

**FACTORS INFLUENCING LAND USE CHANGES IN URBAN AREAS:
THE CASE OF LAND DEVELOPMENT PROJECTS IN
ILEMELAMUNICIPAL COUNCIL**

**By
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CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation/thesis entitled “*Factors Influencing Land use Changes in Urban Areas: The Case of Land Development Project in Ilemela Municipal Council*” in partial/fulfilment of the requirements for award of the degree of Project Planning and Management (MSc PPM) of Mzumbe University, Tanzania.

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DEDICATION

This dissertation is heartily dedicated to my lovely wife and my family in general for their prayers and encouragement.

LIST OF ABBREVIATION AND ACRONYMS

GIS	Geographical Information System
PAP	People Affected by the Project
UNCHS	United Nations' Centre for Human Settlements

ABSTRACT

The purpose aimed at assessing the factors influencing land use changes in urban area in Ilemela Municipality in Mwanza City. The study adopted a cross-sectional research design and the data were collected from 305 plot owners from the area of the study via survey questionnaires. The study also employed a logistic regression model to map the relationship between the predictors and land use changes in urban area. However, before running the model a different tests such as descriptive statistics and zero order correlation analysis was first run. The correlation analysis was meant to test any multicollinearity problem and it was found that there is no problem.

The logistic regression results established that urban planning activities carried out by the municipal through urban planning projects, increases the odds of land use changes. It was also revealed that age of the land owner decreases the odds of land use changes while, marital status and sex of the plot owner revealed to increase the odds of land use changes in urban area. Apart from that, it's the study found that accessibility and location increases the odds of land use changes in urban areas while, distance from the city centre revealed to decrease the odds of land use changes in urban area. Apart from the demographic factors, the socio-economic factors such as land value, land tenure system and land demand revealed to increase the odds of land use changes in urban areas while, business activities revealed to have no any influence on land use changes in urban areas.

The recommendation is made to the policy makers on establishing the awareness campaign so that the community at large become familiar with the land policy, land act and land regulations. To the municipal urban planners, the study recommends the adherence of regulations and procedures in implementing the land planning projects. The study also recommends the land owners to make efforts on understanding the land policy that govern the land use changes.

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CHAPTER ONE

PROBLEM SETTINGS

1.1 Background to the problem

Land is one of three major factors of production in classical economics (along with labour and capital) and an essential input for housing and food production (Echevarria, 2010). Thus, land use is the backbone of agricultural economic and it provides substantial economic and social benefits (Gwamna & Yusoff, 2015). In this regard, land use change is inevitable because it is necessary and essential for economic development and social progress (Wu, 2008). In the era we are living in, changes in land uses is so rapid in urban areas irrespective of the genesis and nature because the changes are part of urban growth (Gwamna & Yusoff, 2015). Town, cities and even rural areas in both developed and developing countries are experiencing changes in its physical form, population and social constituents which have led to land use changes and its implication on social life, economic and environmental aspects (Appiah, Bugri, Forkuor, & Boateng, 2014).

In relation to population growth and urbanisation, statistics show that in 1995, the urban population in the world was estimated at 2.4 billion people, but to date is about 7 billion and above and it expected to increase to about 8 billion in 2025 (Nzunda, Munishi, Soka, & Monjare, 2013). Urbanization, industrialization, and economic growth are closely related, and affect the rural countryside and natural landscapes over increasingly vast areas (Antrop, 2012). Natural and traditional rural landscapes are profoundly modified and disappear, while new highly dynamic ones are created. Land use is changing accordingly, and landscapes become multifunctional. Urbanization and industrialization emerged and developed very differently according to geographical localization and environmental conditions (Nzunda, *et al*, 2013). World widely, the pattern of urban land use changes where peri-urban, land uses change from agricultural or forests to urban uses are a global phenomenon which pervades across the continents (Mdemu, *et al.*, 2012).

Generally, in developing countries, the problem (change in land use) is so severe, especially in urban areas as a result of economic and population growth (Antrop, 2012). The urbanisation process that takes place in these countries has resulted from both direct and indirect influences as multi-directional and differentiated in time and space.

In that regard, we experience a number of people transforming natural habitats into man-made landscapes of residential, commercial, institutional and industrial areas as well as supporting infrastructure. The side-effects of urbanisation and population growth to land uses have resulted to most of the natural lands be fragmented into small pieces of lands likely to create adverse environmental impacts such as the decrease in agricultural and ecological lands in countries such as China (Swangjang & Iamaram, 2011) and; prediction of the effects of land use change on water supply in the watershed area (Wu, 2008). Despite the side-effects to both environmental and social life, a number of studies have addressed the importance of these changes, among others being access to better social services, accessibility through infrastructure, recreations, industrialisation, business activities and good housing; all of them being essential for socio-economic transformation (Joseph, 2009).

In Africa, the genesis of the dynamic land use structure has a humble beginning as at 1910. The African society was simply not properly monitored because there was no formal planning authority in place (Oduwaye, 2013). The history shows that urbanization and the growth of cities in Africa took place in 1960s after most of the countries in the continent attained political independence (Spance, Clarke, & Buckley, 2009).

The growth experienced in size, spatial organization, morphology and population, though, there is regional variation in urbanization trends (UNCHS, 1997). This change has mainly been caused by rural-urban migration. After political independence, the

major cause was natural population increase (UNHS 1986). These changes resulted in high demand of land for agriculture, settlements, business and industrialisations. Therefore, land use changes were experienced in that era till the present to suit the demand (Antrop, 2012)

Tanzania is not far from other developing countries; the land use pattern is also associated with urbanization and population growth as the major drivers(Dickson, 2014). It is reported that in the 2000s the country was one of the least urbanized countries in the World, but has been experiencing a rapid rate of urbanization since then (Frank, 2010). Statistics shows that the country has experienced high rate of urbanisation whereby in 2006 about 24.5% of the population lived in urban areas, the rate kept increasing whereby in 2016 it was reported to be 32.3% while in 2017, it was reported to be 33% (International Growth Centre, 2017).

There have been continued changes in land use in many parts of Tanzania. In some cases, land use changes have occurred in various environments in response to various situations. Adverse climatic conditions, changes in population, land pressure and changes in socio-economics are among the factors that favour or discourage certain land use changes (Ngailo, Kaihura, Baijukya, & Kiwambo, 2013). In historical view, much effort was put into setting-up and enforcing the land regulatory framework after World War II, particularly as Tanzanians started living in towns as workers in government establishments, manufacturing and transport industries, and in private trade activities. The early towns in Tanzania then started off and grew, partly as Administrative Towns. The towns shortly became centres of small-scale manufacturing, commerce, transport and communication. Towns grew slowly, until recently, and many remained too small to require settlement-planning interventions (Lugoe, 2008). All these transformations went parallel with land use changes from forest to settlement, peri-urban to urban to municipals to cities (Masanja, 2013).The present trends indicate that the major growth of the world's population will occur in urban areas, in megacities in less developed regions.

Simultaneously, the rural population will continue to decline in all regions in the world. