# Evaluation of Health Seeking Behaviour in Dar es Salaam, Tanzania

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March 2011

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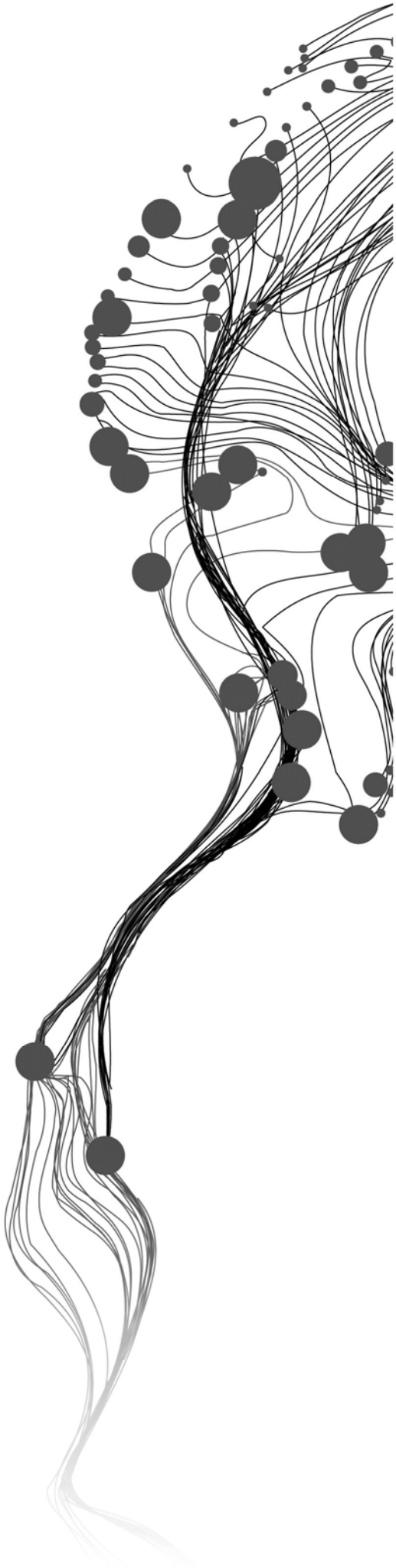

# Evaluation of Health seeking behaviour in Dar es Salaam, Tanzania

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Thesis submitted to the
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# ABSTRACT

The health seeking behaviour of people is an important aspect which can help improve planning of health services. In order to improve on health service provision, there is need to assess the behaviour of people toward selection of facility to utilise. Several methods have being used to study health seeking behaviour in different cities. This study tends to operationalise and conceptualise the health seeking behaviour of people in Dar es Salaam, Tanzania using Andersen (1995) health model. One of the main aims of this study is to identify the determinants of health seeking behaviour within different socioeconomic groups. Further more, the study tends to identify if there are differences in health seeking behaviour between the different socioeconomic groups.

Using primary data collected through household interview in eleven wards of the three municipalities of Dar es Salaam, the health facilities attended by households from these wards have been identified in combination with the socioeconomic background of the population. The difference in health seeking behaviour is analysed from the different wards. The methods used in the analysis are basically descriptive statistics, chi squire and use of desire line to show the spatial aspect of health seeking behaviour.

The analysis shows that the socioeconomic groups in Dar es Salaam are divided into three, the well off socioeconomic class, the moderate and the vulnerable group. The influencing factors in health seeking behaviour of the well of socioeconomic class include daily expenditure, mother's education and family health condition. The moderate socioeconomic group is found with highest education level in a household and availability of drugs as influencing factors of type of facility to use. The vulnerable socioeconomic group is influenced by income when considering the type of facility to use.
The study showed that there is difference in health seeking behaviour between the ages and gender. The age below four and ages between eighteen and forty four use health facilities more than all other age categories. Also the female gender within reproductive age of eighteen to forty four utilise health facility more than any other age group

The spatial aspect of health seeking shows that three modes of transport are dominantly used to visit health facility. They include walking, public bus and private vehicle. Visit of health facilities by means of walking are done by all the socioeconomic groups, but the vulnerable socioeconomic group make use of this the most. Public bus is used by all the socioeconomic groups while only the well off socioeconomic groups make use of private vehicle to health facility. The minimum distance covered to visit health facility is three hundred metres and the maximum distance is eleven kilometres. In general, the findings of this study indicates the difference in health seeking behaviour between the socio economic groups and identified the factors which influence the use of health facility by the socioeconomic groups.

Keywords: Health seeking behaviour, Socioeconomic class, Health facility

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# ACRONYMS

HSB……Health seeking behaviour
HBS……Household budget survey
MSEC……..Moderate socioeconomic class
NBS……National bureau of statistic
PASW……..Predictive analytic software
UDA……...Usafiri Dar es salaam (Public transport in Dar es Salaam)
VSEC……..Vulnerable socioeconomic class
WSEC……Well off socioeconomic class

# 1. INTRODUCTION

*The study is mainly focused on the health seeking behaviour of people and the factors which influences individuals in selection of which health facility to utilize, based on their socioeconomic status. The study is basically on the primary health care and also centred on mild sickness which is basically treated in the health facilities. The types of the facilities include both public and private primary health facilities in the city of Dar es Salaam. The research aims to investigate if any differences in health seeking exist between the socioeconomic classes and the basic consideration of the socio classes in selection of health facility.*

## 1.1. Background

The research intends to explore the health seeking behaviour of people in the city of Dar es Salaam Tanzania. Special focus is on the different socio-economic groups and how there characteristics differ in term of health seeking behaviour. Taking Dar es Salaam city as the case study area, the research is mainly based on existing primary health care both public and private. This study basically tries to conceptualise health seeking behaviour with the use of health behaviour model developed by Andersen(1995). This model is used in determining the behaviour of people when seeking for health care. The model consists of four components, which include the external environment, the population characteristics, the health behaviour and the outcome. (See section 2.5)

Health service is identified as one of the important social amenities needed in every settlement which each and every member of the community deserves equal access. In most cases, the availability of health facility does not necessarily mean equal utilization. This could be as a result of difference in health seeking behaviour. Health seeking behaviour is described as the perception and believes of individual toward selection or use of health facility in case of illness. Considering the perception of individual in utilization of medical facilities, there are certain factors which may vary between individual. These factors depend on the socio economic characteristics of person and could be termed as health seeking determinants.

The behaviour of people in health seeking is said to differ from one person to another, depending on certain situation which could include the availability of the facility, number of facilities within reach, type of the facility and also the socio economic factors which play an important role. In most cases there is difference in health seeking as a result of individual's basic considerations, some people may consider quality of service first while others may consider cost of service or cost of travel. These factors considered before selecting the facility to use are known as health seeking determinants.

Dar es Salaam, population is rapidly increasing as a result of birth rate and migration, but a good number of the population are categorised as poor (Lorenz & Mtasiwa, 2004). Poverty in city like Dar es Salaam could have a negative effect on the health of people and also on their health seeking behaviour.

## 1.2. Justification

One of the main aims of Health facilities provision is to effectively and efficiently serve the general public irrespective of their status and relevance in the community. In order to fulfil this aim, there is need to study the behaviour of users by identifying their priorities when selecting health facility utilise. And also the needs of the people in the services provided. Identifying the influencing factors of individuals toward health facility is relevant; this can help to improve their access and utilization of health services.

In order to identify the performance and quality of service delivery, the perception of users will best address the problem. " The identification of human behavioural factor in quality health care is an important issue to be included in health service delivery " (Hausmann-Muela et al., 2003, p. 3). The Author also signifies the importance of health behavioural study as it helps in meeting the demand and needs of health facility users.

Olenja, (2003), made emphasis on health seeking as a substantial aspect which appropriate management should consider due to its cruciality in provision of client oriented services. Considering the decision made by users when choosing which facility to utilize, the paper by Shaikh & Hatcher (2005), addresses the need for policy makers to understand the drivers of health seeking behaviour of people in multiple health care system as important area of health service improvement. The paper by Andersen (1995), described the use of health services by people as a function of their predisposition to use the services and factors which enable or impede the use and their need for care.

Several studies and research on health system in Dar es Salaam are focused on availability and access to health services while limited study is done in the aspect of health seeking behaviour of users. Amer (2007), encourages the study of health behaviour in the city of Dar es Salaam as it can serve as an input for planning of health care interventions.

This research work focuses on the behaviour of the different social classes in Dar es Salaam and their contributing factors in health seeking. The analysis will help in understanding the major factors that contributes to difference in health seeking and considering factors in selection of facility to utilize. The basic consideration of individuals based on where to seek for health care and where not will be evaluated with respect to the different socioeconomic classes.

## 1.3. Research Probem

In planning of health facilities, most efforts by the planning authorities is geared toward provision and location of the service required by the people or community, but little consideration is given to the perception and how the users react toward the service provided. Current research suggestions on health services are focused basically on the behaviour of users toward the facility, and on this vein the research work will be carried out.

There are several factors which are said to determine the use of health services, but status of individuals in the community is a major contributing factor to the health seeking behaviour of people in most communities. Ahmed et al,(2005) mentioned socioeconomic status as an area that need more research due to its criticality in determining the use of health facilities to majority in the most developing countries. As the lower economic groups are usually faced with a lot of challenges in accessing health facilities, this is an area which special attention is required in order to improve their access to quality health services (Amin et al., 2010).

Most research is well implemented using models for the experimental study in order to have a clear reflection of the real world problem. With no exception to the health seeking behaviour study, the application of model will be of great relevance. Shaw et al., (2008), mentioned the use of model to operationalise studies of health seeking behaviour as very limited. Due to the limited application and use of models to conceptualize health seeking behaviour, and also lack of comprehensive theory of how people make decisions about their health care and use of facilities.

This research tends to address the problem by taking up Andersen (1995) model to see if it can be translated into an operational research. The problems to be tackled in the research include;

- The determinants of health seeking behavior for the different social classes.
- The use of models to conceptualize health seeking studies.
- The changes in health seeking behaviour and link with previous studies in the city of Dar es Salaam, such as Amer (2007).
- Inclusion of spatial dimension in health seeking behavior.

## 1.4. Research Objectives

The objective of this study is to identify the main determinants of health seeking behaviour across the social classes in the city of Dar es Salaam.

## 1.5. Sub objectives

a. To develop and operationalise a health seeking behavior model.
b. To identify the factors that influences the behavior of people in health facility selection.
c. To assess variation in health seeking behaviour between the different socioeconomic groups.

## 1.6. Research Questions

| No. | Research Objectives | Research Questions |
|---|---|---|
| a | To develop and operationalise a health seeking behaviour model | • How can the model be operationalised? |
| b | To identify the factors that influences behaviour of people in health facility selecting. | • What are the contributing factors to health facility selection of the socioeconomic groups? |
| | | • How can the influencing factors be identified? |
| c | To assess the variation of health seeking behaviour within the different socioeconomic groups. | • What is the difference in health seeking behaviour between the socioeconomic groups? |
| | | • How can the variation be identified? |

Table 1-1: Research objectives and questions

## 1.7. Research Design

| Sub - objective | Research question | Required data | Data source | Method |
|---|---|---|---|---|
| **a.** | How can the model be operationalised? | -Literature<br>-Household survey data. | -Household survey<br>-literature | -Use of model components to conceptualise health behaviour.<br>Statistical analysis |
| **b.** | What are the contributing factors to health facility selection of the socioeconomic groups? | Household survey data. | -Household survey.<br>-literature | Comparism between the outcomes of the different socioeconomic groups. |
| | How can the influencing factors be identified? | Household survey data. | Household survey. | Statistical analysis |
| **c.** | What is the difference in health seeking behaviour between the socioeconomic groups? | Socioeconomic data | House hold survey. | -Statistical analysis |
| | How can the variation be identified? | Household survey data. | Existing stud and literatures | -Descriptive statistics |

Table1-2: Research design

## 1.8. Research framework

The framework for this research will be used as a guide in conceptualizing health seeking behaviour. The main focus will be on the socioeconomic groups and their perception or believes toward health services. The analysis will be restricted to only primary health care, this include public and private health facilities. From the identified socioeconomic groups, the factors that contribute to their health seeking and also those factors that discouraged them from health service utilization. This health seeking determinates or determinant factors will be identified using the people characteristics components of Andersen (1995) model (see figure 2-1).

The factors identified will help to show the health seeking behaviour of the different socioeconomic classes. Based on Andersen (1995) model, determinants of health seeking are classified into predisposing, enabling and need factors. The predisposing factors are those factors that increase the probability of individuals to seek for health care while enabling factor are factors that give individuals access to health

services. The need factor are the factors that will make individual to seek for health service. More on this health seeking determinants are described in detail in section 2-7.

With health determinants factors as guide, the health seeking behaviour of the different socioeconomic classes can be identified. Also this factor wills help show the level of utilization of different health services by the different socioeconomic group. One of the addition to this study which is not included part of the model is the spatial dimension of health seeking behaviour. From the output of this study, health seeking behaviour will be compared with previous study by Amer (2007) in order to see if there has being changes over time.

The perception of people toward health services and the level of service provided by the different types of health service provider are also relevant for consideration. The location of facilities as well as other factors that influence the choice of users when seeking medical help will be evaluated with respect to different social status of individual. Consideration will be made on the individual behaviour toward health seeking choice in presence of multiple options and also with no option or with only one facility available within their reach. Finally this frame work will guide in the study in order to see if there has being any changes in health seeking behaviour in the city of Dar es Salaam.

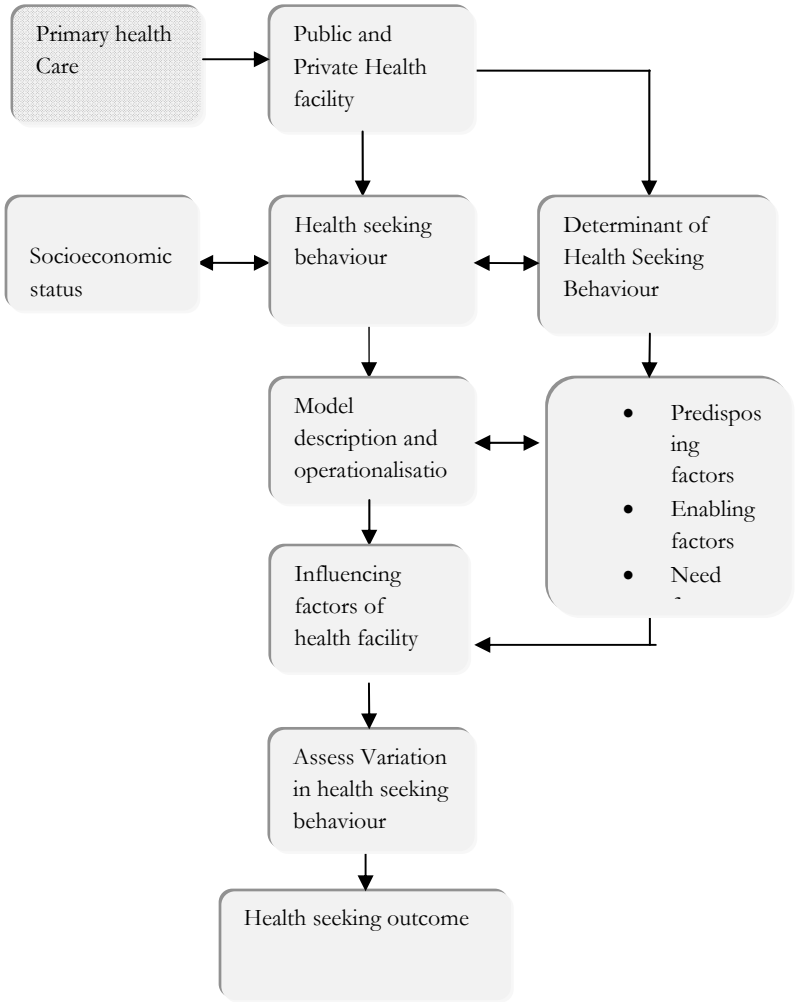


Figure 1-1: Conceptual framework

## 1.9. Thesis Organisation

**Chapter 1**

This chapter include background information which gives overall idea of the research study, the topic is further justified and research problems are put forward. Research objective is presented with sub objectives and their corresponding research questions. Furthermore, the conceptual framework gives a more detail of the structure of the study and process to be followed.

**Chapter 2**

The second chapter give a review of health seeking behaviour, this include the definition and the factors that contribute to health seeking behaviour of people. The chapter also discuses the determinants of health seeking behaviour and the effects of knowledge and believes in health seeking behaviour. The effect of socioeconomic status in health seeking is included and other related studies which were carried out in the same topic. Furthermore, the description of the different health seeking models was done and more insight was given on the models components which are to be used in this study.

**Chapter 3**

This part of the study describes the study area and gives its background. Location of the study area and its administrative boundary is discussed in this part of the study. The population and demographic characteristics of the area and also the socioeconomic characteristics of people in the Dar es Salaam is discussed in this part of the study. Health care services and distribution of health facility with respect to the types is further elaborated in this part of the study in order to give more details of the health system in Dar es Salaam.

**Chapter 4**

The major discussion of this chapter is the methods of data collection for the study. As primary and secondary data are collected for the study, the methods of the data acquisition and the strategies used for data sampling and also selection of study area was discussed in the chapter. The stages in data collection are classified into pre field work preparation, field work and post field work which include data entry and structuring.

**Chapter 5**

The chapter include the method used to operationalise the health seeking model and other different analysis done to answer the objectives and research questions. Basically the method of analysis is statistical analysis and spatial dimensions of health seeking are Shawn in maps using the desire lines or OD matrix. Other analysis result in this chapter is displayed in graphs and tables for easy understanding of the output.

**Chapter 6**

This chapter discusses the results of the analysis done in chapter five and the findings from the study. Also some limitations of the outcome of the study are critically discussed.

**Chapter 7**

This is the last chapter of the study; the chapter discusses the conclusion of the study and also gives recommendation with regard to some areas related to the study that require more research on.

# 2. OVERVIEW ON HEALTH SEEKING BEHAVIOUR

*This chapter gives an insight on health seeking behaviour, the definition and the influencing factors in utilization of health facility. The health seeking model is explained according to the different components and more elaboration on the part of the model to be used during the research work. The chapter also discuses the socioeconomic influence of health seeking and other studies which where done in the field of health seeking.*

## 2.1. Definition of Health Seeking Behavior

Health seeking behaviour is identified as any action taken by persons who perceive himself to have a health issue or to be sick for the reason of finding the right cure (Jain et al., 2006; Olenja, 2003). It is also considered as the activities undertaken by people in order to respond to the health problem experienced (ibid). In a natural way, the health seeking behaviour of people usually begins with making decision of what to do in order to overcome the illness experienced.

This decision making is controlled by the perception of individuals toward health facility to utilize. Believe and knowledge of people among other factors plays a vital role in this aspect. Jain et al., (2006) recognise health seeking behaviour of people particularly the vulnerable group as a combination of multiple factors.

In order to identify the health facility to utilize, there are individual considerations which are based on different factors that could influence the behaviour of the person or people toward selection of health facility. These factors are considered as health seeking determinants (Shaikh & Hatcher, 2005). In most cases, the determinants vary according to individuals with respect to their socioeconomic status (Ahmed, et al., 2005; Goudge et al., 2009).

## 2.2. Determinants of Health Seeking Behaviour

The determinants of health seeking behaviour are of different categories, the nature of influence varies according to factors which differ from person to person. These differences are dependent on the characteristics of people and health facilities.

In most cases, individuals with multiple facilities within reach act in a more different way than those with single facility within reach. The reason is because those with only a single facility have no other choice, therefore they have to utilize the available facility which tends to make their health seeking behaviour in a similar way. Jain et, al. (2006) recognise that subjective behaviour of person is influenced by a large number of factors which include knowledge and awareness of the health services available and also within reach or reasonable distance. The author also identifies "...the attitude of people among different populations, particularly in the rural communities as a complex outcome of many factors operating at individual, family and community level including their bio-social profile, past experience, availability of options in health service providers including indigenous practitioners and comprehension concerning quality of service and efficiency" (Jain, et al., 2006, p. 140).

A paper by Lawson (2004), stress out the importance of main determinants of health seeking and health care demand as important factor which will help in improving the government policies concerning health services. Stigma and motivational factors can also affect health-seeking behaviour of individuals, and also factors like treatment expectation satisfaction with health care services. Hausmann-Muela et al., (2003),

describe the making of decision for health care and some barriers like financial constraints and accessibility of health services to have a vital effect in selection of service and utilization.

The determinants of health seeking behaviour are basically categorized into three main groups, they include predisposing factors, enabling and needs factor (Ahmed et al., 2010; Andersen, 1995; Phillips, 1990). All the three main groups of health seeking determinants are generally considered as characteristic of population which will utilise the health facility.

### 2.2.1. Knowledge and Health Seeking Behaviour

Knowledge of individuals plays an important role in determining the behaviour of people toward the health services. People with biomedical knowledge utilize health services more frequent when compared to those with out biomedical knowledge. This is as a result of information on causes and symptoms of illness, this usually influence their health seeking behaviour. Hausmann-Muela et al., (2003), recognise other forms of knowledge which differ from biomedical concept as beliefs. In the paper written by Ahmed et al., (2003), knowledge of illness was revealed as important factor which can help improve the use of health services and also improve the health seeking behaviour of the vulnerable population.

### 2.2.2. Believes and Health Seeking Behaviour

Believes of people in health seeking is a major decider of health seeking behaviour. Anderson (1995) identify Health beliefs as attitudes, values and knowledge that people seem to possess about health and health services, this factor might affect the continues perceptions of need health services and utilization. The Author also explains the importance of Health beliefs as it provide one means of explaining how social structure might influence enabling resources, perceived need, and subsequent use of services (Ibid).

Believes and experience of individuals users towered health service delivery serves mainly as impedance to health seeking behaviour of the people even if they have good access to health facilities. The method of health seeking of individual's is dependent on their knowledge and cultural believes. This is mostly related to type of illness and also the severity of the illness. In a study by Roy et al.,(2004) it is disclosed that a large population of Mexican America, African American and native American are influenced by cultural believe in their health seeking behaviours. This group of people prefer the use of alternative type of treatment like herbs, plants, spiritual, and other natural products to substitute the modern health system.
In a general term, the health seeking behaviour of this category of individual is culturally influenced. In order to change believe of the people toward health services, educational awareness need to be done.

