of health income, education and transportation as well as access to health facilities. Moreover, inadequate distribution of social services cost barriers to healthcare, either through the patient's inability or regional shortage of personnel and facilities. The respondents linked the consequences of spatial health distribution to resources waste especially when individual seek for health service in the town. Barriers to accessing the healthcare services distribution has a lack of physical accessibility or geographical barriers such as, low quality or functionality of health care resources, and inability to afford health care services. Interview respondents said that lack of availability of health centers in proportional to population lead to community to overcrowding, poor health and inadequate public health services such as waste collection, lack of access to clean drinking water coupled with inadequate sanitation and where air quality is poor.

### 4.6.1. Improvement of health care accessibility

Key informant interviews were also conducted with three governmental personnel. Among these informants, two were from regional health bureau and one from transport office. These three governmental personnel claimed that there has improvement of access to health services in the town compare to the other years ago. The respondents indicated that Gambella town has undergone a series of improvement in the provision of health facilities an easy access of roads network across neighborhoods and also connect services institutions within kebeles. Those local roads have been build along with their associated facilities nodes (i.e. drainage, sewerage, etc).By taking population size into account and existing built up areas the categories of road differ in size and are organized hierarchically according to their functions.

Furthermore, the government strategies plan in spatial development it's improved the existing road network and their expansion in order to serve as links between residential and other areas in the town. According to survey result almost 78(31.2%) of respondents emphasized that Gambella town had has poor health record before the construction of referral hospital many people used to be referred to nearby hospital outside the region. However,

little improvement is there now. One of the biggest challenges is failure to equally distribute the health facilities in the entire places of the town. This is also supported by inter viewed result which blame the government for lack of willingness.

According to repondents, reponses, two head of kebeles reported little improvement was made by federal government for the construction of the main road. The provision of public service related to roads construction has promoting equity distribution and strength services balanced among all citizens in the town. But, there are gaps in provision of these services though there is a big distinction from previous years still there are areas which need concern from the health service providers. The interview result shown that Gambella health bureau reconsidered complains raised by public in some areas where accessibilities is needed much. One health post was built to provide limited health needs to 04 kebele residential areas.

### 4.6.2. Difficulties in accessing health services

In Gambella, the spatial distribution of social service providers with in community and across neighborhoods residential does not match to the demand of the people. Indeed, there are many challenges of services accessibility in the town which are barriers to health facilities (e.g. lack of community awareness, poor health and lack of resources).The compounding problems of increasing need from local communities was location and place matters in a service based system in extent to which areas containing services providers are near areas with higher or low population density. Thus, in most cases many residential areas outside of the town center contain high population within which the majorities were blocked but few service slots. According to(MWUD,2007) far as Gambella town is concerned, the spatial inequality was created by expansion of squatter settlements, inadequate access of roads and penetration of illegal settlements due to absence of professionals to manages the situation.

Respondents, claim that it is generally understood that this inequality and instability in the provision of social services identified here originated due to poor infrastructural service provisions like access road, drainage, sewerage, street light and poor social service provision like waste disposal.

Furthermore, lack of fair distribution, absence of good governance and miss use of public services by political leaders are the factors which increase the spatial inequality in the distribution of social services. Fundamentally, provision of public services was formed by

government to ensure fair distribution of resources in which everyone has right to get access of services. The municipality prepares the plot of land for relocation of presence illegal expansion area to accommodate residential and urban development. In addition to being concerned with the important of spatial distribution of social services ones should be mindful whether services are available regardless where they are located. Basically, the national policies strategies plan allow access of education for all people that brought up high quality skill man power who contributes for social development.

This table below shows the result of respondents for the factors preventing equally in spatial distribution of public health facilities. According to the result, 35.8% attribute the challenges to the lack of fair distribution, 35.1% said corruption by those in power has negative impact on provision of basic services like health care and finally 29.1% responded that of qualify man power in the sector is a challenge.

**Table 4.4. The factors that lead to spatial distribution of health facilities**

| **Difficulties of access to health facilities** | **Frequency** | **Percent** |
|---|---|---|
| Government lack fairness in health facilities allocation | 96 | 35.8 |
| There is no enough budget to fund health services provision | 94 | 35.1 |
| Lack of qualify manpower in the sector | 78 | 29.1 |
| Total | 268 | 100.0 |

**Source: field survey,2018**

## 4.7. Need for Fair Allocation Planning

According to the spatial development plan of Gambella regional state which proposed the attainment of evenly distributed of social services. Thus, plots of land for various types of services (such as: education, health, religious, cultural and others) are proposed considering different criteria such as: accessibility, proximity, service catchment area, fair distribution,

etc. In this respect, allocation of plots for social services is made as follows, but much more attention was not given to public health facilities.

The responses, from key informant interview, 68 patients claim that the existing of the three health institution could not meet the growing demands of the citizens and there is a great need for additional health facilities. For the distribution of public health services based on population density, nature of topography, distance or geographical location of the people the government doesn't put much concentration to built health facilities.