## 2.3. Socio Economic status and Health seeking behaviour

In health studies, socioeconomic status of individual plays an important role in identifying the health seeking behaviour of people. Most socioeconomic groups are faced with difficulties in utilising health services; this is as a result of limited access to the health facilities.

Access in this case could be referred to the five "A" components. As explained by Obrist et al.,(2007), this includes Availability, Affordability, Acceptability, Accessibility and Adequacy. The facility can be available but not affordable to certain socioeconomic group, or it can be or affordable but not accessible to certain groups. Also health facility accessible to people does not necessary means it is accepted or adequately sufficient for the user. Health seeking behaviour of the socioeconomic groups is usually faced with one or two of these elements of access. Several studies, (Adamson et al., 2003; Kristiansson et al., 2009), have shown that there is a strong relationship between socioeconomic status, health seeking and health status of vulnerable group.

A study in South Africa identified the barriers to health seeking as affordability of cost, weak availability and poor acceptability (Goudge, et al., 2009). In most developing countries with high percentage of low income group, large amount of people do not seek health care or do so when they can afford the cost of service (ibid). This method of health seeking can be differentiated with that of high income or better off group in a community.

Comparing the health seeking pattern of lower socioeconomic class and that of the higher socioeconomic class, it can be said that the lower socioeconomic group or the poor category have a complex health seeking behaviours. This is as a result of method called heeler shopping. Heeler shopping is a method which the lower social group use for health seeking, this method involves consultation of different service providers according to the severity of the illness (Goudge, et al., 2009). Socioeconomic status of individuals from disadvantaged population is mostly said to influence their health seeking behaviour (Ahmed, et al., 2010).

## 2.4. Health Seeking Behaviour Models

Various models have being developed in order to study the behaviour of people toward health seeking, but basically there are two dominant approaches in the study. They include pathway models and determinant models; each of the models listed can be used to explain the behaviour of people during health seeking depending on what aspect of health seeking behaviour is to be studied.

Pathway model is used to describe the sequential steps taken by individual when seeking for health (Mackian et al., 2004). The model explains different stages that a person undergoes starting from the symptom experience stage, to the end point when decision is made on selection of health care system to utilize and to the final stage of recovery and rehabilitation, at this stage; the person is back to his initial health condition. Suchman (1965), model is a typical example of pathway model; it also describes the series of steps in health seeking starting with recognition of symptoms and ending with the final recovery stage.

The model of Fabrega (1975), focused on the information an individual might be expected to process during illness. Mackian, et al, (2004), explains the approach as being based on economics and elementary decision theory; therefore it assumes the principle of cost-benefit is used in evaluation of the course of action. The model is criticized as it leaves aside other influencing factors like the ethnicity and believes that could play an important role in health seeking behaviour (Ibid).

Model developed by Igun (1979) is an example of pathway model with eleven stages of health seeking behaviour. The model starts from recognition of symptoms to when care is sought. The author gives insight in the process of health seeking behaviour, by identifying the different stages involved, but does not include the factors that influence the different movement in stages as most determinant models will do.

Determinant models mainly concentrate on factors which influence or serve as driving force to steps taken toward health seeking in the case of illness (Mackian, et al., 2004). Zola (1973), made emphasis on what induces an individual's decision to consult care. One of the short comings of the author's model is that it did not centre on how judgment to utilize care is made, but on why such judgment is made. The model of determinants factors influencing health seeking behaviour are important in understanding how people seek care and reason why some seek curative medical care while some do not.

### 2.4.1. Andersen Health Model

This model was originally developed in the 1960s, the main purpose is to help in understanding reason behind health seeking of different families (Andersen, 1995). Also to measure equity in access to health

care and to help in developing policies in order to promote equitable access (ibid). The model is described as one of the popularly known health determinant models.

The first Andersen model was developed in 1960s is compose composed of four different components this include the predisposing characteristics, enabling resources, need and use of health services. Each of the model parts have a certain categories of factors connected to it. The predisposing characteristics are composed of demographic factors, social structure of individuals and health beliefs of people. The enabling resources part contain the personal/ family resources and the community resources and need includes the perceive need and evaluated need. The final stage in this model is the use of health services. (See section 3.6.2 for more details). These factors are said to influence the use of health facilities.

After subsequent revision of the model, a new model was developed in the 1970s; this new model included the health care system. The inclusion of new part in the model is to give recognition to relevance of health policy and resource and also their organization in health care system as relevant determinants of people's use of health services (Andersen, 1995). Also included in the model is a clear outcome of services, known as consumer satisfaction. This part includes convenience, availability, financing, provider characteristics and quality.

The third modification of the model was done in the 1980s-90s. This new model includes the external environment, as a contributing factor to understand health service utilization. External environment is composed or the following factor; physical, political and economic components. The new model also includes personal health practice like diet, exercises and self care as relating to use of formal health care to influence health outcome (ibid).

The model was further modified, this final phase of the model shows the multiple influences relating to health service use and also relating to health status. The model includes a link between each step taken and also a feed back loops which demonstrates health outcome in return affect the predisposing and need as well as health behaviour (Andersen, 1995). Philips et al., (1998), described the model as the most widely used framework in health care study for several decades, and Mackian et al., (2004), refers to the model as comprehensive in structuring the possible factors influencing utilization and health behaviour.

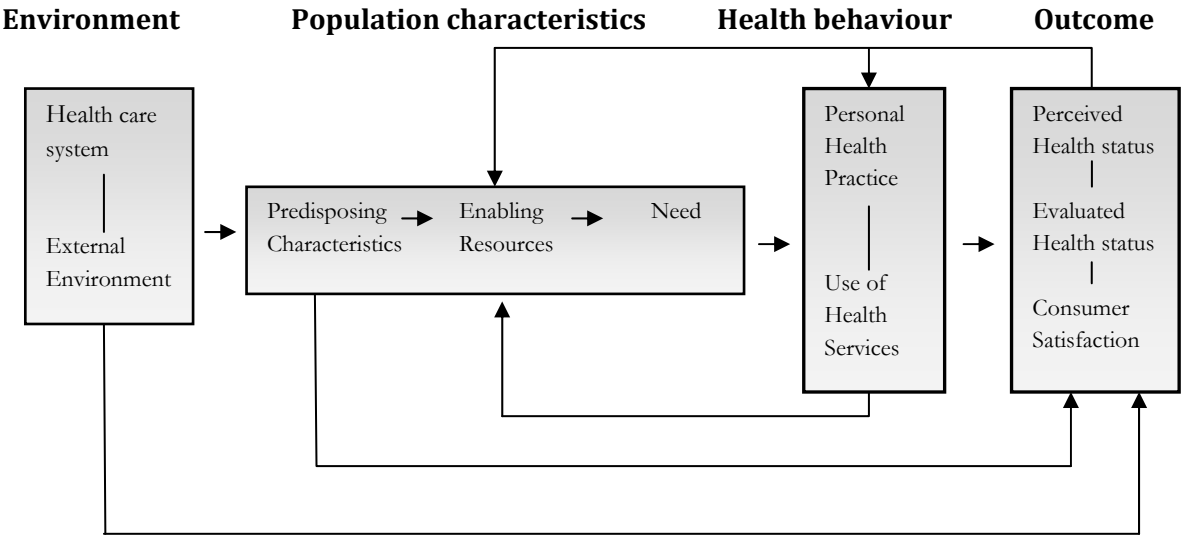


Figure 2-1: Health seeking model.

Source: (Andersen, 1995)

### 2.4.2. Components of Andersen Health Model

### 2.4.3. Environment components

The Environment component of the model by Andersen (1995) is basically the health system and external environment. The health system includes the type of services and method of service delivery. This includes the personnel distribution nature of service provided and organization are examples of health care system. The external environment are the factor that serve as the backbone of the services, this factors include the physical political and economical components. This component of the model is directly dependent on the outcome of component of the model. The link can be seeing in figure 2-1.

### 2.4.4. Population characteristics

Population characteristics are those factors that closely relate to individuals who demand for health care. This part of the model is the most important part as it deals with the people who make use of the health services provided. The main factor in this part of the model includes predisposing characteristic, enabling resources and the need factors.

These factors can help in identifying the behaviour of individual toward health services. The above mentioned component of the models requires consideration as the focus of the study is basically on the population and those factors that distinguished the behaviour of different groups of people toward health seeking. Figure 2-1 shows the link between the population characteristics and other components of the model. The population characteristics have a direct link to health behaviour and outcome of health. And in turn outcome of health and health behaviour have a feed back loop. This feed back loop shows that perceive health status, evaluated health and consumer satisfaction are dependent on the population characteristics.

### 2.4.5. Health behaviour

The health behaviour component of the model describes the attitude and practice of individual during the episode of illness; this includes personal health practice and use of health services. This category is dependent on the population characteristics like the level of education of individual and believes toward health treatment. As it can be seen in figure 2-1, the feed back loop shows that the health behaviour of individuals is dependent on the population characteristics.

### 2.4.6. Outcome

The outcome component of the model is basically the final stage of the model; it shows the final point of health seeking process. This part include the perceived health status of individual that seek care, the evaluated health status and consumer satisfaction of care seekers. The feedback loop from outcome to health behaviour and population characteristics indicate that outcome could in turn, affects subsequent predisposing factors, perceived need of service and health behaviour.

## 2.5. Model operationalization

The figure below is an illustration of Andersen (1995) model; it is a typical example of determinate model. For purpose of this study, there is need for more elaboration on the part of the model which is to be used in evaluation of health seeking behaviour in the city of Dar es Salaam. The most important part of the model that is to be used in the study is basically the population characteristic. The above mentioned parts of the model which will be used for the research is basically the characteristics of individuals. This includes predisposing characteristics, enabling resources and need factors.

### 2.5.1. Predisposing factors

Predisposing factors are those factors which describe the tendency of individuals to seek health care. Also it can be considered as individual's ability to seek care is a function of his or her predisposition to do so. In most cases the need for health service is dependent on the predisposition to do so. Predisposing factors like age an gender determine use of health facilities among other factors. The use of health facility by a nursing mother is considered to be more than that of woman with out a child. Also the older population are more liable to use health services than the younger age groups. Demographic characteristics, social structure, beliefs, attitude toward health service and knowledge are examples of predisposing characteristics (Bradley et al., 2002; Gelberg et al., 2000; Loue, 2002)

- Age
- Gender
- Ethnicity
- Household headship
- House head education
- House head occupation
- Mothers education
- House hold size

### 2.5.2. Enabling factors

Enabling factors are one of the most important elements that predict the health seeking behaviour of individuals, this factors are basically categorised into two parts. They include the community enabling factors and the personal enabling factor. Each of them plays an important role in determining the health seeking behaviour of individuals. Enabling factors are mainly divided into community and personal/family resources (Amin, et al., 2010). Availability of health facility, availability of drugs and personnel could be described as examples of community resources while health insurance, family income and asset are examples of personal/family resources. White et al,.(2006). Identified that there is a gap between wanting help and getting help, as the personal or family resources could over shadow the community resources or the availability of funds to access the health facility could be limited.

- Availability of facility
- Availability of personnel
- Availability of drugs
- Health insurance
- House hold income

### 2.5.3. Need factors

The need factors could be described as the health condition of individuals, the type of illness and the duration of illness which requires medical attention (Amin, et al., 2010).

- Type of illness
- Duration of illness
- Severity of illness

## 2.6. Other studies on Health seeking behaviour

Several studies have being carried out on health and health seeking behaviour in the past decades, but few have used the health determinant model to conceptualise health seeking behaviour. Some researchers like White et al.,(2006) focused on the disparities in behaviour of people when seeking for care while Schooley et al., (2009), tried to identify the causes of the differences in behaviour.

In some studies, authors based the studies on socioeconomic status of individuals and how it contributes to differences in health seeking behaviour (Kristiansson, et al., 2009). With increase in health research, more problems are being looked upon. The use of models to conceptualise health seeking behaviour is increasing. There are few popular authors who developed health seeking models, Andersen (1995) and Igun (1979) . Details of Andersen model can be found in section 2.4 and 2.5. Researchers like Willis et al.,(2010) used the above mentioned model to conceptualise health seeking behaviour, while Bradley et al., (2002) tried to expand the model in order to improve on other components of the model. In most studies that have to do with model, the population characteristic which includes predisposing, enabling and need are the most used.

Table 2-1: Reference to health seeking studies

| Author and year | Study context and Area | Use of Health Model | Predisposing | Enabling | Need | Spatial Dimension | Operationalisation/method |
|---|---|---|---|---|---|---|---|
| Amin, shah et al. (2010) | Socioeconomic factors differentiating maternal and child health-seeking behaviour. Bangladesh | √ | √ | √ | √ | - | -Bivariate analysis. -Multivariate analysis |
| Goudge, Gilson et al., (2009) | Affordability, availability and acceptability barriers to health care for chronically ill. South Africa | - | - | - | - | - | -Person chi-square -Quintiles |
| Willis, Glaser et al., (2010) | Applying the Andersen behavioural model to informal support among Britain's ethnic minorities. | √ | √ | √ | √ | - | -out come in term of informal support of ethnic minority |
| Lopez-Cevallos, Chi (2010) | Assessing the context of health care utilization in Ecuador | √ | √ | √ | √ | √ | -Bivariate analysis -logistic regression |
| Amer (2007) | Towards spatial justice in urban health services planning. Dar es Salaam | √ | - | - | - | √ | - Descriptive statistics -Desire lines |
| Gelberg, Andersen et al., (200) | The behavioural model for vulnerable population | √ | √ | √ | √ | - | -Person correlation -Paired t- test -Linear regression -Multiple linear regression |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Csete (1993) | Health seeking behaviour of Rwandan women. | - | - | - | - | - | -Descriptive statistics<br>-Cross tabulation<br>-Chi square<br>-Multiple regression |
| Bradley, McGraw et al., (2002) | Expanding the Andersen Model America | √ | - | √ | √ | - | -Inclusion of psychological factors in the model |
| Lawson (2004) | Determinants of health seeking behaviour in Uganda. | - | - | - | - | - | -Descriptive statistics<br>Cumulative percentage.<br>-Quartile |
| Igun, (1979) | Stages in health-seeking: A descriptive model | √ | - | - | - | - | -Out come of stages in health seeking |

Note: √ = Included in the literature
- = Not included in the literature

Looking at the table above, it can be said that there is limited use of models, and inclusion of spatial dimension to operationalise and conceptualise health seeking studies. Most of health seeking studies does not use the model but incorporate a variable which can fall in one of the component of the model. The variable could be age, ethnicity, or gender. This can be classified as examples of predisposing components of the model. Also the spatial aspect of health seeking is lacking in most of health seeking studies.

# 3. STUDY AREA DESCRIPTION

*This chapter gives an insight of the study area. The chapter describes the location of study area, the demographic characteristics and the structure of administrative boundaries of the study area. Also the socioeconomic characteristic of the study area the household composition are explained in brief. Employment level in the study area and the health system are given attention in describing the features of the study are. Finally description of the health care services and transport modes are described in the chapter.*

## 3.1. Background of Study Area

Dar es Salaam is the largest city in Tanzania, The city was found in early 1860s by Arab traders who named the city Dar es Salaam meaning "Harbour of peace". Due to the strategic location of the city, it attracts more commercial activities which lead to increase in size and population. Dar es Salaam was declared as town in 1920 and was designated as municipality in 1949 during the British colonial period. After the independence of Tanzania in 1961, Dar es Salaam was declared a city and later became the capital of United Republic of Tanzania. In the 1970s, the capital was shifted from Dar es Salaam to Dodoma. Even though the city is not the capital, it remains the largest and still serves as the most important commercial and administrative city in the country.

The city is well recognised with its mix cultural activities, business and heavy traffic during rush hours on the road. The city has a mono-centric kind of growth pattern, the urbanization moves along the coastline and the major road leading toward the outskirt of the city. Up till now, the city of Dar es salaam is an attractive city in Tanzania which the population still increase drastically every year. The city has a tropical coastal climate with an average annual temperature of $26^0$ C and average rainfall of over 1000 millimetres.

During the hot season which is usually around October, the temperature can rise to $35^0$ C. between the months of May to August, the temperature is considered cool with average temperature of $25^0$C. The city has two main rainy seasons, a short rainy season and the long rainy season. The short rainy season starts from October to December while the long rainy season starts from March to May. Humidity in the city of Dar es Salaam is 96% in the morning and 67% in the afternoon. The south westerly mason wind also influence the climate, the Months of April to October. And the North-westerly mason winds between November and March.

## 3.2. Location of Dar es Salaam

Dar es Salaam is located at the Eastern part of Tanzania mainland by the coast. It is between latitude 6.36 degrees and 7.0 degrees to the south of Equator and longitude 39.0 and 33.33 to the east of Greenwich (Dar-es-salaam City Council, 2004). The city is bounded by the Indian Ocean on the East and the Coast Area by the other side, and stretches about 100 km between the Mpiji River to the North and beyond the Mzinga River in the South, enclosing a land of 1,350 km2, and it occupies 0.19 % of the entire Tanzanian mainland.

The most developed part of the city remains around the coastal side. Due to the location of the city, it plays an extraordinary role in the economy of the country through the commercial activities carried out. The port which is located in Dar es Salaam serves not only Dar es Salaam, but other land locked East African countries.

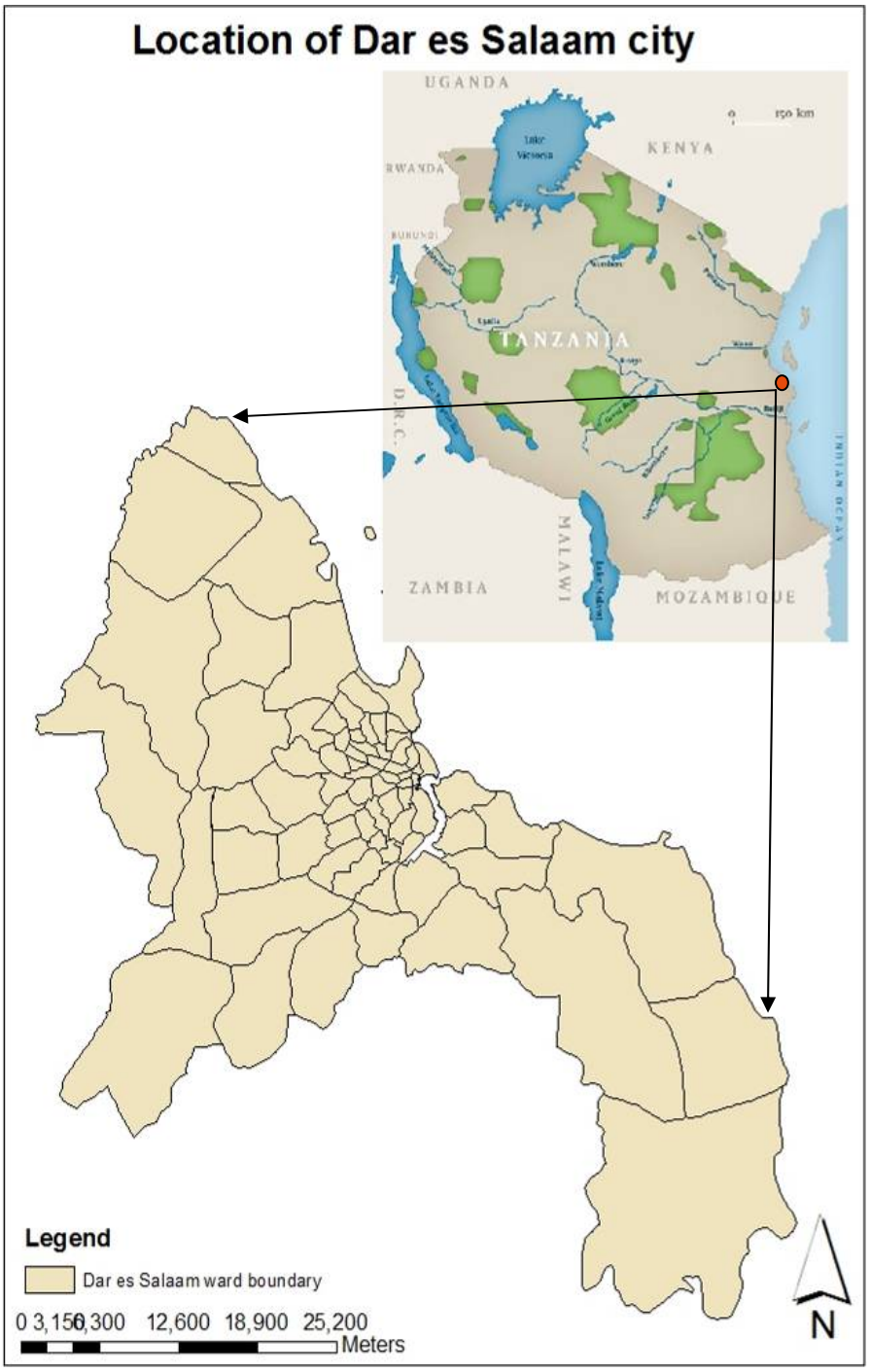


Figure 3-1: location of Study area

## 3.3. Administrative Boundry

The city of Dar es Salaam consists of three administrative municipalities: Kinondoni, Temeke and Ilala. The municipalities are divided into administrative wards which sum up to 73. Temeke municipality is the biggest is the biggest municipality in terms of land area, followed by Kinondoni and Ilala is the smallest. The land area of Dar es Salaam is 1,800 square kilometres, which include 1,393 square kilometres land area with eight offshore islands, this sum up to 0.19% of Tanzanian mainland area.

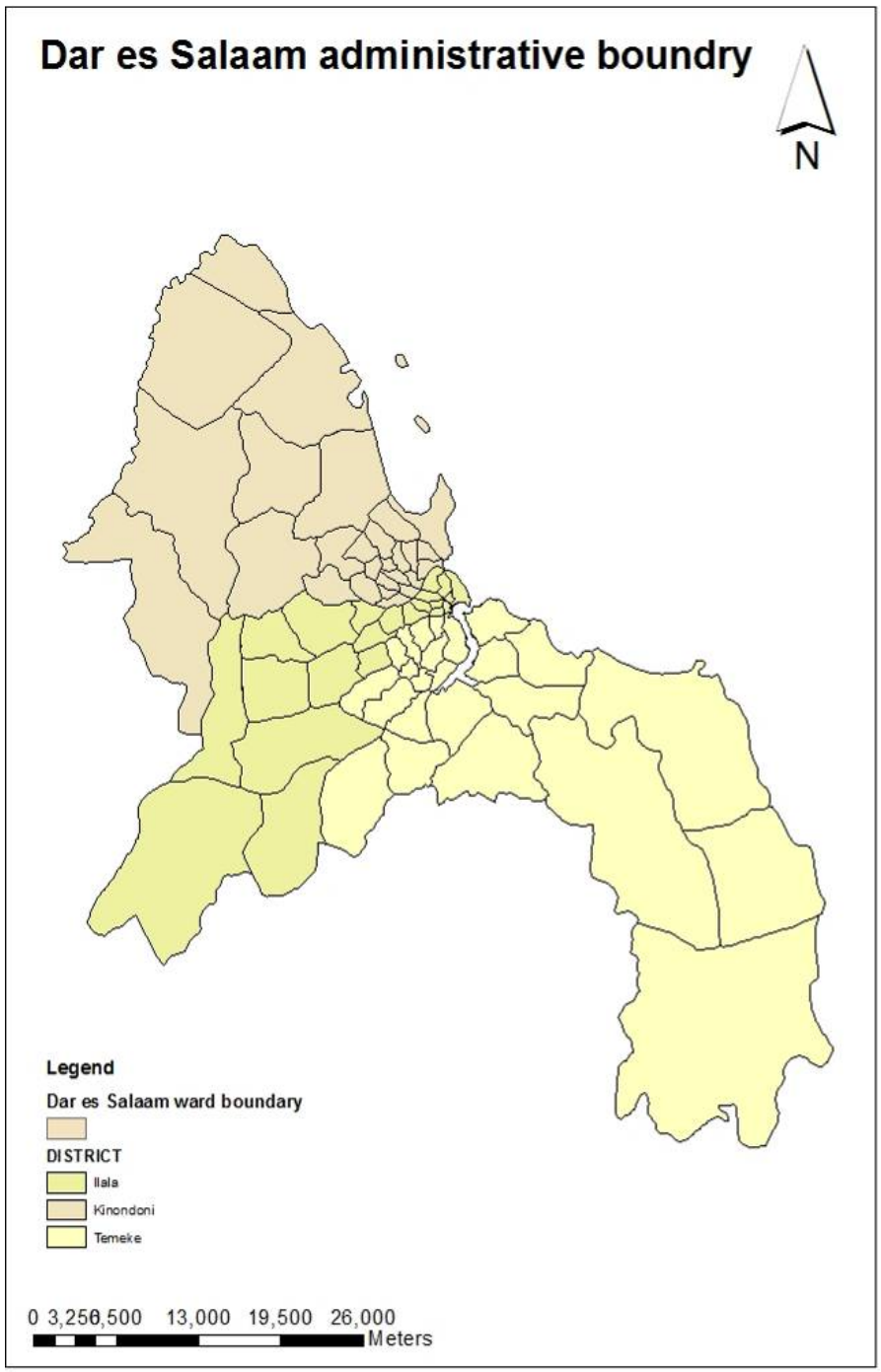


Figure 3-2: Dar es Salaam administrative boundary

Table 3-1: Dar es Salaam Administrative units

| **Municipality** | **Total Land Mass Area** (Square Kilometres) |
|---|---|
| Ilala | 210 |
| Temeke | 652 |
| Kinondoni | 531 |
| **Total** | 1,393 |

### 3.3.1. Administrative Units and municipality

The administrative activities of Dar es Salaam city have a clear split of responsibility. Dar es Salaam city council has limit in administrative activities as the three municipalities also have responsibilities. The city council in overall coordinate the municipalities incase of administrative activities within them. The three municipalities have a responsibility of provision of infrastructures and public services, like educational facilities, health facilities, waste disposal, transportation and community development. The municipalities are divided into divisions, and the divisions are separated into wards. The wards are made up of villages in the rural areas and streets in the urban areas. Sometimes the villages are split down into hamlets and hamlets are the least of the administrative units.

## 3.4. Demographic Characteristics

### 3.4.1. Population and Population Density

Dar es Salaam is known as one of the fastest growing cities in the Sub Saharan Africa. The city displays a large population growth. In 1867, the population is about 3,500 and rises to 128,742 in 1957. The population further grew to 272,821 in the year 1967, by 1978 the population is 843, 000. Later in 1988 census, the city population is recognised to 1.36 million persons. This population increased to 2.49 million people in 2002 census, and an estimate of 3.07 million people by the year 2007: with an average annual 19 year growth rate of 43% per annum (Nyamtema et al., 2008). The rapid increase in population is said to be due to rise in of birth rates, migration and transient population.

The population of Kinondoni is recognised as the most populated municipality among others. The municipality has a population of 1,083,913 inhabitants in 2002; this is about 44% of the total population of the city. Kinondoni municipality also has the highest population growth rate of 5.6% per annum; this is between the years 1978-1988. Temeke municipality's growth rate is following Kinondoni with average growth rate of 4.5% per annum and Ilala municipality's growth rate is 3.8% per annum. Based on 2002 population and housing census, the average population density in Dar es Salaam was 15 person/ha in each municipality. Kinondoni has a population density of 21 persons/ha, while Ilala is 18 persons/ha and Temeke is recorded to have 10 persons/ha. Most of population growth is mainly within areas of 5-15 km radius from the city centre in Dar es Salaam.

### 3.4.2. Age Distribution

Based on 2002 population and housing census statistics, most of the population (65%) in the city of Dar es Salaam are between the age of fifteen and sixty-four years. It can be seen that the majority of the city is within working age. The rest of population below age of fifteen years are 33% and elderly people above age of sixty five are just 2%. This shows that the life expectancy in the city is very low.

### 3.4.3. Population Distribution by Gender

The population of Dares Salaam is mixed with both genders, but the male group is said to be more than that of the females. Out of the general population of 2,487,288 people, the male gender is slightly higher, although the difference is not much. The table below gives a summary of the population according to gender.

Table 3-2: Population distribution by gender

| Total population | Number of Male | Number of Female | Percentage | |
|---|---|---|---|---|
| | | | Male | Female |
| 2,487,288 | 1,254,853 | 1,232,435 | 50.45 | 49.55 |

Source: (Dar-es-salaam City Council, 2004)

### 3.4.4. Household Composition

The average size of a household in Dar es Salaam is said to decline in majority of the areas. Average size in 1991/92 is 5.7 and as of 2007, it is reported to be 4.8 members. The dependency ratio has rise in other cities and the rural areas but there is hardly an increase in Dar es Salaam, instead there is a decrease. The proportion of female headed families between 2000/01 and 2007 has risen. This rise constitute nearly one quarter of all households. In terms of marital status of headship, there is a great difference as the most of the male house heads are married. And women who head families are mostly widowed or divorced(United-Republic-of-Tanzania, 2007).

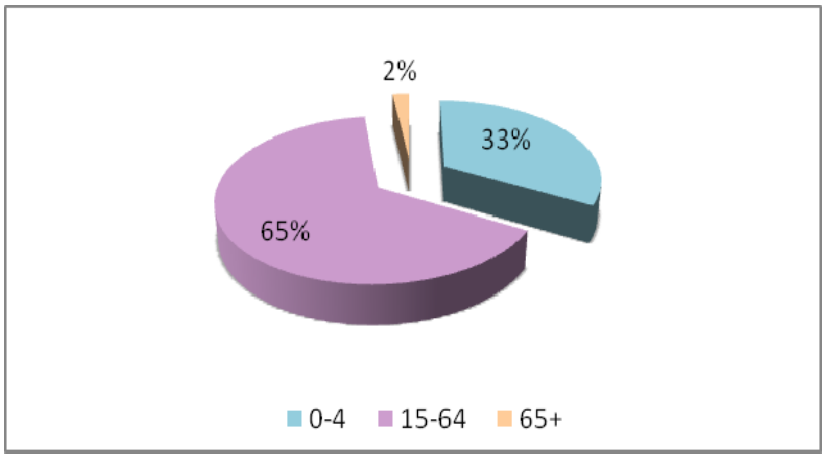


Figure 3-3: Age distribution of the city population

Source : (Dar-es-salaam City Council, 2004)

## 3.5. Socio-Economic Characteristics

According to the report of National Bureau of statistics (2007), the average household income per capital is around 39,362 TSH monthly in 2007. The level of income in Dar es Salaam is high at 80,144 TSH if compared to other rural areas. The report National Bureau of statistics (2007) also describes the per capital income to have risen ahead of consumer prices in most areas of the country including Dar es Salaam. The average per capital income for 2007 is 14% above that of 2000/01 average. As at 2000/01 survey, there is a big gap between income level in the city, the educated group earn allot more than the least and uneducated groups.

Table 3-3: Socioeconomic characteristics

| Characteristics | Kinondoni (%) | Ilala (%) | Temeke (%) | Total (%) |
|---|---|---|---|---|
| Buildings with Cement/Bricks | 88 | 90 | 86 | 88 |
| Building with Corrugated iron sheets in roofing. | 96 | 88 | 90 | 92 |
| Electricity connection as Main Source of Energy | 47 | 49 | 40 | 45 |
| Piped, protected well as Source of Drinking Water | 92 | 81 | 89 | 88 |
| Pit latrine as Main Type of Toilet Facility (%) | 83 | 79 | 88 | 82 |
| Percent with No Toilet Facility | 2 | 1 | 1 | 1 |

Source : (United-Republic-of-Tanzania, 2002)

### 3.5.1. Household Economy

In Dar es Salaam, a lot of the population have a low standard of living. According to United Republic of Tanzania (2007), there are certain poverty related problems which are being faced by the poor. These include food and basic necessities which most people are deprived of. The table below gives a detail of poverty rate between three different years.

Table 3-4: Poverty level

| Poverty | 1991/92 | 2000/2001 | 2007 |
|---|---|---|---|
| Food Poverty | 13.6 | 7.5 | 7.4 |
| Basic Needs Poverty | 28.1 | 17.6 | 16.4 |

Source: (United-Republic-of-Tanzania, 2007)

### 3.5.2. Employment

The employment level of Dar es Salaam is estimated that 95% of the city residents are working in the informal sectors, while the rest of the 5% work in the formal sectors. These formal sectors include the Government and Public Institutions. The unemployment rate in city of Dar es Salaam was 46.5% reported in the 2002 statistics. This unemployment rate is double the rate in other cities in Tanzania which is 25% and that of the rural areas reported to be 18%.

## 3.6. Health System

In Dar es Salaam, multiple health system exists. This system encourages different health seeking behaviour. The different health service providers include the public facilities which are generally provided by the Government, the private facilities and also the voluntary or faith type of facilities. In Dar es Salaam, the general population has multiple visions of etiological notions. This notion makes them believe in virus contagion, witchcraft, and predestination (Dar-es-Salaam-City-Region, 2003). Based on the different concept of health, they make health care choices. The behaviour of the people toward health facility selection is dependent on the type of severity of the illness.

### 3.6.1. Health Care Service

Between the year 1960 to 1990, Tanzania improved on the publicly founded services and introduced health care service was so as to improve equality of access to health care. Coverage of the health services increased rapidly after the Arusha declaration in 1967. This is due to government playing a primary role in the health sectors (Benson, 2001). Subsequently a large distribution of health care systems was accomplished with a population of about 90% living within 10km to a health facility. As the government lack adequate financial resources to maintain the health Care system in 1990s, the system was restructured toward profit making organisation to take part in the service delivery.

A complex strategy came into the system when government involvement in health service provision was reduced, thereby promoting the private sectors. Since then, competitive service evolved and access to services was increased through subsidising private providers and also by motivating the rich to utilize private facilities in order to focus Government facility services to the poor(UNCHS Habitat, 2001). Already the public facilities mend to serve the poor are faced with financial constrain while the private are serving the wealthy. Although the profit making facilities are widely spread across the city, but they rarely provide preventive and health promotion services, instead they assume to provide only curative services.

The mode of services which is said to serve the target the less wealthy in the community and which also provide more services like high level of facilities such as clinics dispensaries and hospitals. This service is

said not to improve along with the rapid growth of the city. The table below gives a summary of the facility types in Dar es Salam.

Table 3-5: Health care services according to type and level of service

| Level of facilities | Type of service | | | |
|---|---|---|---|---|
| | Public | Private | Voluntary | Parastatal |
| Dispensary | 36 | 226 | 57 | 55 |
| Clinic | 4 | 3 | 2 | 1 |
| Hospital | 4 | 9 | 2 | 3 |

Source: (Amer, 1998)

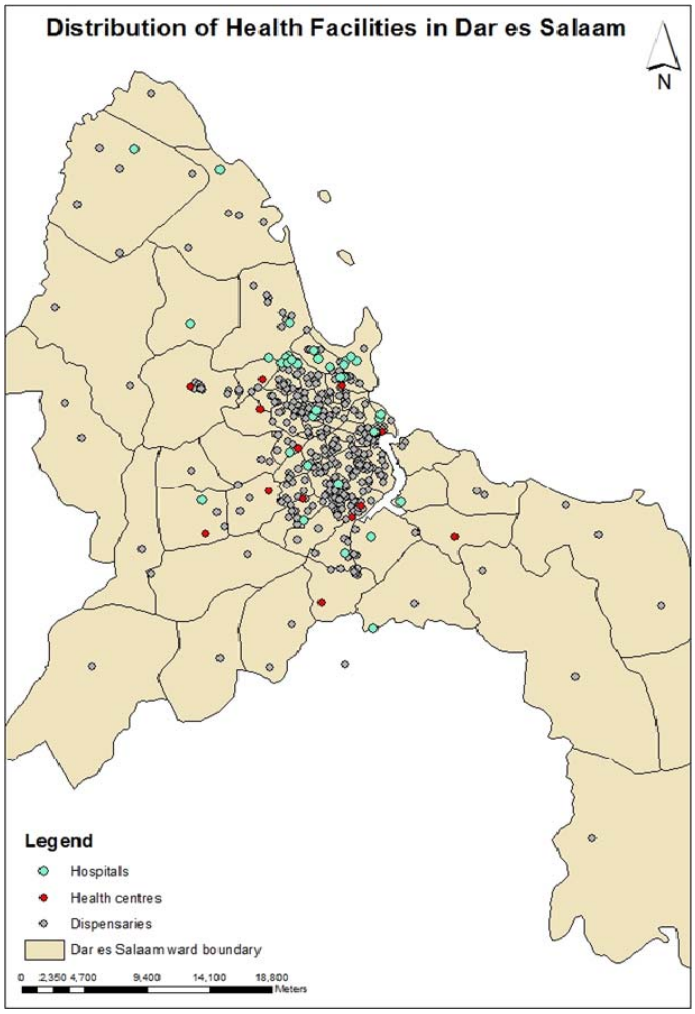


Figure 3-4: Distribution of health facilities.

### 3.6.2. Travel modes to Health Service

Decrease in public transport in Dar es Salaam, is said to result from the rapid increase of informal and unplanned settlements with poor access to facilities. In the early 80s, UDA a state run transport company lost its market value with increase competition from private sectors. Inexpensive vehicles begin to take over the market .UDA in 1995 had 12 buses and service only 12 route. 4500 taxis and 2000 Daladala serve people daily on 87 routes (Olevera et al., 2003).

As for the poor group of people, transport is not a priority, because 80% of their income goes to food and housing and have little to spend on health and transport. The poor group find transportation increasingly un affordable day by day as a result of shortage in transport modes .Amer et, al.(1996) discovered that above 90% of public dispensary health seekers use foot as transport means with average travel time of 19minutes. The study high ranking public Facilities like hospitals shows about 40% of the attendant with average travel time of 30 minutes. 52% of the travel made by public transport is also within same travel time. This can be deducted that majority of the population use foot as a travel mode to health facilities irrespective of the distance. In Dar es Salaam, distance serve as a factor of health behaviour.

# 4. DATA COLLECTION AND PREPARATION

*This chapter describes the methodology and approach in data collection. The purpose is to operationalise the health seeking behaviour model previously described in chapter two. The chapter describes the stages of data collection which include the pre field work, during field work and post field work. The pre field work stage encompasses study about the area of study and the types of data required which include both secondary and primary data. The primary data is basically house hold survey while the secondary data include house hold budget survey, health policy documents, and health facilities in Dar es Salaam. Checking data for consistency and Structuring of data was done during post field activities.*

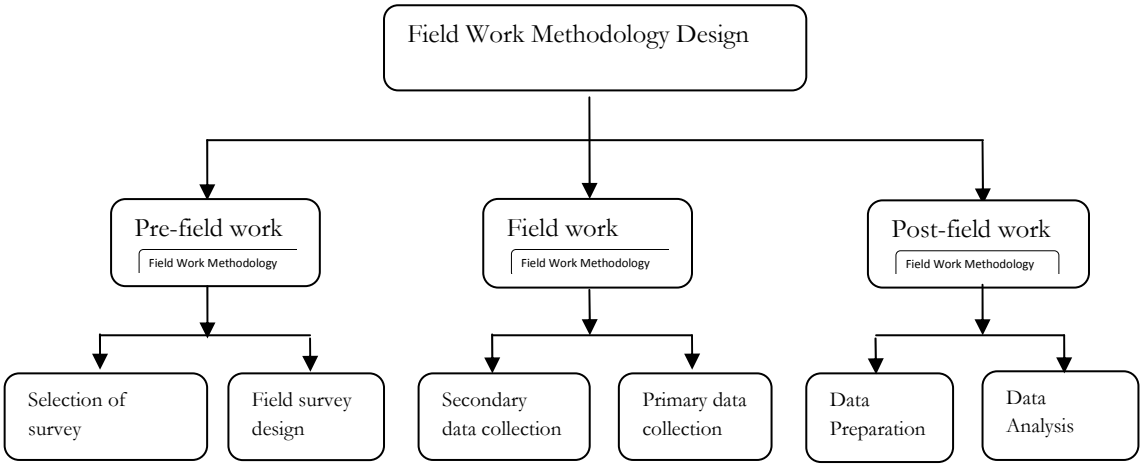


Figure 4-1: Methodology framework

## 4.1. Pre Field Work

This section gives details on the study area, questionnaire design and sampling method. In order to prepare for the field work properly, tools like map of the study area, the satellite image, GPS,PDA and household survey questionnaire are prepared.

### 4.1.1. Selection of study area

The Study areas are selected based on different factors; one of the reasons is in order to identify changes in health seeking behaviour in the study area. The study by Amer (2007) is will be used for Comparism. Amer in 2007 did a study on health access in Dar es Salaam, this study include the identification of health seeking behaviour in the city. Therefore the selected study areas are related to some of the study areas used by Amer (2007). Although the number of sampled areas are not the same with that of Amer (2007), this is due to limited time in this research.

Dar es Salaam is made of three Municipalities, Ilala, Kinondoni, and Temeke, the three municipalities sum up seventy-three administrative boundaries called wards. The unit of observation and primary data collection is a household. Amer, (2007) sampled thirty one residential hexagon in twenty two administrative boundaries out of seventy three in the City. Due to limited time for the fieldwork fifteen of the residential hexagons where selected but at the end, survey was successfully carried out in only eleven residential hexagons. This is as a result of unforeseen circumstance which is time factor. The other criteria for selection of study area include availability of multiple health facilities and areas with non-existence of

primary health care within a study area, areas with high and low population density and socioeconomic heterogeneity. Also among other criteria is type of settlement which is either formal or informal. The Existing data used by Amer (2007) and Google earth images where used to determine the physical accessibility of case study areas, land use, and socioeconomic heterogeneity in various study areas.

Financial resources serves as a constrain to some of the study areas that are very far from the city centre, or those that are far from other case study areas. In order to minimize cost and travel time, residential hexagons that meet the criteria and also close to other hexagons are choosing. The basic consideration also includes physical accessibilities of case study areas through public transport and any other means. Inclusion of different socio economic characteristics was the main aspect of selection of study areas as the study intended to evaluate user perceptions on primary health care and their behaviour toward selection of health facilities to utilise based on their different socioeconomic groups.

More than 70% of inhabitants in Dar es Salaam are living in unplanned settlements; the selection of study areas also considered study areas with high population, located on unplanned settlements, and planned settlements. 26.7 % of selected case study areas are from planned settlement and 73.3% from informal settlements. The study areas were select from thirteen wards out of twenty-two wards used by Amer, (2007).

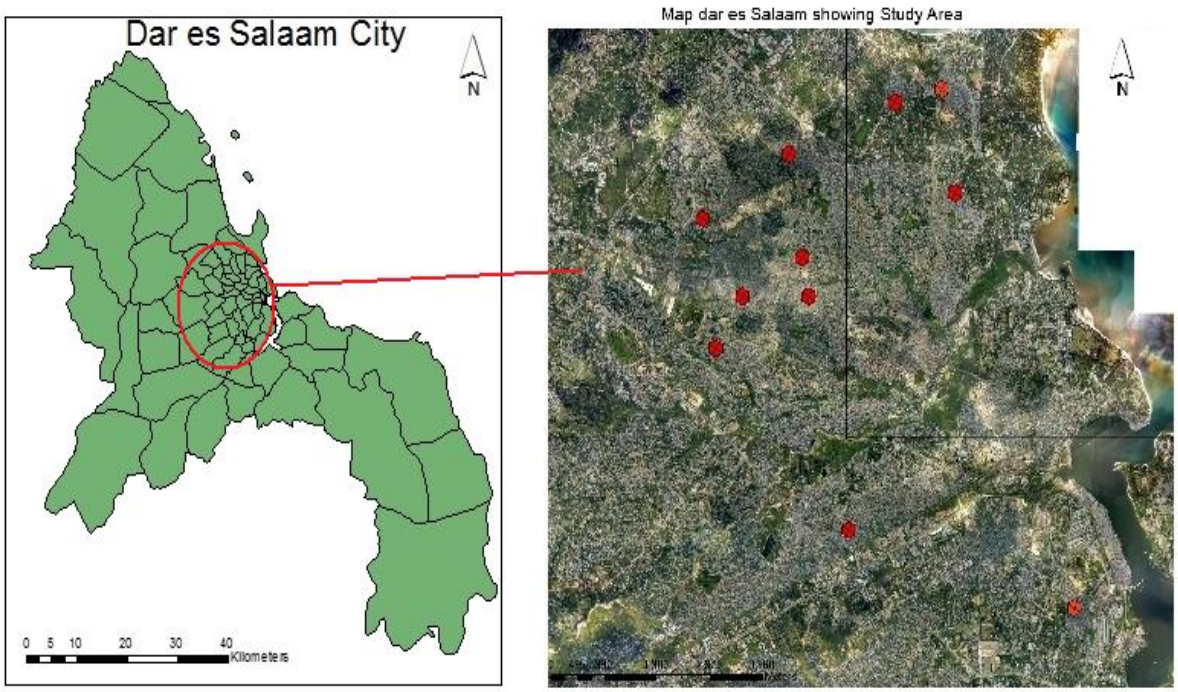


Figure 4-2: Study area Sampling Strategy

Source: Google map (2002)

Due to limited time and financial resources, purposive sampling method was used to select residential hexagons that will be used as study areas. Fifteen residential hexagons out of thirty one selected based on the criteria previously described in section 4.1.1. A sample size of 60 households was selected randomly within each hexagon of 250 meter radius. Random sampling provides equal chance to every member of a case study to be selected; this will facilitate inference of obtained results to the large population. Within 11 hexagons, 660 households were expected to be surveyed but due to the reasons described in section 4.2.5, the total number of respondents reduced to 594. This is about 2.5% of total households living in case study areas.