Therefore, the institution which gives more residential services of the town is the referral hospital which is very far away from the center of the town.It is generally believed that once the government will start the proposed reserved size to operate more health facilities there will be no more problem in Gambella town

## 4.8. Types of Public Health Facilities

This study explored the type of health facilities in Gambella town. Respondents were asked to mention or categorized the number of health facilities which are providing service in the area. This is done by the researcher in line to get respond for question number five which was addressed as what types of public health facilities are in Gambella Town?

According to survey results respondents explained that in Gambella town there are three health facilities one general hospital, one health center and one health post which are run by government. And there are twenty five clinics which were run by private sectors. However, according to the respondents though these health institutions exist in the town they provide very little service to population. Gambella referral hospital is overcrowded and the service it provides is not adequate to cope up with the presence level of population.

There are different factors which have been associated with unequal distribution of health infrastructures such as hospital, health centers and clinic which were provided by the government. The distribution of public health care was not equal due to the lack of knowledge of how much population should be provided with health facilities as in line with national standard. The interview result also emphasized that Poor planning system, lack of fairness, biases during distribution and shortage of resources are some of the bottlenecks in the town. Most of these are key problems in health system in the country in general and

Gambella town in particular. These are associated with many problems which may includes; lack of equipments or tools and shortage of properly trained medical personnel are the most critical challenges. In this regard, inequalities are also related to resource problem, perhaps due to the hot and humid climatic conditions. There is reluctance on the part of many qualified personnel to work in Gambella town; and this serious problem was also featured prominently during kebele – head interviews. Other problems, including shortage of water and lack of facilities, are seriously hampering efforts to provide adequate health services to the public.

According to Stevenson (2004) the inequalities access to social infrastructures was caused by inefficiency distribution and allocation of facilities between areas as a result of social barriers like ethnicity, religion or status which may directly prevents some groups from having access to public facilities. This is supported by interview results, they said that some government official push some basic facilities to be allocated to their social group or to their area of preferences. This has created gaps in fair distribution of health resources.

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5. Introduction

In this Chapter, summary of the findings, conclusion and recommendations are presented. The main objective of this chapter is to summarize the major findings of the study as discussed and analyzed in the chapter above. Relevance ideas concerning the spatial distribution of health care are forwarded.

## 5.1. Summary of the Major Findings

The major findings of the study are presented in accordance with the research objectives under the following sub-themes. Therefore, in this study researcher has summarized the keys findings of the study as follows.

From the above analysis, it is indicated that the major causes of inequality of spatial distribution of public health are related to lack of good governance, corruption and negligent to access to health care for all citizens. Another challenge encountered in Gambella town in health care provision services is related to lack of resources. In addition to these, respondents also emphasized that lack of accountability, unfair distribution of health centers and rent seeking practice were some of the bottle necks which hamper the distribution of basic health facilities in the town. According to respondents, they stated that the cause of inequality in health services is much blame on government and other stakeholders working in health service provision. This implies that the government has the upper hand to facilities the universal health coverage in the town.

Spatial distribution of health services in Gambella town is very challenging to citizens; according to the survey result, Gambella town has five kebeles and only two *kebeles* among them has closed access to services. There is only one referral hospital and one health center in the town. It could not provide the service needed by all districts in the region leave alone the residents of Gambella town. The spatial distribution of these health services in not inconformity to the regulation of national health objective. It is disproportional to the population and access to these services is under question. Respondents described lack of

access to health because of poor road network and resources like ambulances. Most people walk more than one km to get the service from the public hospital. Poor planning in term of basic service distribution in the town is very far from reach. This shows that the roles of leaders in mitigating those challenges are moderate.

Survey result indicates that, there are challenges and opportunities in health care services provision in Gambella town. As compared to the last five years there are dramatic changes in health services provision and accessibility. This is because there is handful number of private health providers and donors. However, there are number of challenges in health service delivery. Gradual increase of population and high influx of rural urban migration create limitations in provision of these basic services. Numbers of factors are responsible for these. Lack of clear distribution of public health facilities and lack of consensus among the decision makers are some of the weakness.

Finally, the responses from open ended questions and interview indicates that lack of transparency from top management, attitude towards rent seeking behavior practice, lack of monitoring and evaluation and haphazard in planning of health facilities are problematic. Hence, respondents suggested several ideas which should be adopted during planning and distribution of health facilities. Government or nongovernmental organization should use ratio during distribution and allocation of public goods. According to them this can help ensure fairness in term of population. Awareness creation needed to be promoted to all citizens of the town so that they can be part in decision making.

There are limited numbers of public health in Gambella town, a according to the survey result there are only one referral hospital and one health center in Gambella. More twenty five clinics which are distributed unequally in the town also exist. This referral hospital is not enough to provide service for all population of the region. Additional health centers need to be built so that they can cope with the emerging population challenges**.** Another very critical issue to be consider is the gradual increase of population, these bring with it a lot of urban health challenges, therefore, planning for health care in the entirety of the town is paramount to be considered.