### 4.1.2. Questionnaire Design

The questionnaire design was partly done during the pre field work and finalised during the field work, the part which was carried out during field work was restructuring and combining of questionnaire with a fellow researcher who was working on Access to health services in the same study areas. The joint questionnaire helped in easing the time and financial cost during data collection.

The main data required to conceptualise the study are basically household socioeconomic characteristics, health seeking behaviour, availability of health facilities, the perception of individual's methods of treatment, and type of health facility attended by the different social classes in case of illness. All the components among others are included in the questionnaire.

## 4.2. During Field Work

This section basically describes the types of data collected which include primary and secondary data. The primary data was collected using a house hold survey questionnaire while the secondary data was collected by visiting the organisations and purchases of both digital and hard copies.

### 4.2.1. Training of research assistants and familiarisation

Through the contact person Dr. Alphonce Kyessi of Ardhi University, six enumerators and research assistant were recommended. The group is composed of graduates from Ardhi University who had knowledge and experience on administering household survey. In order to have common understanding of the questionnaire and the expected results, a general training was organised for in order to give them ideas of how to ask some sensitive questions using polite language so as to get required answer from respondents. Also training on the use of hand GPS and map interpretation was done to ensure all enumerators have enough knowledge on the use of GPS and map interpretation.

### 4.2.2. Primary Data Collection

In order to collect primary data during the field work, household survey was used to collect both household socio economic characteristics and the perception of individual toward health facilities in the city, looking on different dimensions of health service provision and the believes of individuals toward the available health facilities within reach. Primary data was to be collected from fifteen residential hexagons as previously described but only eleven hexagons were successfully visited for primary data collection. The method is mainly using structured household questionnaire.

Data collection started from 24th September to 6th October 2010 as summarised in table 4-1. Before the actual household survey kicks off, questionnaire was discussed in detail with fieldwork enumerators to have a common understanding of the questions and expected answers from each question. A pilot survey was executed on the first day at Sinza E Street in order to assess understanding of the questionnaire by the enumerators, and to have idea of answers from respondent and also the time which each questionnaire will take per house hold. Also, pilot survey helped to understand the gaps within the questionnaire and make necessary changes on the questionnaire before actual data collection. From the pilot survey, it was found out that some questions are not understood by respondents or are not well communicated by research assistants. In order to make it better, the questions are further refined and constructed in a better way (See appendix b). The average time for interviewing a household is 30 minutes during the first week and the time reduces by the second week to 20-18minutes per household.

A criterion for a respondent was set to either be the head of household, wife or husband or any adult person within the household who knows family issues including family daily expenditure. The age of the respondent is set between 18 above. With six enumerators, we managed to have 624 respondents within

12 days; also survey was done during the weekends. The table below shows visited residential hexagons identification code, ward name and date of survey.

Table 4-1: Visited study areas in Dar es Salaam

| Site ID | Ward Name | Street Name | Data collection date |
|---|---|---|---|
| 7126 | Sinza | Sinza E | 24/09/2010 |
| 6845 | Kijitonyama | Mpakani "A" | 25/09/2010 |
| 7600 | Tandale | Kwa tumbo | 27/09/2010 |
| 7878 | Manzese | Mwembeni | 28/09/2010 |
| 7142 | Kinondoni | Biafra | 29/09/2010 |
| 7883 | Ndugumbi | Kagera mikoroshini | 30/09/2010 |
| 8261 | Mabibo | Jitegemee | 01/10/2010 |
| 6479 | Mikocheni | Mikocheni A | 02/10/2010 |
| 6390 | Msasani | Bonde la Mpunga | 04/10/2010 |
| 10549 | Kurasini | Shimo la udongo | 05/10/2010 |
| 9794 | Buguruni | Madenge | 06/10/2010 |


Figure 4-3: House hold survey

### 4.2.3. Secondary Data Collection

Difficulties were encountered during secondary data collection as a result of the upcoming general election in the country. Also data from Municipal health officers was very difficult acquire due to bureaucratic processes and protocols. The responsible persons were mostly not available whenever we visited their offices. Also all Municipal health officers were involved in general election preparations. However we were able to get Household budget survey 2007, population data 2007, primary health service development programme 2007 – 2017, and Health strategic plan III 2009_ 2015, Health sector performance profile 2010 from Ministry of health and Social welfare, department of Policy and Planning and other sources during fieldwork. Census population data per ward and street and household budget survey data are gotten from National bureau of statistics in Dar es Salaam.

Table 4-2: List of Secondary data gotten during field work

| Type of Data | Description | Data format | Source of data |
|---|---|---|---|
| Demographic data | Household budget survey 2007 | Document (Hard copy) | National bureau of statistics (NBS) |
| | Population data 2007 | Excel file | National bureau of statistics (NBS) |
| | Household budget survey data 2007 | Soft copy (SPSS file) | National bureau of statistics (NBS) |
| | Census report 2002 | Hard copy part of the whole document | National bureau of statistics (NBS) |
| | Poverty and human development report | Document (Hard copy) | National bureau of statistics (NBS) |
| Primary health care | Primary health services development programme 2007- 2017 | Document (hard copy) | Ministry of Health and Social Welfare |
| | National Health Policy 2003 (English version) | Document ( soft copy pdf format) | Ministry of Health and Social Welfare |
| | Health sector strategic plan III 2009 – 2015 | Document (hard copy) | Ministry of Health and Social Welfare |
| | Health sector performance profile report 2010 | Document (hard copy) | Ministry of Health and Social Welfare |
| | Socio political dynamics of service delivery in Tanzania | Document (soft copy) | Ardhi University |
| | National primary health care supervision guideline 1999 | Document ( soft copy pdf format) | Ministry of Health and Social Welfare |
| | Minimum package of health and related management activities (MPHMA) 2003 | Document (soft copy pdf format) | Ministry of Health and Social Welfare |
| | Health facilities in Tanzania | Excel file | MEDA Geodata through Ifakara institute for medical research |
| Spatial data | Administrative boundaries; District boundaries and ward boundaries | GIS data vector format shape files | National land use commission (GIS unit) |
| | Ocean | GIS data vector format shape files | National land use commission (GIS unit) |

### 4.2.4. Field work challenges

The major challenges and difficulties experienced during fieldwork in Dar es Salaam include;

- Lack of physical boundaries of case study areas which poses a great challenge on ensuring the selected respondents are only within and not out of the study area.
- Due to absence of current high-resolution images, orientation and identification of study areas was difficult and took time. As there is a lot of spatial changes which makes identification of some locations difficult.
- Map interpretation skills and hand GPS used for orientation and identification of study areas by comparing coordinates on the map and acquired coordinates from hand GPS. Moreover, local knowledge used to identify unique features or landmark objects like open spaces and cemeteries for easy orientation.
- Constant delay in Primary data collection as a result of bureaucratic processes from the authorities that issue permission for each surveyed wards and street. (Ward offices and Mtaa leader's offices). In some cases the responsible person reports to office late, this makes the start and finish of the survey very late.
- Documents concerning Municipal primary health care implementation plan/ strategy and primary data collection from health officials was not successful due to the fact that responsible persons where involved on general election preparations. Furthermore, limited time and financial resources did not allow daily visit to respective Municipalities.
- Locating and mapping of all new facilities mentioned by respondents was not possible because of shortage of transport funds and time available for data collection.

Figure 4-4(a): Locating boundary of study area ;(b) Processing permission in ward head office

### 4.2.5. Data Quality check

After data collection of each day, a special session was created in order to cross check the data collected and verify the quality of data collected and to confirm that the response expected are gotten. In the early stage of the survey, there are a lot of mistakes and misinterpretation of questions by the research assistants. But as time goes on, there is a better understanding of the questions and also the answers expected from respondents.

In most cases, the coordinate's location of respondents is missing or not properly taken by research assistants. This crosschecking session help in identifying the questionnaires with wrongly filled coordinate. This coordinates are immediately gotten by tracing the location of respondents. During this process, some questionnaires were found with no location, and effort made to identify the respondent proved abortive. This is due to high density of building in the study area as it is informal settlement. In some cases, questionnaire where left with no coordinates thereby causing shortage of total number of samples.

During the field work activity, it is expected that the health facility attended by respondent will be located and the coordinate will be take. But due to unforeseen circumstances, most of the facility locations were not found. Also in some cases, the facility name is not known by a respondent; instead they use either the doctor's name or a name that is familiar to them. And this name given by respondent cannot be traced by the research assistant of researchers. Thereby leaving the facility unlocated or missing in the list as the coordinate cannot be identified. As a result of these unforeseen problems, instead of 660 respondents, the number slims down to 594. And also the facilities locations are just forty six.


Figure: 4-5: Data quality check (a)(b)

## 4.3. Post field work

The post field work activities include structuring of primary data collected during the field work into digital form. The data was coded and entered in the software SPSS, each of the questionnaires which represent a household has a serial number and the coordinate of the house both Northing and Easting were taken in order to get the spatial location of the surveyed houses. The digitised data is further statistically analysed in order to get the idea of result of the survey.

## 4.4. Data Analysis

### 4.4.1. Socio Economic Classification of Samples

In order to achieve one of the most important aspects of the study and also an objective in the study, the identification of socioeconomic strata is very important. The socio economic indicators are basically from household characteristic which were gotten from respondent during the survey. Characteristics of household which include education level of house head, type of waste disposal, source of water, toilet type, and electric supply. Also ownership of television, refrigerator and house hold daily expenditure are identified. The various socio economic indicators are brought together in order to group each sampled house hold into respective socio economic classes.

Instead of depending on single component of household like daily expenditure and income to identify socioeconomic class, the various components of household characteristics where used. The reason is to give the other variable equal attention in identification of the socioeconomic strata. Amer (2007) described the use of single variable in identification of socioeconomic strata as a direct method of over simplification of the method which could not necessary reflect the reality. The method used in socioeconomic classification in this research is the two step cluster analysis which is adopted from the work of Amer (2007).

# 5. ANALYSIS OF HEALTH SEEKING BEHAVIOUR

*This chapter describes the health seeking behaviour using different analyses, socioeconomic strata is identified within the study area base on the different household indicators. Further more the method of analysis used is the two step cluster analysis and the socioeconomic classes are grouped in to three. Based on the classification, the population of each socioeconomic group was identified from within the eleven wards. The influencing factor in health facility selection of the socioeconomic groups is analysed and finally the variation in health seeking and the spatial aspect of health seeking is analysed.*

## 5.1. Characteristics of Household and Socio Economic classes

### 5.1.1. Characteristics of Household

The study is based on 594 sampled household and there general characteristics, the sampled households are taken from the eleven residential hexagons earlier described in section 4.1.1. During the data collection, it is observed that most of the house heads which are predominantly men have gone out for their daily work. As such, the majority of respondent are women (76%), and aged from 18 above. From the survey, it is observed that 85% of house head are employed. A large number of the working men of about 65% are self employed and the non self employed complete the remaining eighty percentages. Based on the Household Budget Survey (2007), the percentage of employed men is categorised into different occupation, which include Government workers, private firm employees. Furthermore, the job is split into various types of work activities which include self employed with employees, self employed without employees and other types of self employment like farming, fishing and livestock which is said to employ more than two third of the country. This sum up to 79% in United Republic of Tanzania, (2007).

This result is closely related to that of survey data collected in the city of Dar es Salaam. 19% of house heads are permanently employed; this shows a big difference with the result of employed persons in Dar es Salaam which is 79%. Although the report of National Bureau of Statistics(2007) included the age of 15 and above while this study was specific on only house head and did not specify age limit. The unemployment rate from the survey is about 15% as compared to the report of HBS 2007 which described Dar es Salaam and other cities having a percentage of 3%.

From the study, the average number of household is about 5.4, while average number of people per room (overcrowding) is about 2.3 , this closely relate to the HBS (2007) report which is about 2.1. Getting the exact income of household is somehow difficult, as some respondent do not say the truth about how much they earn monthly. Therefore, daily expenditure was used to have idea of how much individual can spent per month. The categories are TSH 5000 below, TSH 5,000 – 10,000, TSH 10,000 -15,000, and TSH 15,000 and above par day. From the different daily expenditure, the average daily expenditure was per household was identified and from that, the average monthly income was calculated. From the result, the average monthly income almost twice that of the HBS survey result, this difference could be as a result of the study areas selected during the study. Most of the low income or areas with higher concentration of poor category of people are not selected.

The level of education from the study area is relatively reasonable as the percentage that attends primary school and those that attend secondary school are almost the same in population. Those that attend college or university are bellow primary and secondary school attendants. Comparing the result with that of HBS 2007, it is clear that primary school attendance is higher (62%) when compared to the survey

result. This could be due to the fact that the sample of this study is smaller than that of the HBS (2007). Also, the secondary attendance (19%) is could be considered close to the survey result. The result of university attendance (3%) has a large difference with the result of this study. This difference is not a surprise as most of the data collected for this study is from areas with more educated household.

The study showed that households with electricity connection are 76%; while the report of HBS revealed about 55% have electric connection. This difference can be considered as a result of increase in population and time difference of three years. This three year difference of data collection can give rise to more electricity connection within the city of Dare es Salaam as there is tendency of population increase. Household characteristics like construction material have some relationship in term of buildings with cement walls. The survey result and that of HBS have a little difference. The type of building made with mud bricks are 4% from the survey and 1% from the 2007 report of HBS. Also buildings made with mud and poles are recorded to have 1% from the survey while the HBS records 5%. Looking at the result of construction material, it can be noticed that the result of this survey represents the real situation when compared to the report of HBS 2007.

Majority of the population (75%) use the pit toilet while those that use the flush system are about 25%. this result could be compared to that of HBS 2007 which mentioned that pit toilet is 80% and flush toilet is 10%. From the result of toilet type, both HBS and this survey show that a large amount of people in Dar es Salaam are using pit toilet while little percentage of people make use of flush toilet. The source of water identified during the study was 13% of household have piped water, 19% use public taps and 65% buy from vendors. HBS report shows that 8% have private piped water, 4% use public taps, 8% buy from vendors and 4% use the well. The results of those who buy water from vendors have a large difference with that of HBS. Result of HBS report categorise water source into three categories and each category has different number of variables. The categories include pipe water, protected source and other source. The result of HBS has a category named others which is about 75% of water source in Dar es Salaam.

Household assets like television and refrigerator present a result which the difference are not much when compared. The result presented show some similarities in household characteristics with that of HBS 2007 while in some areas there seem to be difference which could be considered as a result of difference in time interval of data collection as some changes is anticipated or from the sample difference. With the survey result, it can be concluded that the date represent the population characteristics and few of the values have deference which can be said to be as a result of sample size or difference of time of data collection.

Table 5-1: Household characteristics

| Indicators | | Survey data | Household Budget Survey (2007) |
|---|---|---|---|
| Occupation of house head | Employed | 85 | 79 |
| | Unemployed | 15 | - |
| Household Population | Ave. per house | 5.4 | 4 |
| | Ave. per house | 2.4 | 2.1 |
| Highest education level | primary | 37 | 62 |
| | secondary | 36 | 19 |
| | College | 27 | 3.0 |
| Mothers education | Primary | 72 | 63 |
| | Secondary | 12 | 17 |
| | College | 17 | 2 |
| Expenditure | Average (monthly) | 274,456 | 155,000 |
| Electricity connection | Yes | 76 | 55 |
| Construction material | Cement/brick | 94 | 88 |
| | Mud brick | 4 | 1 |
| | Mud/poles | 1 | 5 |
| Toilet type | Flush toilet | 25 | 10 |
| | Pit toilet | 75 | 80 |
| Source of water | Piped water | 13 | 8 |
| | Public tapes | 19 | 4 |
| | From Vendors | 65 | 8 |
| | Open wells | 2 | 4 |
| | Others | - | 80 |
| Own refrigerator | Yes | 35 | 27 |
| Own television | Yes | 63 | 40 |

### 5.1.2. Socio Economic Strata

In order to identify socioeconomic strata from the study, certain numbers of socioeconomic indicators ware used. Random selection of the variable or single selection of a variable to show socioeconomic strata will not justify the classification. As such, fourteen socio economic indicators are selected. In order to identify relationship between the different indicators, Pearson chi-square was used. The socioeconomic indicators include daily expenditure, education level, ownership of television and refrigerator, toilet type, electricity connection, type of waste disposal, source of water, construction material, and ownership of car, bicycle, motorcycle or sewing machine and finally the status of house.

This statistical analysis helps in identify relationship between the different variables. At significance ($p < .001$), the association is recognised. The analysis is run on each of the variable against other variables. This process helps in identifying the relationships between the variables which can not be predicted. After going through the process several times, eight indicators are selected base on the significance level. The

indicators are household education level, daily expenditure, ownership of television and refrigerator, toilet types, electricity connection, source of water and source of waste disposal. At significance of ($p < .001$) the variables are selected. Therefore it can be assumed that the entire eight selected variable have a relationship between one another.

A two step cluster analysis was performed using statistical software known as PASW version 18 with the eight categorical variables. The software automatically creates the analysis with three clusters. This two step cluster analysis select variable with strong relationship and group them into the same category or class (See appendix c). Based on the output of the analysis, socioeconomic classes where identified to be three. From the three socioeconomic clusters, the classes are identified as well off socioeconomic class, moderate socioeconomic class and vulnerable socioeconomic class respectively.

From the two step cluster result, the first cluster proves to be a better off group with a household sample of 178 which is 30% from the sample. The cluster is better in term of education level. The number of college/university attendance higher than other clusters and also the members have the least number of primary school attendances. The cluster has a higher daily expenditure when compared with other cluster. About 20% of the cluster members have a daily spending of TSH 15,000 and above. The cluster also is recognised with higher spending of 10,000-15,000.

Finally in the expenditure aspect, the cluster records the least percentage of spending below TSH 5000 daily. This value has a great difference when compared to cluster two and three. When it comes to household asset like ownership of television and refrigerator, the cluster also has a positive difference in term of those who have television and refrigerator. Cluster one is also identified with more percentage of flush toilet users and has the least percentage of pit toilet users.

Considering the access to infrastructure, the cluster is considered with more households who have electricity, connected to sewer line or use septic tank and also private taps. Other indicators like no waste disposal, use of public tapes, buy water from vendors and use of open well are recorded very low when compared to the rest of the clusters. Based on this statistics, cluster one is considered as well off economic class (WSEC) among other clusters.

The second cluster can be clearly differentiated from cluster one and three; it has a household sample of 286 (48%). The clusters percentage of college/university attendance is not up to that of cluster one but better than cluster three. The percentage of primary and secondary school attendance is below that of cluster three. In this case, any cluster with higher percentage of primary education is considered a disadvantage to the group. the daily expenditure of this cluster this cluster is relatively lower than that of cluster one as household who spent THS 15,000 and above are not up to percentage of cluster one but better than that of cluster three. Also from this cluster, spending of less than TSH5000 is more than that of cluster one but less than the percentage of cluster three.

Daily expenditure of less than TSH5000 can be associated with the lower socioeconomic groups, so any group that scores higher has disadvantage in term of socioeconomic classification. Members of this cluster can be described with moderate percentage of household assets, television and refrigerator. The percentage of electrical connection in clusters two is higher than that of cluster one and three (100%), but score low in some infrastructure like private tape water, this could be the reason why higher percentage of households buy water from vendor. Public tap users in the cluster are in between cluster one and three.

Also use the open well as source of water in the cluster is slightly above cluster three and one. This cluster can be classified as in between cluster one and three, so it is categorised as moderate socioeconomic class (MSEC) as it cannot be compared with the first cluster but proves to be better than the third cluster.

Cluster three is the least in terms of education level; the college/university attendance is least and also has the highest percentage of primary education. The expenditure of the cluster can only be rated higher in terms of spending less than TSH 5000, also is rate lowest in spending TSH15, 000 and above. The cluster has the least percentage of household asset, both ownership of television and refrigerator are 0%. Also households with electricity are 0% while more of the cluster members use pit latrine and the use of flush toilet record the lowest among the three clusters.

Connection to sewer line also rate lowest and percentage of those who lack waste disposals are more in this cluster. Most of the household in cluster three buy water from vendors and few of the group members have private piped taps. In the use of public taps, there is not much difference between cluster one and three in terms of public taps usage. Also this cluster has a loo percentage of open well users. This cluster can be rated and scores the least among the other two previously described clusters; therefore, it can be concluded as the cluster with higher number of poor or vulnerable socioeconomic group. (VSEC)

Table 5-2: Socioeconomic Classification

| Socioeconomic indicators | Overall frequency (%) | Cluster characteristics 1(WSEC) N=178 30% | 2(MSEC) N=286 48% | 3(VSEC) N=130 22% |
|---|---|---|---|---|
| **Household education level** | | | | |
| Primary education | 37 | 13 | 45 | 52 |
| secondary education | 36 | 32 | 37 | 40 |
| college/university | 27 | 55 | 18 | 8 |
| **Household daily expenditure** | | | | |
| Less than 5000 | 11 | 3 | 11 | 19 |
| 5000 - 10,000 | 37 | 25 | 40 | 51 |
| 10,000 - 15,000 | 42 | 52 | 43 | 28 |
| 15,000 above. | 10 | 20 | 6 | 2 |
| **Household asset** | | | | |
| Television | 62 | 86 | 77 | 0 |
| Refrigerator | 38 | 64 | 43 | 0 |
| **Toilet type** | | | | |
| Flush toilet | 25 | 82 | 2 | 0 |
| Pit latrine | 75 | 18 | 98 | 100 |
| **Access to infrastructure** | | | | |
| Electricity | 76 | 93 | 100 | 0 |

| | | | | |
|---|---|---|---|---|
| Sewer line | 7 | 22 | 1 | 0 |
| Septic tank | 26 | 78 | 4 | 4 |
| No waste disposal | 67 | 0 | 95 | 96 |
| Private piped water | 12 | 32 | 7 | 1 |
| Public taps | 20 | 19 | 21 | 18 |
| Buy from vendors | 65 | 46 | 70 | 79 |
| Open wells | 3 | 3 | 2 | 2 |

This process shows how the sampled household are classified into the three socioeconomic groups which are used in the rest of the analysis. The proportion of each socioeconomic cluster in the eleven different wards or study area is shown in fig. 5-1.

From the figure below, concentration of socioeconomic groups can be seeing in the different wards. Sinza ward is mostly dominated by well off and moderate socioeconomic class only; this was identified during the study as it appears to be one of the few formal settlements that were selected.

Kijitonyama ward has the three socioeconomic classes, but well off is found to be more than the rest of the groups and also higher among all the wards. In Kijitonyama ward, the vulnerable group is found to be the least in this ward as compared to other wards. Manzese ward is composed of large mixture of the different classes, vulnerable group are the largest in the ward then followed by the moderate socioeconomic class and the least in population is the well off group. In terms of population other different socioeconomic classes, there is no large difference between the three classes in this ward.

Tandale ward is described as the biggest and oldest informal settlement in the city of Dar es Salam; the ward has a closely similar number of the different socioeconomic classes. Well off socioeconomic group and moderate socioeconomic group are closely related in population. The vulnerable socioeconomic class is has a larger population when compared to other social groups. Ndugumbi is also a mixed ward with the three socioeconomic classes; the vulnerable group is relatively lower in population when compared to moderate group and the well off group. Mikocheni is mixed with the three social groups, with moderate social class having the highest population and the vulnerable group being the least in population.

Msasani has a mixture of the three classes but is dominated by the vulnerable social class. Kurasini ward is mostly dominated by the well off and moderate social with the vulnerable class being less in population. Mabibo ward is one of the wards with the highest percentage of vulnerable social class, the ward also record a high percentage of the moderate socioeconomic group and well off group as well. Kinondoni has a low percentage of well off socioeconomic group but moderate and vulnerable groups are of the same population. Buguruni ward has a record of the least percentage of well off socioeconomic group and also record the highest percentage of vulnerable socio economic group as well.

This result shows the pattern of living between the different socio economic groups. From most of the ward, the population of well off socioeconomic class proves to be opposing that of the vulnerable groups.

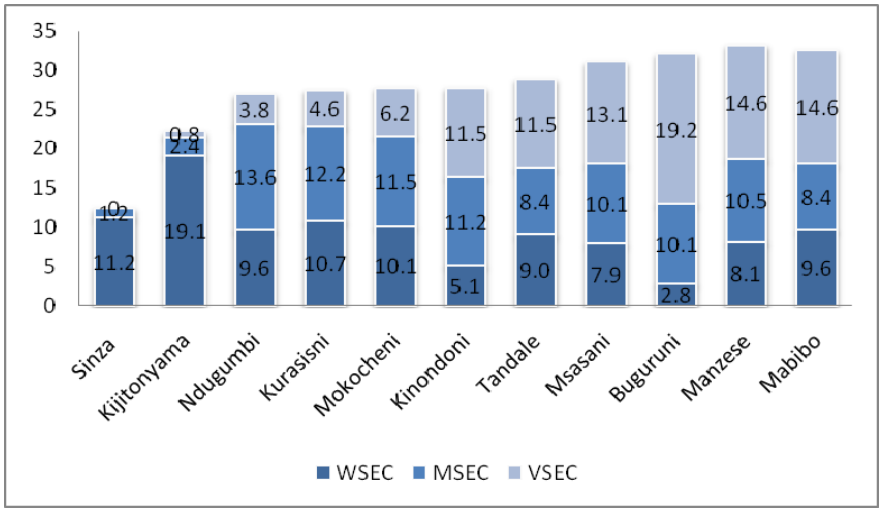


Figure 5-1: Distribution of socioeconomic groups within the study area

## 5.2. Model operationalisation

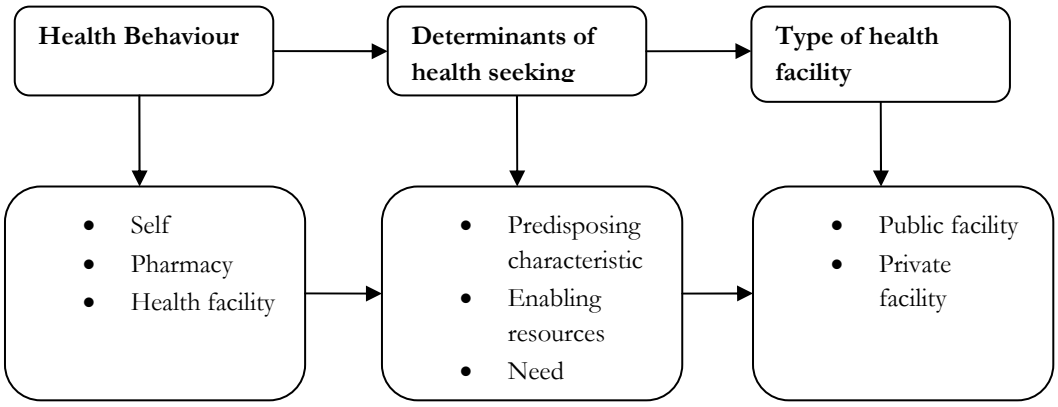


Figure 5-2: illustration of possible health response

In order to identify the determinant of health seeking between the different socioeconomic groups, the illustration above is used. The framework involves three steps, the first step is health behaviour of people in the study, and the health behaviour includes self medication, consultation of pharmacist and visit to health facility. The next step is the determinant of health seeking behaviour; this is the main component of Andersen (1995) model. It includes the predisposing characteristic, the enabling resources and the need factors. The third step is the type of facility attended by individual in case of health facility use. This is determined from the behaviour of individuals who make use of health facility. The type of health facility considered includes public and private.

### 5.2.1. Health behaviour

The health behaviour of individuals from the study area includes self medication, visit to pharmacist when ill and consultation of health facilities. In order to recognise the methods of treatment used, mild illness like malaria, diarrhea, cholera, respiratory diseases and skin diseases are considered. Most respondents disclosed the types of treatment in relation to sickness. From the result of this study, it is confirmed that majority (91%) of the sampled household from the three socioeconomic groups utilise the health facility

for all the types of illness considered. The use of pharmacist and self medication is very low within the well off socioeconomic group. The other two groups make use of self medication and pharmacist but not as much as compared to health facility usage. (See table 5-3)

Table 5-3: Health behaviour of socioeconomic groups

| | WSEC | | | MSEC | | | VSEC | | |
|---|---|---|---|---|---|---|---|---|---|
| Illness type | S.M % | PH % | H.F % | S.M % | PH % | H.F % | S.M % | PM % | H.F % |
| Malaria | 9 | 0 | 91 | 11 | 1 | 88 | 13 | 0 | 87 |
| Cholera | 6 | 0 | 94 | 7 | 3 | 90 | 8 | 0 | 92 |
| Diarrhea | 0 | 0 | 100 | 4 | 4 | 92 | 5 | 0 | 95 |
| Respiratory disease | 0 | 0 | 100 | 3 | 2 | 95 | 0 | 7 | 93 |
| Skin disease | 0 | 13 | 87 | 3 | 17 | 80 | 0 | 25 | 75 |

WSEC=well off socioeconomic class, MSEC=moderate socioeconomic class, VSEC=Vulnerable socioeconomic class. S.M=self medication, PH=pharmacist, H.F=health facility. (Malaria, n=228, cholera=142, skin disease=126, respiratory disease, n=150, diarrhea=112)

From the table above, the health behaviour of people in the study area can be concluded by saying majority of them prefer the use of health facility for therapy. Therefore, the frequency of health facility utilisation and the type of health facility utilised will be considered so as to identify the difference of health seeking between the socioeconomic groups.

### 5.2.2. Determinants of health behaviour

Factors which determine the health seeking behaviour between the three socioeconomic classes are identified using the people's characteristics component of Andersen (1995) health model. This component include, predisposing, enabling and need factors. From predisposing factors age, gender and education of mother are the variables used. From the enabling factors are expenditure, insurance and availability of drugs, and family health condition from needs factor.

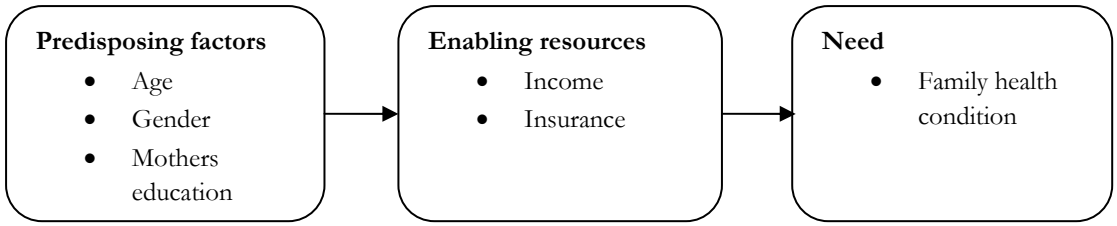


Figure: 5-3: people characteristic component

#### 5.2.2.1. Predisposing characteristics

**Age**

In order to identify the influence of health seeking between the socioeconomic groups, the factor which makes individuals predisposed to use of health facility are considered, this factor are the predisposing factors of the model. The frequency of health facility visit within a house hold is analysed using the age groups of 4 below, age 5 to 17, age 18 to 44, age 45 to 59 and age 60 above.

The table below shows frequency of health facility visit by the three socioeconomic groups. The output shows that frequency of health facility visit is high among the age of 4 below age 5 to 7 and age 18 to 44. The frequency of health facility visit from age 45 to 59 and age 60 and above appears to be very low when compared to ages below. This relates to all the socioeconomic groups. Considering the high frequency of

health facility visit by ages 4 below, this is due to the nature of that age group which makes them highly vulnerable to sickness. Ages from 5 - 17 also has a high frequency of visit to health facilities. This age group visit of health facility is not as frequent as the age below four but is close to it. Age 18 to 44 has the highest frequency of visit. The age group visit to health facility is high in all the socioeconomic groups.

Category of ages from 45 to 59 has a low frequency of visit when compared to other groups. This low frequency is due to the age group being less than other age groups in a household. As a result of that, there are few reported facility visit from this age group. The age of 60 and above is the least in frequency of health facility visit. This is as a result of low percentage of the age group in the city Dar es Salaam (see figure 3-3).

Table 5-4: Frequency of health facility visit by age

| Age | Overall % (n=594) | **WSEC** % (n=178) | **MSEC** % (n=286) | **VSEC %** (n=130) |
|---|---|---|---|---|
| Age 4 below | 29 | 25 | 31 | 30 |
| Age 5- 17 | 23 | 22 | 23 | 21 |
| Age 18-44 | 35 | 39 | 33 | 33 |
| Age 45-59 | 9 | 10 | 8 | 11 |
| Age 60above | 4 | 4 | 5 | 5 |

WSEC=well off socioeconomic class, MSEC=moderate socioeconomic class, VSEC=Vulnerable socioeconomic class

**Gender**

Predisposing factor like gender plays an important role in determining the frequency of health facility visit. In order to identify the influencing factors in health facility utilisation, the gender of individual is a good indicator. From the analysis of frequency of health facility visit of socioeconomic groups, the male gender within the age of 4 below have a higher frequency of health facility visit than the female gender. Also the same result applies to age of 5 to 17. As the age increases, the frequency of visit for the female group also increased.

Between the ages 18 to 44, frequency of health facility visit of the female gender drastically increased to double that of the male gender. This could be identified as the reproductive age of female gender. As such, the need for health services is expected to be more frequent from the female gender of this age group. From the three socioeconomic groups, the female gender utilise health facilities more than the male gender.

The female gender in the well off socioeconomic group utilise health facility more than the women in moderate and vulnerable socioeconomic groups. This can be as a result of different in social class, as the well off socioeconomic group has less impedance to utilise health facilities than the other socioeconomic groups. The result of frequency of visit of ages 45 to 59 shows a large decrease in facility utilisation for the both ages in the different socioeconomic groups. Not withstanding, the female gender also has more frequency of health facility visit than the men. Male gender in the well off socioeconomic group has more frequency of health facility visit than men in the other socioeconomic groups. Also the female gender in vulnerable socio economic group utilise health facilities more than other groups. The category with lowest percentage of health facility utilisation is the age 60 and above.

The result of frequency of shows a change in frequency of facility visit from female to male. From all the socioeconomic groups, the male gender visit health facility more than the females. This could be as a

result of the women reaching a stage which they are no longer categorised as reproductively active. Therefore the chance of health facility visit is reduced. (See table 5-4)

Table 5-5: Frequency of facility visit by gender

| Age | overall % male (n=594) | overall % female (n=594) | **WSEC** % M | F | **MSEC** % M | F | **VSEC** % M | F |
|---|---|---|---|---|---|---|---|---|
| Age 4 below | 33 | 22 | 33 | 17 | 35 | 24 | 31 | 25 |
| Age 5- 17 | 30 | 20 | 28 | 21 | 32 | 22 | 26 | 20 |
| Age 18-44 | 26 | 44 | 25 | 50 | 23 | 41 | 29 | 39 |
| Age 45-59 | 8 | 11 | 9 | 10 | 5 | 10 | 7 | 13 |
| Age 60above | 3 | 3 | 5 | 2 | 5 | 3 | 7 | 3 |

WSEC=well off socioeconomic class, MSEC=moderate socioeconomic class, VSEC=Vulnerable socioeconomic class
M=male, F=female

**Education of mother**

The education level of mothers is considered as a predisposing factor which can influence the frequency of health facility visit. Mothers with better education can have more knowledge of causes of and effects of illness. Therefore mother's education can influence in health seeking of households. From the result of mother's education level, the moderate socioeconomic class has the least of primary school attendant and also has a better percentage of college attendants than the other groups.

The moderate socioeconomic group is in between the other two socioeconomic groups, this means all the school attendance is not more than the well off group and not less than the vulnerable group. The vulnerable socioeconomic group is lower than other groups in term of education level. The group has the highest percentage of primary school attendants and also has the least number of college attendances.

Table 5-6: Use of health facility and education of mother

| Education level | Overall frequency (%) **(n=843)** | **Wsec% (n=292)** | **Msec% (n=380)** | **Vsec% (n=171)** |
|---|---|---|---|---|
| primary | 68 | 44 | 79 | 86 |
| secondary | 13 | 20 | 10 | 10 |
| college | 19 | 36 | 11 | 4 |

Wsec = well off socioeconomic class, Msec = moderate socioeconomic class, Vsec = vulnerable socioeconomic class.

#### 5.2.2.2. Enabling resources

**Expenditure**

Enabling factor like daily expenditure of individuals has influence on health seeking and type of facility utilised. The expenditure of individuals usually goes according to their income, as one cannot spend more than he earn. Daily expenditure of households is categorised from starting from TSH5000 to TSH15, 000 and above (see table 5-2). Using the three socioeconomic groups, it is found that lower expenditure is dominant among the vulnerable socioeconomic group than the other two groups. Higher expenditure is more reflected in the well off and moderate socioeconomic group.

This can exactly show the level of income of the socioeconomic group, as high income earners belong to well off groups. This enabling resource can determine the health behaviour of individual by identifying the type of facility utilised. It can be seen that all the socioeconomic groups utilise both public and private facilities. From the well off socioeconomic group, individuals with highest daily expenditure utilise the public more than the private facilities. Also from the vulnerable socioeconomic class, the little percentage with daily expenditure of 15,000 and above also uses the private facilities more. The result shows the influence of income in type of facility utilised. From the three socioeconomic groups, it can be concluded that increase in daily expenditure affect the type of facility used. Those with higher expenditure utilise the private facilities more than those with lower expenditure also make use of public health facility more. This is the same in all the socioeconomic groups. (See table 5-5)

**Insurance**

Health insurance is a determinant of health seeking which is categorised under enabling resource. Health insurance promotes the use of health facilities by households. In most cases, individuals with health insurance have a tendency of utilising health facility more frequent than those with out insurance. This is due to the advantages associated with it, as those with insurance do not need to pay for services directly. The survey result shows that majority of respondents do not have insurance.

The well off socioeconomic class has the highest number of households with insurance and vulnerable socioeconomic group has a lower percentage of health insurance. The survey shows that as the expenditure of the three socioeconomic groups' increases, the ownership of insurance is also increasing.

Table 5-7: Health insurance and expenditure

| n=594 | WSEC n=178 | | | MSEC n=286 | | | VSEC n=130 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Insurance % | | | Insurance | | | Insurance | |
| Expenditure | % | no | yes | % | no | yes | % | no | yes |
| <5000 | 3 | 3 | 1 | 11 | 11 | 0 | 19 | 19 | 0 |
| 5000 - 1000 | 24 | 20 | 3 | 40 | 39 | 2 | 51 | 51 | 0 |
| 10000 - 15000 | 52 | 42 | 10 | 43 | 42 | 1 | 28 | 27 | 1 |
| >15000 | 21 | 16 | 5 | 5 | 5 | 0 | 2 | 2 | 0 |
| Total % | 100 | 81 | 19 | 100 | 97 | 3 | 100 | 99 | 1 |

Wsec = well off socioeconomic class, Msec = moderate socioeconomic class, Vsec = vulnerable socioeconomic class

#### 5.2.2.3. Need

**Family health condition**

The health condition of a household is considered as a need factor which can determine the use of health facility and the type of health facility to utilise. From the result obtained, the socioeconomic groups behave differently according to the facility type and health condition. Majority of the well off socioeconomic groups utilise private health facility when the health condition is good and moderate, but when the health is very good and bad, the use of public health facility is popular. This could relate to the referral case to the government health centres in case of severe illness.

The moderate socioeconomic group has similarities in facility type to utilise and health condition of the family. The vulnerable socioeconomic group do not use the private facility when the health condition is very bad. They also make use of public health facility more than private facility when the health condition is bad.

Table 5-6: relationship between health condition and facility type

| Health condition | WSEC % (n=172 ) | | MSEC % (n=271 ) | | VSEC % (n=124) | |
|---|---|---|---|---|---|---|
| | public | private | public | private | public | private |
| very good | 2 | 9 | 6 | 4 | 2 | 0 |
| good | 33 | 27 | 29 | 19 | 38 | 19 |
| moderate | 13 | 13 | 21 | 14 | 27 | 8 |
| bad | 2 | 1 | 4 | 3 | 5 | 1 |

Wsec = well off socioeconomic class, Msec = moderate socioeconomic class, Vsec = vulnerable socioeconomic class

**Relationship between Expenditure and frequency of use**

Predisposition to utilise health facility and enabling resources are connected. According to Andersen (1995) model, the use of health facility is determined by enabling resources. These enabling resources include income and insurance. In order to identify the influence of enabling resources on predisposing factors, the use of daily expenditure of households and the frequency of facility utilisation is compared. From the study, the frequency of use of health facility in the well off socioeconomic class is identified with a noticeable relationship. The result shows level of expenditure of a household is related to frequency of usage of facility. Those households with higher expenditure have more frequency of usage. This shows that the more the income level of a household can enable more facility usage. Other socioeconomic class like moderate and vulnerable group have some similarities. These socioeconomic groups show less influence of expenditure to health facility utilisation. In moderate socioeconomic group, high frequency of facility utilisation is dominated within the lowest expenditure than in the high expenditure. This could be as a result of other enabling resources like insurance which the group seem to have. The vulnerable socioeconomic group has less influence of expenditure in frequency of usage of health facility. The increase in expenditure shows decrease in facility utilisation within the group.

Table 5-7: Expenditure and use of health facility

| Expenditure level | WSEC (n=292) | MSEC (n=380) | VSEC (n=171) |
|---|---|---|---|
| < 5000 | 9 | 35 | 26 |
| 5000 - 10,000 | 66 | 154 | 91 |
| 10,000 - 15, 000 | 131 | 167 | 49 |
| > 15, 000 | 86 | 24 | 5 |

Wsec = well off socioeconomic class, Msec = moderate socioeconomic class, Vsec = vulnerable socioeconomic class

**Relationship between Insurance and frequency of use**

Enabling resources like insurance can have a great influence on health facility utilisation. Individuals with insurance will utilise facility more frequent knowing that they don't have to pay for the services. The study shows that the majority of vulnerable socioeconomic do not have insurance. Therefore the use of health facility by this group cannot be influenced by insurance. The well off and moderate socioeconomic groups are identified with better percentage of insurance. The result shows that high frequency of facility use within the age of 18-44 is related to a high number of insurance ownership. The moderate socioeconomic group also show that frequency of use and insurance ownership are related. As it can be seen from table below, the frequency use of facility use within higher percentage of household without insurance is also high. This shows that insurance influences facility use in this socioeconomic group.

Table 5-8: Insurance and use of health facility

| Insurance | Frequency of use | % | **WSEC (frequency=296)** | **MSEC (frequency=383)** | **VSEC (frequency=160)** |
|---|---|---|---|---|---|
| yes | 80 | 10 | 56 | 17 | 1 |
| No | 759 | 90 | 240 | 376 | 159 |

Wsec = well off socioeconomic class, Msec = moderate socioeconomic class, Vsec = vulnerable socioeconomic class

## 5.3. Influencing factors in health facility selection

The influencing factors of health facility selection between the three socioeconomic classes are identified using the health model components. In order to operationalise and conceptualise Andersen (1995) health model, the population characteristics component is used. This component include, predisposing, enabling and need factors. From predisposing factors, occupation of house head, household headship, education of mother, household size and gender are used as variables. From the enabling factors are income, insurance and availability of drugs. And from need factors are type of illness and family health condition.