## 5.2. Conclusion

In general, the results obtained from the interpretation and analysis of data reveals that the problem of spatial distribution of public health care is critically challenging. In spite of these shortfalls, there are appropriate rules and guidelines that guide the work to be carried out. Spatial distribution of public health facilities is very poor. Hence, there is need to rethink in term of fair allocation of resources. The result of this study indicated that health care coverage is not enough and the distribution doesn't include the whole area of the town.

Finally the major administrative challenges which were assessed related to lack of good governance, corruption and limitation of resources. Therefore, the researcher concluded that the extent of health facilities and the dramatic increase of the urban in migration cause a number of challenges for the community.

## 5.3. Recommendations

In light of the research findings which are based on the analyzed data of respondents as well as the conclusion that has been illustrated before, the researcher would like to underline and suggest the following possible recommendations in order to mitigate the challenges of spatial distribution of health. The recommendations are classified based on research sampling units in early section. The following important points should be kept in mind for the future improvements.

### 5.3.1. Recommendations to Government

Based on the major finding of the study, weak accountability and transparency in spatial distribution of basic health facilities is lacking. Therefore, health bureau of Gambella town should pay attention for the demand of the local population. Fair allocation of public health centers and access to health facilities should be given based on population of the area. Leaders should work on corruption reduction in health sector. Finally, since there is high influx of rural urban migration local government should be ready to expand infrastructures services in all areas of the town.

### 5.3.2. Recommendation to Non-governmental organizations

One of the main functions of nongovernmental organizations is to help local population in areas where services provision is lacking. There are more International NGOs in Gambella region, the allocation of funds must be monitored and evaluated so that it should not come out of vacuum. Equity consideration needs to be taken into account so that all citizens can benefit from the donations. Moreover, transparency needs to be developed and planning for health care should be given a room, when that happened, it will result into access to health care for all.

### 5.3.3. Recommendations for further studies in the same subject Area

The finding of this research indicated that still there are challenges that could not be solved. Therefore, it needs further study in order to change the level of public health allocation and accessibility in Gambella town. The researcher identified major administrative challenges that contribute to the poor implementation of policy for public health care planning and distribution. Based on these observations, researcher recommended that, others researches need to be carried out on spatial distribution of public health centers and access to health facilities in Gambella town. These are the major recommendations that the researcher drawn from the above summary and conclusion part. It would be important for any reader to identify the major factors which contribute to the challenges of effective implementation of spatial distribution of public health premises in Gambella town.

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## Appendices I: QUESTIONNAIRE

## Questionnaires for Gambella Town Administration –Public Health Information Unit

### Dear Informant!

I am hereby to clarify the purpose of this interview, the primary objective of this interview is to fulfill the requirement for the MA research thesis on **"Spatial distribution of public health centers and their services area analysis in Gambella Town"** in the Department of "Urban and Regional Development Planning", Addis Ababa University. As such I am requesting your positive cooperation and contribution for this study in which any information that you provide will be kept in confidential manner. No respondent or the organization he/she represents will be identified by name in the report without his/her consent. Your input to the discussion in the following areas regarding the distribution of health facilities would be highly appreciated.

***Informant Profile***

**Name_____ Age____ Sex_____Woreda_____ Kebele_____**

**Educational Background_____**

1. How many health facilities do you think are there in Gambella Town?

_____

_____

_____

_____

_____

**2.** What are the types of public health facilities do you have in Gambella Town?

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_____

_____

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3. What are the locations of these public health facilities?

_____

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_____

4. Do you think these public health facilities are equally distributed in Gambella Town?

Yes □ No □

5. If no, what are the reasons for inequality in the distribution of public health facilities_____

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_____

_____

6. What are the criteria used for the distribution of public health facilities in Gambella Town?

_____

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_____

7. Would you like to make any other comments apart from what has been asked?

Yes □ No □

8. If yes, state them

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_____

9. How long do you travel from your home to public health facilities?

_____

_____

_____

_____

_____

10. Do you think these distances affect accessibility to health facilities in Gambella Town?

Yes □ No □

11. If your answer is Yes, give the reasons

_____

_____

_____

_____

_____

12. If your answer is no, give the reasons

_____

_____

_____

_____

13. Would you like to make any other comments apart from what has been asked?

Yes □ No □

14. If yes, statethem

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_____

**Thank you!!**

**Appendices II. Interview questions**

1. What is the cause of spatial in equality in the distribution of social service in Gambella town?

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2.How do you describe the inequality in term of distribution of public health in Gambella town?

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3. What are the consequences for unequal distribution of public health centers in Gambella town?

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*4.* What are the ways forward to overcome the challenges and enable better provision of health services?

5. What are the existing situations of absence of equal distribution of health facilities in Gambella town?

_____

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_____

6. Are public health facilities accessible in Gambella town?

Yes □ No □

7. What are the positive contributions of public health center distribution?

8. What are the negative consequences of public health centers distribution in Gambella town?

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