The health seeking behaviour of different socioeconomic groups was identified based on the type of health facility attended. The eleven variables are introduced into PASW version 18. In order to identify the relationship between three socioeconomic groups the type of health facility they attend. Using cross tabulation and person chi-square, the significance level of each variable with the type of health facility was identified. The analysis was run separately for the three socioeconomic groups. At significant of 0.05, each socioeconomic cluster was identified with variables that are associated with the type of facility attended. The table below gives a summary of each socioeconomic class and their influential factors according to the health model.

Table 5-9: Influencing factors in facility selection

| Model component | **WSEC** | **MSEC** | **VSEC** |
|---|---|---|---|
| Predisposing factors | -Mothers education | -Highest education level in a household | - |
| Enabling factors | -Income | -Availability of drugs | -Income |
| Need factors | -Family health condition | - | - |

Wsec = well off socioeconomic class, Msec = moderate socioeconomic class, Vsec = vulnerable socioeconomic class

### 5.3.1. Influencing factors of well off socioeconomic class (WSEC)

From the outcome of chi squire test, the high socioeconomic class is identified with five indicators which influence the behaviour of the people in type of facility to utilize. Variables identified from predisposing factors are mother's education, age and gender. Influential variables from enabling factor is income while the need factor is the family health condition.

**Predisposing indicators of well off socioeconomic class**

**Mother's education**

The influential factors within this component of the model include mother's education, age and gender. From the descriptive statistics carried out on mother's education, it can be seeing that there is difference between the different level of education and the type of health facility attended. Household with higher number of primary school mother predominantly use public health facility. The result of secondary and

college educated mother's is different. It can be deduced that the higher the education level, the more the utilization of private health facilities. Figure 5-4 gives an insight of the result.

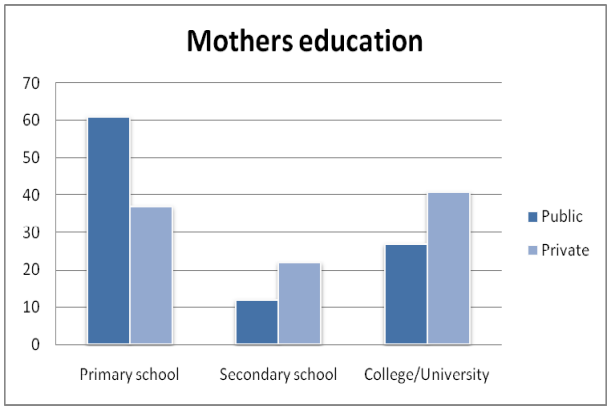


Figure 5-4: Mother education:

**Enabling indicators of well off socioeconomic class**

**Daily Expenditure**

The only enabling factor with significance with type of facility attended in this socioeconomic class is the expenditure level of household. The expenditure rang from spending of below TSH5000 per day to TSH 15,000 and above. From the result of the analysis, most household who spend below TSH5000 make use of public health facility while those within TSH5000 to 10,000 use the private facility more. The category of those who spend TSH10, 000 to 15,000 utilise the public facility more than those who utilise the private facility. In the same socioeconomic class, the category of household who spend TSH15, 000 and above utilise the private health facility more than those who make use of public facility.

From the result, it can be concluded that the more the expenditure level of households, the more the use of private health facility. The category of 10, 000 to 15, and 000 is more than the highest expenditure in term of population of household who utilise both type of facilities, this is because most of the socioeconomic class are within this category of daily expenditure. As a result of that, more samples are taken from the category. Figure 5-4 gives an overview of the analysis.

**Need factor indicators of well off socioeconomic class**

**Family health condition**

This socioeconomic class identified family health condition as the need factor with more significance to the type of health facility to utilise. The family health conditions are categorised as very good, good, moderate and poor. According to the result of the analysis, families with very good health conditions utilise the public health facilities mostly. Those with health conditions categorised as good have a larger sample when compared to other categories of family health condition. Although the result is closely related, this category identifies more users of private health facility than that of public. The moderate health conditions and bad health condition category is identified with more users of private health facilities.

From this result, it can be implied that this socioeconomic class utilise public health facility more when the health condition is very good. But when the condition is getting worse, the use of private health facility is more utilised. Therefore, this can be concluded, by saying the severity of illness can determine the type of facility to be used within this socioeconomic class. In this case, the worst the health condition gets, the more the utilisation of private health facility. The figure below shows gives the output of the analysis.

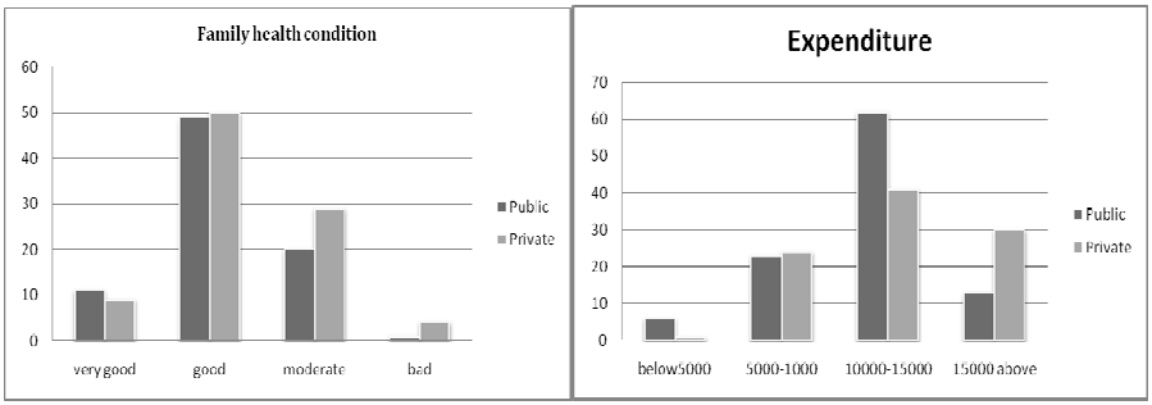


Figure 5-5: Daily expenditure and type of facility attended.

Figure 5-6: Family health condition and health facility type:

### 5.3.2. Influencing factors of moderate socioeconomic class (MSEC)

The middle socioeconomic class is identified with two indicators which have significance with type of health facility attended. From the predisposing factors, the highest education level is identified with strong relationship while from the enabling factors; availability of drugs in the health facility is identified with strong significance. The need factor in this socioeconomic class has no indicator identified with strong significance.

**Enabling indicators of moderate socioeconomic class**

**Availability of drugs**

In the middle class socioeconomic group, the enabling factor which influences the facility type to be utilised is availability of drugs. Availability of drugs in health facility is described as community enabling factor which individual are expected to rely on when seeking medical care. The two categories which include yes and no are those facility who provide drugs after therapy and those who don not provide drugs after therapy. From the result of the analysis, the percentage of household who visit public health facilities that do not provide drugs are more than those who attend private health facilities without drugs. Also from the health facilities that provide drugs, more private and public facility users are recorded. This show how availability of drugs influences health facility utilisation in this socioeconomic group. (See figure 5-7)

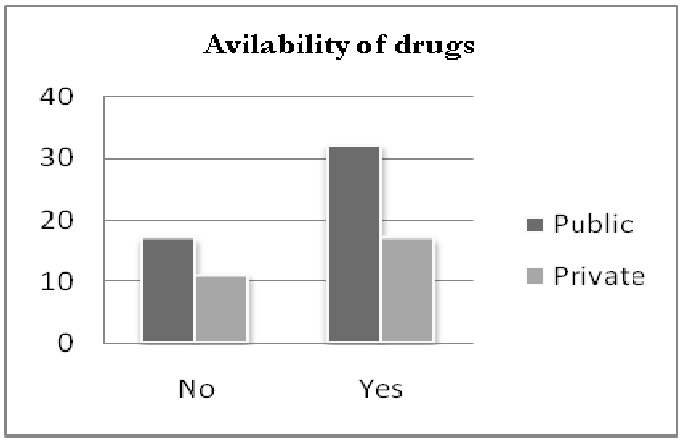


Figure 5-7: Availability of drugs and type of facility used.

## 5.4. Variation in Health Seeking behaviour

Variation in health seeking behaviour is identified using certain indicator. This indicator includes the methods of treatment in case of illness, type of facility used, reasons for facility selection, and modes of transport to health facility.

### Methods of treatment

The illness type are categorised as need factor which individuals demand health care services. In order to identify the difference of health seeking between the three socioeconomic groups, the methods of treatment for the various diseases is identified. The types of disease include malaria, cholera, diarrhea, respiratory disease and skin disease. And the treatment methods are self treatment, consulting a pharmacist and visiting a health facility.

From the result, few percentage of high socioeconomic class does self medication to treat malaria and cholera while only those with skin disease consult pharmacist for medical attention. The larger amount of this socioeconomic class utilise health facility in case other types of illness. The middle socioeconomic class do more self medication than the initial group but the third socioeconomic class proves to do self medication more than the second group. This group are identified with pharmacist consultation in case of skin disease and respiratory disease. The large group of household in this category utilise the health facility most. The health seeking behaviour of individual from the lower socioeconomic does self treatment for malaria, cholera and diarrhea, this group also visit the pharmacist for skin disease and respiratory diseases. The larger amount of this socioeconomic class also utilise the health facilities for other sickness. This can be summarised that majority of the three socioeconomic classes, utilise the health facilities for all the diseases. The lower socioeconomic class do more self medication than the other groups and also lower percentage of the socioeconomic groups utilise the health facilities when compared to the other two socioeconomic groups. The use of pharmacy for medical treatment is more common within the lower socioeconomic class and middle socioeconomic class.

### Socioeconomic group and type of facility attended

Since the focus of the study is on both public and private facilities, therefore the difference in type of health facility utilised within the three socioeconomic groups will be identified. The study found out that both the two types of health facilities are utilised by all the socioeconomic groups. The majority (72%) of households who utilise public facility are from the vulnerable socioeconomic group, while 59% of the moderate socioeconomic group make us of the public facility. 51 percent of the well off socioeconomic group make use of public health facility. Private health facility is not used as much as the public facility, but the three socioeconomic groups also make use of the facility. The well of socioeconomic group utilise this type of facility the most (49%). 40% of the moderate socioeconomic group make use of the private health facility while 27% of the vulnerable socioeconomic group utilise the public health facility.

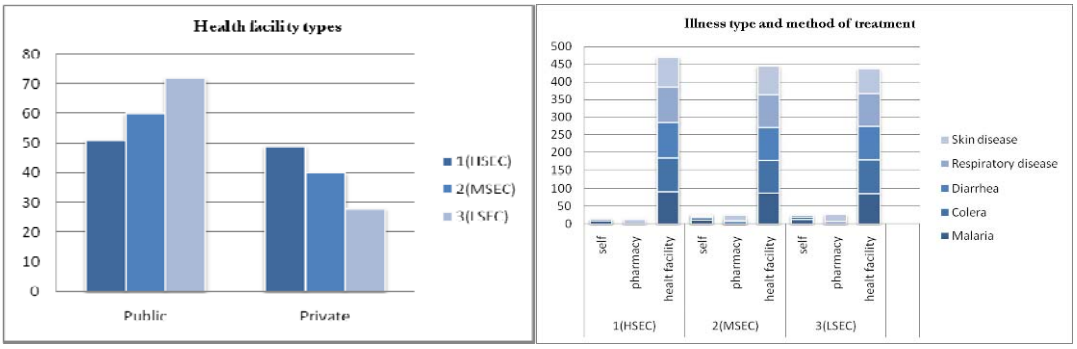


Figure 5-8: Health facility type and socioeconomic class

Figure 5-9: Illness type and mode of treatment:

### 5.4.1. Reasons for avoiding Public Health Facility

The public health facilities which are predominantly utilized by the MSEC and VSEC are mainly owned by the government in Dar es Salaam. These types of facilities do not compete to deliver better service because they are not profit making type of facilities. Usually, public facilities have a lot of short coming when it comes to service delivery. The perception of respondent who visit private health facility was identified. Respondents were asked reasons why they do not attend private health facilities. Among households who visit private health facilities, 96% of private health facility users described quality of service as a major factor to the utilization of the facility while 78% of respondent are concern about long waiting time in public facilities. Factors like availability of drugs is one of the considerations as 77% mentioned that public facilities lack drugs. 80% of household point out that distance to public facilities is a factor. This could be as a result of long distance coverage of public facilities. Respondents that are concern about friendliness of personnel in public facilities sum up to 63% while those that consider opening hour are 24%. From households that visit private health facilities, only 4% describe cost as impedance to utilization of public health facilities. (See figure 5-10)

### 5.4.2. Reasons for avoiding Private Health Facility

Most of private health facilities are profit making facilities; as such there seem to be high competition in service delivery between the same types of facility. From previous health study by Amer (2007), in Dar es Salaam, this category of health facility was identified as in affordable by certain group of people. Also in this study, 98% of respondent described it as expensive. This is actually a known fact that most of public health facility users will capitalise on cost when considering private facility which is aimed at profit making. 76% of households described opening hour of private as a factor which that contribute to their non usage of the facility and only 37% of respondent mentioned the unfriendly behaviour of the health personnel as a discouraging factor. This cannot be compared to that of public facility which is about 63%. The percentage which mentioned availability of drugs as a factor is 25% while those that described waiting time are 22%.

Distance to the facility is a factor which every individual consider most, but from this study, only 20% of respondent mentioned distance to private facility as a factor. This could be as a result of large number of private facilities which are dispersed across the study area. In term of quality of service, this type of facility is know to be good, so the household who described quality of service as a reason for avoiding the facility type are just 9% of the sample. As it can be seen from respondent perspective, their basic consideration when looking at private facility is the issue of cost and opening hour. While there is a lot of trust in quality of service and low waiting time in this type of health facility.

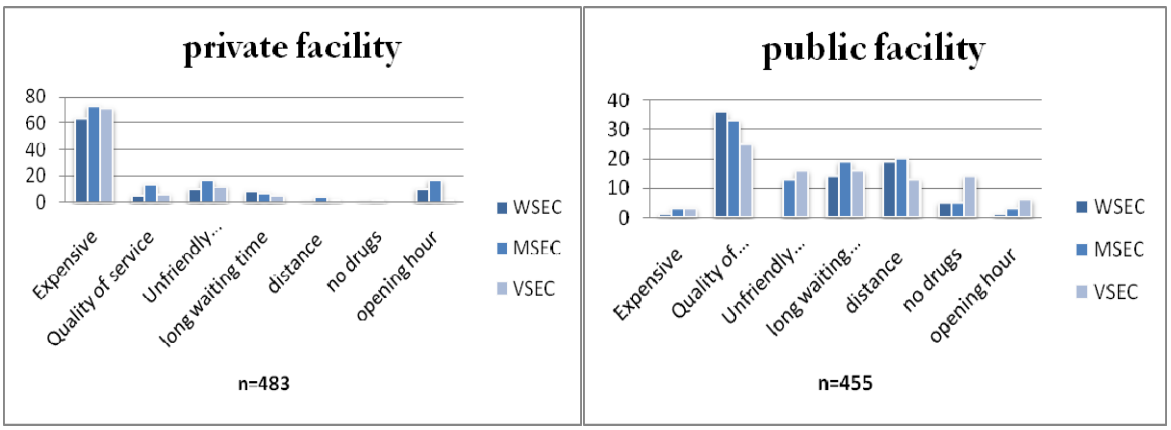


Figure: 5-10: Reasons for avoiding public facility (a)(b)

## 5.5. Spatial aspect of Health Seeking behaviour

This part of the study focused on the spatial aspect of health seeking behaviour, the main aim is to show the pattern of health seeking behaviour of people in the study area. The spatial dimension will include the mode of transport to health facilities type and distance covered to facilities.

### 5.5.1. Transportation mode

Dar es Salaam is a city with different modes of transport, ranging from commercial buses, private cars, taxi cars, commercial motorcycle and bicycles. Majority of the respondent make use of foot as the major mode of transport to health facilities, this could relate to the findings of Amer (2007). Also, a next considerable mode of transport close to foot is the public bus transport known as Daladala. The use of private vehicle is not too common but is better than other means of transport as identified. Transport modes like bicycle and motorcycle contribute less than 1% of the population. Respondent who make use of taxi to health facilities and those that use hired motorcycle sum up to 2%. From this result, it can be concluded that majority of household in Dar es Salaam make use of foot as the main mode of transport to health facilities irrespective of the socioeconomic status. (See table5-4)

Table 5-10: Transport mode to health facilities.

| Mode of transport | Survey data 2010(%) | Amer (2007) |
|---|---|---|
| Foot | 69 | 75 |
| Bicycle | 0 | - |
| Motorcycle | 0 | - |
| Private car | 4 | 3 |
| Hired motorcycles | 1 | - |
| Taxi | 1 | - |
| Public bus (Daladala) | 25 | 20 |

### 5.5.2. Socioeconomic class and transportation mode

Looking at the socio economic classes and mode of transport, that predominant use of private car is mostly done by high income class (98%), 70% of the group members use taxi, 62% of hired motorcycle and 45% of public bus. The WSEC also use foot (30%) to health centres while none from this group is recorded to use bicycle to health facilities. The MSEC mostly use the public bus(55%), also 30% of the group make use of taxi to health facilities. 39% use the group hired motorcycle and 32% make us of foot to health facilities. Only 2% make use of private vehicle as transport mean. The vulnerable socioeconomic group are the most household that make use of foot to health facilities, although the difference between other groups is not much, but the group has 38% of those who use foot. This mode of transport is dominant within the socioeconomic group; therefore the group did not appear to use any other means of transportation. (See figure 5-15(a))

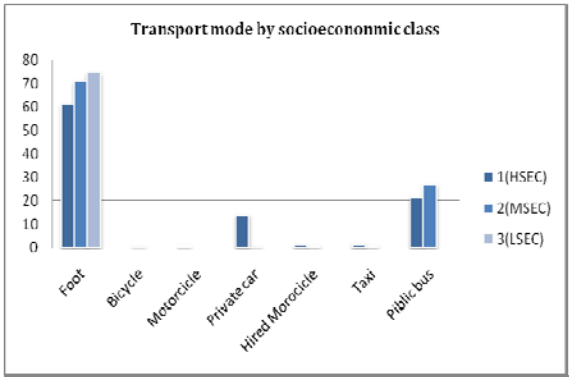


Figure 5-11: Transport mode and socioeconomic class

### 5.5.3. Transportation mode and type of facility attended

This section of the analysis focused on modes of transport to the different facility types. The health seeking behaviour of people is identified with respect to the type of health facility used and the modes of transport to the facility type. As earlier described in 5.5.1, the dominant mode of transport to health facility irrespective of the type of facility is walking (foot). Both the types of facilities record a high percentage of users (64%) (77%).

The use of private vehicle to health facility is common within those who make use of private facility than those who go to public. The result gives more explanation of the result figure 5-8 and figure 5-11. This shows that the majority of well off socioeconomic class who visit the private health facility, do so with the means of private vehicle. And the rest 1% of this socioeconomic class visit public facility with private vehicle.

The use of taxi to the different health facility types is not very common, only few percentages of households use this mode of transport to both the facility types. Also the use of bicycle and motorcycle and hired motorcycle are not dominant in the study area.

One of the most common transport modes to health facility is the use of Public bus (Daladala). This transport mode is very common for both the private and public facility users. The percentage that visits the public facility using public transport is more than those that visit the private health facility. (see figure )

Table 5-11: Transport mode and type of facility attended

| Mode of transport | Public facility (%) | Private facility %) |
|---|---|---|
| Foot | 64 | 77 |
| Bicycle | 0 | 0 |
| Motorcycle | 0 | 0 |
| Private car | 1 | 10 |
| Hired motorcycles | 1 | 0 |
| Taxi | 1 | 1 |
| Public bus (Daladala) | 33 | 12 |

Public transport n=227, private facility n=182.

### 5.5.4. Travel time and mode of transport to health facility

In order to show the spatial dimension of health seeking behaviour, the travel time to health facility and distance are identified. Using the network data set of the study area, the origin of respondents, (residential hexagons) and the destination (visited health facility) are located using a desire line. The modes of transport used are public facility and foot. The reason behind this is due to the fact that these modes of transport are the most used. Also the reason for selection of public transport mode is that both the public and private transport modes use the same network system. The city of Dar es salaam is usually associated with high traffic; therefore the difference in speed of the different transport modes will have little difference.

An assumption of walking speed of 4km/hr is taken into consideration based on the same estimation by Amer(2007). Since there is no intension to use the actual road network in this analysis, an assumption of 25km/hr is also taken into consideration for vehicles irrespective of road type used to health facility. This assumption is set between the standard speed of 45km/hr of major roads and 15km/hr of the access

roads. Using the field calculator function of ARC GIS, the distance to facility is multiplied by 60 (seconds) and divided by 1000, and finally multiplied by speed of transport modes. From this formula, the speed for different transport modes is identified. Also within the interval of fifteen minutes, the changes in transport mode are seeing as the distance is increased.

Figure 5-12 shows the difference in transport mode with respect to distance. From the figure, it can be seen that the lower distance of 0-15 minutes and 15 – 30 minutes is dominated by walking as the transport mode to health facility. As the distance is increasing, the use of foot to health facility is also decreasing. At the distance of 31-45 minutes, the transport mode is over taken by public vehicle and the more the distance increases, the more the use of vehicle and the less the use of foot to health facility. This result shows the influence of distance in transport mode and health facility choice.

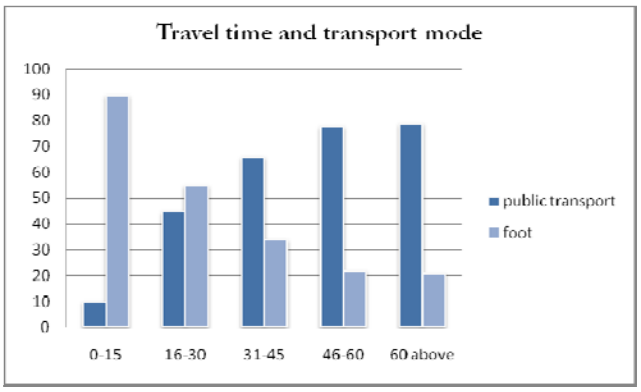


Figure 5-12: Travel time interval of 15 minutes and mode of transport.

### 5.5.5. Availability of facility within reach

One of the difference reasons for difference in behaviour of people is the availability of facility within reasonable distance. One of the criteria for selection of sampled areas includes the areas with availability of multiple facility and areas with little choice in facility selection. This section of the analysis tends to show two different residential hexagons in the study area and compare the availability of facility types within reasonable distance. Kurasini ward was taken as an example of areas located at the peripheral part of the city and Manzese is an example of residential area within the core of the city.

Using ARC GIS software, the location of facilities given by respondents and the residential hexagons are also considered in order to see the type of health facilities within certain distance to the residential hexagons. The distance considered is both 500 metres and 1000 meters. A buffer was created based on the distances considered. And each residential hexagon is identified with certain number of health facility types within reach.

From the result of the buffer lines created, it can be seeing that Manzese ward which is located within the city core has more health facilities within reach than Kurasini. At a distance of 500 mitres from the residential hexagon, there are three private health facilities available while within 100 metres, there is only one public health facility within that distance. This result shows that people from this ward (Manzese) are close to private health facility than the public facility.

Kurasini ward which is located at the outskirt of the city is identified with no health facility both private and public within 500 metres buffer. Considering distance of 1000 metres, the ward (Kurasini) is identified with two private health facilities and there is no public health facility within that distance. This shows that Kurasini ward has limited number of health facility within reasonable distance. Although time did not allow for more analysis on this aspect of the study, but it can be seeing that physical access to health

facility of people varies with respect to availability of health facility around. This output can serve as an indicator of difference in health seeking behaviour of people. The people in the two different wards have a tendency of different behaviour toward selection of health facility to utilise.

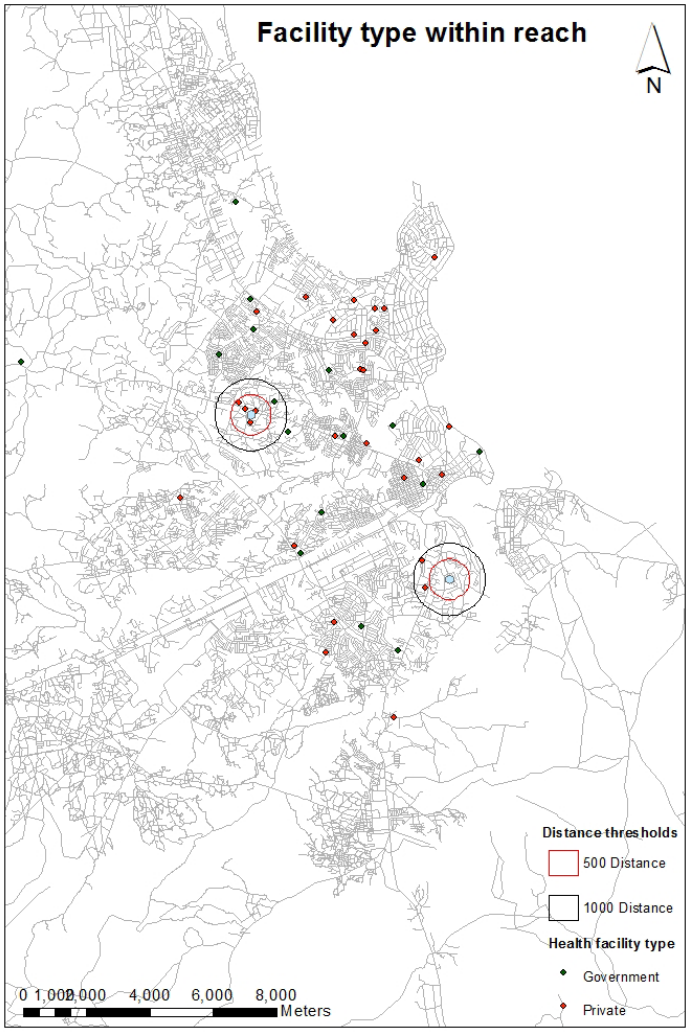


Figure 5-13: Health facility type within reach

### 5.5.6. Travel distance to health facility

From the forty seven located health facilities which respondent visit, it is identified that the health seeking behaviour of people varies. Most respondent visit health facilities with distance above two kilometer as far as they get satisfied with the services provided. From the result obtained, the maximum distance covered to health facility is about 11 kilometer and the minimum distance covered to health facility is 0.3 meters. The average distance travel by respondent to health facility is 3.29 kilometer.

#### Distance covered by foot

Transportation mode like is foot is the major type used in health facility visit. (See table 5-4) this transport mode contains about sixty percent of the population visit to health facility. The study shows that people travel averagely 2.3 kilometres to health facility by foot.

#### Distance covered by public transport

Public transport (bus) is the second largest mode of transport to health facility; this mode of transport is mostly used based on the availability of road access to a facility. Most respondent use public transport to a

longer distance than of health facility than those who use their foot to health facility. The average distance travelled by public transport to a health facility is 5.4 kilometres. This is more than the average distance covered by foot to health facility.

### Distance covered by private vehicle

The use of private vehicles to health facility is least among the three transport modes. The study shows that only the well off socioeconomic class makes use of private vehicle to health facility (figure 5-13).Households that make use of public transport cover a longer distance when compared to foot and public transport users. The average distance covered to health facility using private vehicle is 6.2 kilometres.

| | Average distance | Frequency (%) | Average distance to public facility | Average distance to private facility |
|---|---|---|---|---|
| Travel by foot | 2.3 | 48 | 3.0 | 2.0 |
| Travel by bus | 5.4 | 37 | 5.3 | 6.0 |
| Travel by car | 6.2 | 23 | 7.1 | 6.1 |

Table 5-12: Travel distance by transport mod

# 6. DISCUSSION ON FINDINGS

*This chapter discussed the result and findings of the study. Based on the objective and sub objective of the study the discussion is made. The result discovered in each of the objectives is critically discussed in relation to some of the short coming and anticipated result.*

## 6.1. Operationalising health seeking model

**Socioeconomic classification**

In order to operationalise the health seeking model and also to answer questions in the research, the identification of socioeconomic variation is necessary. The method used is two step cluster analysis. Most of the analysis in this study is dependent on the clustering of socioeconomic classes, therefore there is need to highlight the advantages and disadvantages of the method. As discussed by Brophy et al.,(2006), the methods offers flexibility either in producing cluster automatically or imposing the number of clusters required. Also its ability to use categorical variables is an advantage as other clustering methods like k-means and hierarchical clustering do not permit this type of variables. One of the short coming of this method is that after the classification of variables into groups, the groups will hardly have a clear distinction. Therefore, the identification of socioeconomic classes will be done base on observation of which cluster rates best in the socioeconomic indicators. From this observation the socioeconomic classes are named as well off, moderate and vulnerable.

This socioeconomic classification was used subsequently in the study for the different objectives and research questions. Also socioeconomic classification is used to show how it affects the health seeking behaviour of people. As explained by Adamson et al., (2003), the socioeconomic class has influence in the choice of facility of certain group of people. A basic assumption in the study was there is difference between the rich and the poor in terms of education level, income and access to infrastructure. This is found to be true in the study.

As part of model operationalisation, the behaviour of people in the three socioeconomic groups turns out to be similar based on method of treatment. More than 80% from each cluster make use of health facility for therapy. This can be due to level of education in Dar es Salaam as most households have minimum of primary school attendant. (See table 5-2) Also the most of population is not affected by the influence of believes an religious factor

**Health model components**

Predisposition of individual to seek care is considered from the model component, factors like age, gender and mothers education are analysed in the study. The study showed that frequency of facility use is more dominant within age below four (29%) and age within 18-44 (35%).Researcher by Ahmed et al., (2005) showed that the older age group also have tendency of frequent facility visit. In this study, the elderly group of age sixty and above had the lowest frequency of health facility visit (4%). According to the hypothesis of the study, it is also believed that the older population will utilise health facility more frequent. This outcome could be as a result of little percentage of older population in Dar es Salaam, and also lower percentage of same age group within the study area (see fig 3-3).

The study showed higher frequency of facility usage of male gender within age four (33%) and female gender of age within eighteen to forty four (44%). This outcome is similar in all the socioeconomic

groups. In general understanding the lower age group are more vulnerable to illness, as such the need for health services is more required. Also the high frequency of facility by women within age eighteen to forty four is not surprising. As discussed in section 2.5.1, this age group is considered as reproductive age of women, therefore the need for more health services is anticipated.

Socioeconomic status and education have similarities. From the study of Amin et al., (2010) used the education of women in a household as predictors of health seeking behaviour. This study showed that women with lower education utilise health facilities more frequent (68%) than the well educated ones (19%) irrespective of the socioeconomic status. This outcome can also show the influence of education in the other direction. Thereby considers the education of mothers in a household as knowledge of causes of illness and how to prevent it. This can lead to more frequency of use of health facility by the lower educated mothers.

Enabling resources like expenditure or incomes and insurance have an important role to play in the use of health facility. As described in section 2.2, these factors play a vital role in health seeking behaviour of individuals. The study showed that ownership of insurance and daily expenditure of the socioeconomic groups is related. This tells more of socioeconomic class and ownership of insurance. From the outcome of this study, it can be said that well off socioeconomic group have more insurance than the other groups, also the more the income rates, the more the ownership of insurance.

The need for health services is determine by illness severity and duration of illness. This study captures the severity of illness of household during health facility visit within the last six months. The selection of facility type to utilise during illness is similar to all the socioeconomic groups. The study showed that the severity of illness determine the type of facility to utilise. The use of both public and private facility is more similar when the illness moderate or not too severe. But when the severity of illness is very high or health condition is bad, all the socioeconomic groups tend to utilise more of public health centres. This can be assumed that most high level services are provided by public hospitals in Dar es Salaam. From the survey, most households claim their main reason for use of public facility is because if the illness condition is getting bad, the public facility will not accept patient from private facility. Therefore, this shows that most referral cases are to public facility and referral cases are considered as severe illness that can't be treated in normal public or private dispensaries.

## 6.2. Influencing factors in health facility selection

As a sub objective in this study, the influencing factor in facility selection for the socioeconomic groups is identified. From the result obtained in section 5.3, the influencing factors in type of facility selection for the socioeconomic groups differ. The hypothesis is socioeconomic classes have different factors that influence their choice of facility to utilise. From the Pearson chi square result, at significance of ($p < .001$!) the well of socioeconomic class showed that level of mother's education in a household has influence in health facility selection. Figure 5-6 showed the level of education of mother by the socioeconomic classes. From the image, it can be deduced that the well off socioeconomic group is recognised with more percentage of mother with college education (36%). The education of women in a house household as described by Ahmed, et al., (2010), has a great influence in health facility. Daily expenditure is also an influencing factor within this group. The socioeconomic group is categorised with better expenditure than the other two groups.(see table 5-2) this could have influence in the selection of service to utilise, as cost of service is not a problem to this socioeconomic group. Availability of drugs in health facility is also a factor of consideration in health facility selection for this socioeconomic group (See appendix c).
The moderate socioeconomic class is recognised with only availability of drugs as influencing factor in health facility selection this could be as a result of limited option of the groups in term of income which will affect their choice of facility usage.

## 6.3. Variation in health seeking behaviour

**Methods of treatment**

From the result obtained, the three socioeconomic have certain similarities in health seeking behaviour. In analysis on methods of treatment, the socioeconomic groups depict similar characteristics. Considering the type of illness and methods of treatment by the group, all the three socioeconomic groups make use of health facility for treatment while few among

**Difference in type of health facility utilisation**

The hypothesis in this analysis is private health facility is used by the well off socioeconomic group and the vulnerable socioeconomic groups utilize the public facilities. This study did not show a distinctive difference in that aspect, but there is certain relationship between the socioeconomic group and health facility type. From the result of the well off socioeconomic class, it is identified that this socioeconomic group utilises the private facility more than the other groups. 49% of the population in this group utilise private facility while 51% of the group make use of public health facility. Despite the fact that difference is not much, but it can be seen that the group make use of public health facilities more than private facilities.

The use of public or private does not decide the socioeconomic class of individual. As discussed in section 5-3, the influencing factor of individual are what make him or her utilize a facility. The moderate socioeconomic group socioeconomic group mostly utilise the public health facility (60%). 40% of the group members make use of the private health facility. From this group, it can be said that the use of both type of health facility is common within the group. The vulnerable socioeconomic group has the largest percentage of public health facility usage (72%) the population that uses the private health facility are about 28%. This is also a large percentage of people. From the three groups, it can be concluded that the well off have more usage of private health facility than other socioeconomic groups and the vulnerable socioeconomic group also make use of more public health facility. In order to have a more insight on the type of facility selection by the socioeconomic groups, the reasons behind avoiding certain type of facility is analysed.

**Spatial aspect of health seeking behaviour**

Considering the spatial aspect of health seeking, the modes of transport to health facility by the three socioeconomic groups have some differences. The study showed the most used transport mode to health facility is walking. The next mode of transport which is mostly used is public bus then the use of private vehicle. From the three socioeconomic groups, more than 50% of each group visit health facility by walking. In the well off socioeconomic group 62% of the group visit health facility by walking, and 22% visit health facility using the public bus while 15 % make us of private vehicle. The well off socioeconomic group is the only group that uses private vehicle to health facility.

The moderate socioeconomic make us or walking as transport mode more than the well of socioeconomic group. 70% of the moderate socioeconomic group visit health facility by walking, and 27% of the group member make use of public bus. These group members are not identified with use of private vehicle to health facility. The other members of the group make us of transport modes like taxi, and hired motorcycle. Vulnerable socioeconomic mostly walk to health facility (75%). This mode of transport is the major transport mode within the socioeconomic group. The use of other mode of transport like public bus and motorcycle is not common.

The mode of transport of the different socioeconomic groups has a certain difference. The well off socioeconomic group is the only group that make use of private vehicle. This showed that the group had more assets than that which is described in table 5-2. The use of other modes of transport like walking within this group is common; this is not surprising as most of health facilities in Dar es Salaam are not too

far from residents. It can be concluded that only households that visit health facility of longer distances make us of vehicle or public bus.

**Travel distance**

From the spatial analysis of health seeking behaviour, it was identified that the different transport modes have certain limit of travel distance to health facilities. The shorter distance to health facilities is mostly dominated by those who walk to health facility. And the longer distance is occupied by the users of public buses and private vehicles. As the distance of travel increases, the mode of transportation changes. Most people who make use of walking as transport mode averagely travel 2.3 kilometres. The study also showed that there is difference in travel distance to the different facility types. From the result of the analysis, it is realised that people travel a longer distance to public health facilities by walking than to private health facilities. Average walking distance to public health facility is 3kilometres while the private health facility is averagely 2 kilometres. The use of public bus as transport mode showed that a longer distance (6km) is travelled to private health facility than to public health facility (5.3km). Transportation mode like private vehicle travel a longer distances to public health facility (7km) than to private health facilities (6 km) these shows that the well of socioeconomic group travel longer distance to health facilities than the other two socioeconomic groups. This is due to the fact that transportation is not a major problem of this socioeconomic group.

# 7. CONCLUSION AND RECOMMENDATIONS

*This chapter makes a conclusion based on the outcome of the result in this study. After the conclusion, recommendations where made with respect to certain aspect of the study which requires further research.*

## 7.1. Conclussions

This study is mainly focused on evaluating the health seeking behaviour of people in Dar es Salaam. The study tried to conceptualise a health seeking model using a certain part of the model as described in chapter 2.5. The use health model helps in identifying the behaviour of people toward health services, based on their socioeconomic characteristics. The main objective of the study is to identify the main determinant of health seeking across the social classes. In order to achieve this, sub objectives are formulated, and to help answer the sub objectives, research questions are formulated. Below is the conclusion of the study based on the answers to the objectives and research questions.

### 7.1.1. Findings from sub objective 1

The findings of this objective showed that the use of health facility varies according to age and gender. From this objective, it is concluded that ages below four and within eighteen to forty four have a tendency of frequent utilisation of health facility in a household. Also the female gender of age eighteen to forty four utilises health facility more than any other age group in the household. From this objective, it is identified that income of a household has an influence with ownership of health insurance. And finally the use of health facility is not influenced by ownership of insurance.

### 7.1.2. Findings from sub objective 2

From this objective, it can be concluded that influencing factors in selection of facility to utilise differ according to socioeconomic status. The well off socioeconomic class have factors like education level of mother in the household which influences the facility selection, also the income of the household is discovered to have influence in facility selection. The well off socioeconomic group is also recognised with availability of drug in a health facility as influencing facto of facility choice and finally the illness severity of household member is an influencing factor in selection of which health facility to utilise.
The moderate socioeconomic group and the vulnerable socioeconomic groups depict the same behaviour in the influencing factor in selection of facility to utilise. These two socioeconomic groups are recognised with similar factor which determine their health facility utilisation. This factor is the availability of drug in a health facility.

### 7.1.3. Findings from sub objective 3

The result of this sub objective showed that in term of method of treatment, there is not much difference between the socioeconomic groups, as all the socioeconomic groups depict similar characteristics. In term of facility type to utilise, there is not much difference as all the socioeconomic groups utilise similar type of health facilities. The spatial dimension of health seeking behaviour showed that the well off socioeconomic group travel longer distance to health facility than the other two groups. This part of the study also revealed the majority (69%) of health seekers travel to health facility of choice by foot.

## 7.2. Recommendations

From the findings of this study and some limitations in methods certain areas of the study can be recommended for feature research which can further improve the findings of this study.

- One of the objectives of this study is to identify the time trend of health seeking behaviour in Dar es Salaam by comparing with previous study of Amer (2007). Due to time factor, this objective is not achieved. This can serve as a recommendation to further this study.

- More recommendations that can be given based on this topic is first of all the use of other predictive methods to identify the determinant of health seeking behaviour of people. As in this study a descriptive statistic is the main method used.

- Another possible recommendation related to this study is the use of spatial methods to show the health seeking behaviour of the different socioeconomic classes spatially. This study tried to show the spatial aspect but did not include the socioeconomic classes in a spatial way

- Finally the last recommendation will be to focus a research on the five components of access and how they have influence to health seeking behaviour of people.

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# APPENDICES

**Appendix A** -Cross table of influencing factors of facility selection

| (WSEC) Mothers education *health facility type | | | | | |
|---|---|---|---|---|---|
| | | | Health facility type | | |
| | | | Public | Private | Total |
| Mothers education level | Primary education | Count | 55 | 33 | 88 |
| | | Expected Count | 44.5 | 43.5 | 88.0 |
| | | % within Mothers education level | 62.5% | 37.5% | 100.0% |
| | | % within Health facility type | 61.1% | 37.5% | 49.4% |
| | | % of Total | 30.9% | 18.5% | 49.4% |
| | Secondary education | Count | 11 | 19 | 30 |
| | | Expected Count | 15.2 | 14.8 | 30.0 |
| | | % within Mothers education level | 36.7% | 63.3% | 100.0% |
| | | % within Health facility type | 12.2% | 21.6% | 16.9% |
| | | % of Total | 6.2% | 10.7% | 16.9% |
| | College or University education | Count | 24 | 36 | 60 |
| | | Expected Count | 30.3 | 29.7 | 60.0 |
| | | % within Mothers education level | 40.0% | 60.0% | 100.0% |
| | | % within Health facility type | 26.7% | 40.9% | 33.7% |
| | | % of Total | 13.5% | 20.2% | 33.7% |
| Total | | Count | 90 | 88 | 178 |
| | | Expected Count | 90.0 | 88.0 | 178.0 |
| | | % within Mothers education level | 50.6% | 49.4% | 100.0% |
| | | % within Health facility type | 100.0% | 100.0% | 100.0% |
| | | % of Total | 50.6% | 49.4% | 100.0% |

| Chi-Square Tests | | | |
|---|---|---|---|
| | Value | df | Asymp. Sig. (2-sided) |
| Pearson Chi-Square | 10.012[a] | 2 | .007 |
| Likelihood Ratio | 10.112 | 2 | .006 |
| Linear-by-Linear Association | 7.859 | 1 | .005 |
| N of Valid Cases | 178 | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.83.

Appendix c -cross table of influencing factors of facility selection

| (WSEC) Daily expenditure *health facility type | | | | | |
|---|---|---|---|---|---|
| | | | Health facility type | | |
| | | | Public | Private | Total |
| Household daily expenditure | less than 5000 | Count | 1 | 5 | 6 |
| | | % within Household daily expenditure | 16.7% | 83.3% | 100.0% |
| | | % within Health facility type | 1.1% | 5.7% | 3.4% |
| | | % of Total | .6% | 2.8% | 3.4% |
| | 5,000 to 10,000 | Count | 21 | 21 | 42 |
| | | % within Household daily expenditure | 50.0% | 50.0% | 100.0% |
| | | % within Health facility type | 23.3% | 23.9% | 23.6% |
| | | % of Total | 11.8% | 11.8% | 23.6% |
| | 10,000 to 15,000 | Count | 56 | 36 | 92 |
| | | % within Household daily expenditure | 60.9% | 39.1% | 100.0% |
| | | % within Health facility type | 62.2% | 40.9% | 51.7% |
| | | % of Total | 31.5% | 20.2% | 51.7% |
| | 15,000 and above | Count | 12 | 26 | 38 |
| | | % within Household daily expenditure | 31.6% | 68.4% | 100.0% |
| | | % within Health facility type | 13.3% | 29.5% | 21.3% |
| | | % of Total | 6.7% | 14.6% | 21.3% |
| Total | | Count | 90 | 88 | 178 |
| | | % within Household daily expenditure | 50.6% | 49.4% | 100.0% |
| | | % within Health facility type | 100.0% | 100.0% | 100.0% |
| | | % of Total | 50.6% | 49.4% | 100.0% |

| Chi-Square Tests | | | |
|---|---|---|---|
| | Value | df | Asymp. Sig. (2-sided) |
| Pearson Chi-Square | 12.151[a] | 3 | .007 |
| Likelihood Ratio | 12.553 | 3 | .006 |
| Linear-by-Linear Association | .328 | 1 | .567 |
| N of Valid Cases | 178 | | |
| a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.97. | | | |

Appendix c -cross table of influencing factors of facility selection

| Availability of drug*health facility type | | | | | |
|---|---|---|---|---|---|
| | | | Health facility type | | |
| | | | Public | Private | Total |
| Availability of drugs after prescription | No | Count | 46 | 10 | 56 |
| | | Expected Count | 28.3 | 27.7 | 56.0 |
| | | % within Availability of drugs after prescription | 82.1% | 17.9% | 100.0 % |
| | | % within Health facility type | 51.1% | 11.4% | 31.5% |
| | | % of Total | 25.8% | 5.6% | 31.5% |
| | Yes | Count | 44 | 78 | 122 |
| | | Expected Count | 61.7 | 60.3 | 122.0 |
| | | % within Availability of drugs after prescription | 36.1% | 63.9% | 100.0 % |
| | | % within Health facility type | 48.9% | 88.6% | 68.5% |
| | | % of Total | 24.7% | 43.8% | 68.5% |
| Total | | Count | 90 | 88 | 178 |
| | | Expected Count | 90.0 | 88.0 | 178.0 |
| | | % within Availability of drugs after prescription | 50.6% | 49.4% | 100.0 % |
| | | % within Health facility type | 100.0% | 100.0% | 100.0 % |
| | | % of Total | 50.6% | 49.4% | 100.0 % |

| Chi-Square Tests | | | | | |
|---|---|---|---|---|---|
| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
| Pearson Chi-Square | 32.600[a] | 1 | .000 | | |
| Continuity Correction[b] | 30.783 | 1 | .000 | | |
| Likelihood Ratio | 34.659 | 1 | .000 | | |
| Fisher's Exact Test | | | | .000 | .000 |
| Linear-by-Linear Association | 32.417 | 1 | .000 | | |
| N of Valid Cases | 178 | | | | |
| a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 27.69. | | | | | |
| b. Computed only for a 2x2 table | | | | | |

Appendix c -cross table of influencing factors of facility selection

**(WSEC) Health condition*health facility type**

| | | | Health facility type | | |
|---|---|---|---|---|---|
| | | | Public | Private | Total |
| Family Health condition | Missing value | Count | 5 | 1 | 6 |
| | | % within Family Health condition | 83.3% | 16.7% | 100.0% |
| | | % within Health facility type | 5.6% | 1.1% | 3.4% |
| | | % of Total | 2.8% | .6% | 3.4% |
| | Very good | Count | 3 | 15 | 18 |
| | | % within Family Health condition | 16.7% | 83.3% | 100.0% |
| | | % within Health facility type | 3.3% | 17.0% | 10.1% |
| | | % of Total | 1.7% | 8.4% | 10.1% |
| | Good | Count | 57 | 49 | 106 |
| | | % within Family Health condition | 53.8% | 46.2% | 100.0% |
| | | % within Health facility type | 63.3% | 55.7% | 59.6% |
| | | % of Total | 32.0% | 27.5% | 59.6% |
| | Moderate | Count | 22 | 22 | 44 |
| | | % within Family Health condition | 50.0% | 50.0% | 100.0% |
| | | % within Health facility type | 24.4% | 25.0% | 24.7% |
| | | % of Total | 12.4% | 12.4% | 24.7% |
| | Bad | Count | 3 | 1 | 4 |
| | | % within Family Health condition | 75.0% | 25.0% | 100.0% |
| | | % within Health facility type | 3.3% | 1.1% | 2.2% |
| | | % of Total | 1.7% | .6% | 2.2% |
| Total | | Count | 90 | 88 | 178 |
| | | % within Family Health condition | 50.6% | 49.4% | 100.0% |
| | | % within Health facility type | 100.0% | 100.0% | 100.0% |
| | | % of Total | 50.6% | 49.4% | 100.0% |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 12.250[a] | 4 | .016 |
| Likelihood Ratio | 13.272 | 4 | .010 |
| Linear-by-Linear Association | .952 | 1 | .329 |
| N of Valid Cases | 178 | | |

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.98.

Appendix c -cross table of influencing factors of facility selection

| (MSEC) Availability of drugs*health facility type | | | | | |
|---|---|---|---|---|---|
| | | | Health facility type | | |
| | | | Public | Private | Total |
| Availability of drugs after prescription | No | Count | 99 | 20 | 119 |
| | | % within Availability of drugs after prescription | 83.2% | 16.8% | 100.0% |
| | | % within Health facility type | 57.2% | 17.7% | 41.6% |
| | | % of Total | 34.6% | 7.0% | 41.6% |
| | Yes | Count | 74 | 93 | 167 |
| | | % within Availability of drugs after prescription | 44.3% | 55.7% | 100.0% |
| | | % within Health facility type | 42.8% | 82.3% | 58.4% |
| | | % of Total | 25.9% | 32.5% | 58.4% |
| Total | | Count | 173 | 113 | 286 |
| | | % within Availability of drugs after prescription | 60.5% | 39.5% | 100.0% |
| | | % within Health facility type | 100.0% | 100.0% | 100.0% |
| | | % of Total | 60.5% | 39.5% | 100.0% |

| Chi-Square Tests | | | | | |
|---|---|---|---|---|---|
| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
| Pearson Chi-Square | 43.954[a] | 1 | .000 | | |
| Continuity Correction[b] | 42.342 | 1 | .000 | | |
| Likelihood Ratio | 46.686 | 1 | .000 | | |
| Fisher's Exact Test | | | | .000 | .000 |
| Linear-by-Linear Association | 43.800 | 1 | .000 | | |
| N of Valid Cases | 286 | | | | |
| a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 47.02. | | | | | |
| b. Computed only for a 2x2 table | | | | | |

# APPENDICES

Appendix c -cross table of influencing factors of facility selection

| (VSEC) Availability of drugs* health facility type | | | | | |
|---|---|---|---|---|---|
| | | | Health facility type | | |
| | | | Public | Private | Total |
| Availability of drugs after prescription | No | Count | 56 | 11 | 67 |
| | | % within Availability of drugs after prescription | 83.6% | 16.4% | 100.0% |
| | | % within Health facility type | 59.6% | 30.6% | 51.5% |
| | | % of Total | 43.1% | 8.5% | 51.5% |
| | Yes | Count | 38 | 25 | 63 |
| | | % within Availability of drugs after prescription | 60.3% | 39.7% | 100.0% |
| | | % within Health facility type | 40.4% | 69.4% | 48.5% |
| | | % of Total | 29.2% | 19.2% | 48.5% |
| Total | | Count | 94 | 36 | 130 |
| | | Expected Count | 94.0 | 36.0 | 130.0 |
| | | % within Availability of drugs after prescription | 72.3% | 27.7% | 100.0% |
| | | % within Health facility type | 100.0% | 100.0% | 100.0% |
| | | % of Total | 72.3% | 27.7% | 100.0% |

| Chi-Square Tests | | | | | |
|---|---|---|---|---|---|
| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
| Pearson Chi-Square | 8.776[a] | 1 | .003 | | |
| Continuity Correction | 7.653 | 1 | .006 | | |
| Likelihood Ratio | 8.936 | 1 | .003 | | |
| Fisher's Exact Test | | | | .003 | .003 |
| Linear-by-Linear Association | 8.709 | 1 | .003 | | |
| N of Valid Cases | 130 | | | | |
| a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 17.45. | | | | | |
| b. Computed only for a 2x2 table | | | | | |

# APPENDICES

**Appendix b** –Content of household survey questionnaire

HOUSEHOLD SURVEY QUESTIONNAIRE, SEPTEMBER - OCTOBER 2010

Q. NO……

Municipality ……..……..Ward……..

Interviewers Name……Date:……Time:……..

Coordinate……..……
Duration ……

This survey intended for collecting information for evaluating access to primary health care in Dar es Salaam, Tanzania. The interview will focus on understanding household socio economic characteristics/status and perceptions on access to primary health care. Any information spoken or written will be treated with high confidentiality. Your honest comments and cooperation on answering different questions about your household characteristics and evaluating access to primary health care will highly be valued.

*Note: A respondent should either be a head of house, wife/husband, or any household member who knows a household status.*

Household socio economic information

*Interviewer: I will start this interview by asking you some questions related to your household information. This interview will take us at least 40 minutes*

<table>
<tr><td>A</td><td colspan="2">General information of respondents</td></tr>
<tr><td>A.1</td><td>Respondent gender</td><td>☐ Male. ☐ Female</td></tr>
<tr><td>A.2</td><td>Position in a family</td><td>Head of a family ☐Yes, ☐ NO<br>☐Husband, ☐ Wife<br>☐ Other, specify: _____</td></tr>
<tr><td>A.3</td><td>Occupation of house head</td><td>☐ Temporary employed ☐ Self employed<br>☐ Permanently employed ☐ Unemployed</td></tr>
<tr><td>A.4</td><td>Family status</td><td>☐ Both parents<br>☐ Female headed family<br>☐ Male headed family</td></tr>
<tr><td>A.5</td><td>Household size by age<br>[Write the number of people living in the house for no less than 1year]</td><td>
<table>
<tr><td>Age</td><td>No.</td><td>M</td><td>F</td><td>Respondent</td></tr>
<tr><td>Below 4 years</td><td></td><td></td><td></td><td rowspan="2"></td></tr>
<tr><td>5-17 years</td><td></td><td></td><td></td></tr>
<tr><td>18-44 years</td><td></td><td></td><td></td><td></td></tr>
<tr><td>45-59 years</td><td></td><td></td><td></td><td></td></tr>
<tr><td>60 years above</td><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

| | | |
|---|---|---|
| | | Total household number…….. |

| | | |
|---|---|---|
| A.6 | What is the highest education level in the household? | ☐ No education<br>☐ Adult education<br>☐ Primary education<br>☐ Ordinary secondary education<br>☐ High level secondary education<br>☐ College/University education |
| A.7 | Mothers Education level | ☐ No education ☐ Adult education<br>☐ Primary school ☐ High school<br>☐ Secondary school ☐ College/university |
| A.8 | Household employment status | |
| A.9 | How much is your average expenditure per day? | ☐ less than Tsh 5000<br>☐ 5000 – 10,000<br>☐ 10,000 – 15,000<br>☐ 15,000- 20,000<br>☐ Above 20,000 |
| A.11 | In which socio economic group can you say your household belongs? | ☐ Wealthy<br>☐ Moderate/Comfortable<br>☐ Poor<br>☐ Very poor |
| A.12 | What types of assets the household possess? *[ indicate each item passed in the house]* | ☐ Car<br>☐ Bicycle<br>☐ Television<br>☐ Motorcycle<br>☐ Sewing machine<br>☐ Refrigerator<br>Others _____ |
| B | Housing condition | |
| B.13 | Status of house | ☐ Owned ☐ Rented Others(specify): _____ |
| B.14 | Settlement status | ☐ Planned ☐ Unplanned |

| Household members | No employment | Self employment | Temporary employment | Permanent employment |
|---|---|---|---|---|
| …… | …… | …… | …… | …… |
| …… | …… | …… | …… | …… |
| …… | …… | …… | …… | …… |
| …… | …… | …… | …… | …… |
| …… | …… | …… | …… | …… |
| …… | …… | …… | …… | …… |

| | | |
|---|---|---|
| B.15 | Number of rooms occupied by household | ☐ Bedroom ☐ Kitchen ☐ Toilet/Bathroom ☐ Others |
| B.16 | What material is the house constructed of? | ☐ Cement bricks ☐ Mud bricks ☐ Mud and Poles ☐ Concrete ☐ Others: _____ |
| B.17 | What type of toilet does your household use? | ☐ Flush toilet ☐ Pit latrine ☐ Open air (no toilet) |
| B.18 | Waste water disposal (sewage waste) | ☐ Septic tank ☐ Sewer line ☐ None |
| B.20 | What is your household main source of water? | ☐ Piped water ☐ Buying from vendors ☐ Public tap ☐ Open wells |
| B.21 | Do you have electricity in your house? | ☐ Yes ☐ No |
| Existing health care facility<br>*Interviewer: I will now ask you about your perception on status of primary health care facilities usually visited by your household members.* | | |
| C | General information on access to health care | |
| C.22 | Do you know any health facility close to you? | ☐ Yes ☐ |
| C.23 | Could you mention the names of the health facilities within your reach? | Name of facility location<br>1. …… ……..<br>2. …… ……..<br>3. …… ……..<br>4. …….. …… |
| C.24 | Which of these facilities does your family usually attend? | Name _____ |
| C.25 | What are the main reasons for visiting the facility? | [Rank the reasons from 1,2,3 .... depending on their importance]<br>☐ Not far from home ☐ Less crowded ☐ Not expensive<br>☐ Availability of drugs ☐ Recommended by a friend/relative ☐ Friendly personnel<br>☐ Long time knowledge ☐ Others:_____ |
| C.26 | How do you reach primary health care facility? | *[If more than one means of transport used, indicate time for each]*<br>☐ Foot: Go to C.28<br>☐ Bicycle Go to C.28<br>☐ Motorcycle Go to C.28<br>☐ Private car Go to C.28<br>☐ Hired motorcycle Go to C28 and 29<br>☐ Taxi Go to C.28 and C.29<br>☐ Public transport (Daladala) Go to Question C.28 and C.29 |
| C.27 | Why did you not go to a private facility, can you give reasons? | [Rank the reasons from 1,2,3 .... depending on their importance]<br>Expensive:(1), Low service quality(2), Unfriendly behaviour(3) Religious/cultural |

<table>
<tr><td></td><td></td><td>factor: (4), less crowded/less waiting time(5), Very far from home: (6),<br>No medications/ drugs:(7) Open hours(8), others(9)<br><br><table><tr><td>Name of facility</td><td>Reason(s)</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table></td></tr>
<tr><td>C.28</td><td>Why did you not go to public primary health care?</td><td>[Rank the reasons from 1,2,3 .... depending on their importance]<br>Expensive:(1), Low service quality(2), Unfriendly behaviour(3) Religious/cultural factor: (4), less crowded/less waiting time(5), Very far from home: (6),<br>No medications/ drugs:(7) Open hours(8), others(9)<br><table><tr><td>Name of facility</td><td>Reason(s)</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table></td></tr>
<tr><td>C.29</td><td>How far is the primary health care facility visited usually by household members?</td><td>Distance (km); _____<br>Travel time (minutes): _____ ( normal condition)<br>_____ (with traffic jam, if any)</td></tr>
<tr><td>C.30</td><td>What do you think about the distance to the facility?</td><td>☐ Very near ☐ Near ☐ Normal ☐ Far ☐ Very far</td></tr>
<tr><td>C.31</td><td>How often have the members of your household visited a health facility in the last 6 months?</td><td>Number of time(s) _____</td></tr>
<tr><td>C.32</td><td>How can you describe the health condition of your family?</td><td>☐ Very good ☐ Good ☐ Moderate<br>☐ Bad ☐ Very bad</td></tr>
<tr><td>C.33</td><td>Could you specify for each of your house hold member</td><td><table><tr><td>Age range</td><td>M</td><td>F</td><td>Frequency</td></tr><tr><td>1 below</td><td></td><td></td><td></td></tr><tr><td>1-5</td><td></td><td></td><td></td></tr><tr><td>5-15</td><td></td><td></td><td></td></tr><tr><td>15-25</td><td></td><td></td><td></td></tr><tr><td>25-40</td><td></td><td></td><td></td></tr><tr><td>40 -59</td><td></td><td></td><td></td></tr><tr><td>60-above</td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>C.34</td><td>How long do you normally wait before getting service after</td><td>Time in minutes: _____<br>How do you think about waiting time?</td></tr>
</table>



☐

| | | |
|---|---|---|
| | reaching the facility? | ☐ Very short ☐ Short ☐ Normal ☐ Long ☐ Very long<br><br>Does the facility have a proper waiting area? Yes: ____ No: ____ |
| C.35 | Does the facility provide drugs after prescription? | ☐ Yes ☐ No<br>If no, how far do you go to buy prescribed medicine?<br>___Very near ___Near ____ Normal ____ Far ____ Very far |
| C.36 | What health problem did you or any member of your household suffer from in the past 6 months) | ☐ Malaria ☐ Cholera ☐ Dyarrhea<br>☐ Mother/child ☐ Respiratory disease ☐ Skin disease<br>☐ Others(specify) _____ |
| C.37 | How do you treat yourself in case of the following sickness? | |

| | Malaria | Dyarrhea | Skin disease | Respiratory disease | Dyarrhea |
|---|---|---|---|---|---|
| Self medication | | | | | |
| pharmacist | | | | | |
| Health facility | | | | | |
| Name offacility | | | | | |

| | | |
|---|---|---|
| C.38 | Does your household have health insurance card? | ☐ Yes ☐ No<br>If no why? _____ |
| C.39 | What do you think about the following costs? | |

| | |
|---|---|
| Registration cost | Very inexpensive___ In expensive___ Normal___ Expensive ___ Very expensive ___ |
| Doctor's fee | Very inexpensive___ In expensive ___ Normal___ Expensive ___ Very expensive ___ |
| Medication cost | Very inexpensive___ In expensive___ Normal___ Expensive ___ Very expensive ___ |
| Traveling cost to health facility | Very inexpensive___ In expensive___ Normal___ Expensive ___ Very expensive ___ |
| Total cost | Very inexpensive___ In expensive___ Normal___ Expensive ___ Very expensive ___ |

| | | |
|---|---|---|
| C.40 | Does your household manage to pay all the cost of health care? | ☐ Yes ☐ No<br>If No why:_____ |
| C.41 | Does your household feel welcome in the facility you visit? | ☐ Yes ☐ No<br>If no, why?<br>…… |
| C.42 | Do you consider any cultural or religious preference in choosing a particular facility? | ☐ Yes ☐ No<br>If yes, what is it?<br>…… |

| | | |
|---|---|---|
| C.43 | How is the cleanliness of the facility? | Very clean___ Clean ____ Normal ____ Dirty _____ Very dirty____ |
| C.44 | How is the personal treatment from all facility personnel? | Very good ____ Good ____ Normal ____ Bad _____ Very bad ____ |
| C.45 | What does your household think about medical ability (trust) on the facility? | Very good ____ Good ____ Normal ____ Bad _____ Very bad ____ |
| C.46 | Do health facilities have sufficient health personnel? | ☐ Yes ☐ No<br>If no, what kind of personnel needed most?<br>Doctor's_____, Nurses _____ Midwives_____ Dentist_____ Laboratory technicians_____ Others; specify _____ |
| C.47 | What does the household think about availability of equipments and laboratory facilities from a visited health care facility? | Very good ____ Good ____ Normal ____ Bad _____ Very bad ____ |
| C.48 | If equal number of male and female medical personnel is available, to whom will your household prefer to visit? | ___ Male household members to male doctors<br>___ Female household members to female doctors<br>Does not matter for Male _____ Female _____<br>Does not matter all<br>How satisfied are you with existing situation in this regard?<br>Very satisfied____ Satisfied _____ Normal _____ Unsatisfied ____<br>Very unsatisfied _____ |
| C.49 | Does the opening hour of a facility suits your household time? | ☐ Yes ☐ No |
| C.50 | If your household income doubled, will your household go to the same facility? | ☐ Yes ☐ No<br>If no, which one will you visit (name)?<br>……..<br>Why? …….<br>…….. |
| C.51 | Which of these factors do you think is affecting your household access to primary health care? | *[Tick only the most important factor considered by a household]*<br>Distance and travel time to primary health care: _____<br>Availability of drugs, waiting time, equipments, health personnel and quality of service: _____<br>Cost of services: _____<br>Opening hours of a facility, cleanness and behaviour of health personnel's:_____<br>Religious and cultural factors: _____ |
| C.52 | Which of these factors is more important for you to get a better primary health care? | *[Rank the preferences from 1to 6]*<br>Reduced travel time: _____<br>Reduced waiting time: _____<br>Reduced cost: _____ |

| | | |
|---|---|---|
| | | Cultural and religious factors: _____<br>Improved quality of services: ____<br>Friendly health personnel: ____ |
| C.53 | What is the overall level of satisfaction on health care service that you are getting? | ____ Very satisfied ____ Satisfied _____ Normal ____ Unsatisfied<br>____ Very unsatisfied |
| C.54 | What do you think should be changed to have better primary health care? | [Rank the preferences from 1, 2, 3…….]<br>Reduced travel distance to health care: ____<br>Reduced travel time: _____<br>Reduced waiting time: _____<br>Reduced cost: _____<br>Better option on cultural and religious factors: _____<br>Improved quality of services: ____<br>Improve personal treatment from health personnel: ____<br>Increase the number of health personnel: ____ |

Thank you very much for your cooperation

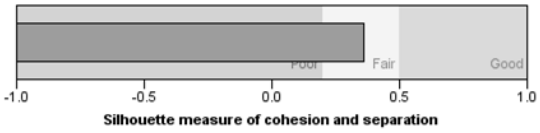
# APPENDICES

**Appendix C** – Two step cluster output

**Model Summary**

| | |
|---|---|
| **Algorithm** | TwoStep |
| **Input Features** | 8 |
| **Clusters** | 3 |

**Cluster Quality**




**Clusters**

Feature Importance

1.0 0.8 0.6 0.4 0.2

| Cluster | 2 | 1 | 3 |
|---|---|---|---|
| Label | | | |
| Description | | | |
| Size | 48.1% (286) | 30.0% (178) | 21.9% (130) |
| Features | Electricty Yes (100.0%) | Electricty Yes (93.3%) | Electricty No (100.0%) |
| | Household waste disposal none (94.8%) | Household waste disposal septic tank (77.5%) | Household waste disposal none (96.2%) |
| | Toilet type Pit latrine (98.3%) | Toilet type Flash toilet (82.0%) | Toilet type Pit latrine (100.0%) |
| | Own a television Yes (77.3%) | Own a television Yes (86.0%) | Own a television No (100.0%) |
| | Own a refrigerator No (67.5%) | Own a refrigerator Yes (63.5%) | Own a refrigerator No (100.0%) |
| | Highest education level in the household Primary education ··· | Highest education level in the household College or Univers··· | Highest education level in the household Primary education ··· |
| | Household source of water from vendor (70.3%) | Household source of water from vendor (45.5%) | Household source of water from vendor (79.2%) |
| | Household daily expenditure 10,000 to 15,000 (43.0%) | Household daily expenditure 10,000 to 15,000 (51.7%) | Household daily expenditure 5,000 to 10,000 (50.8%) |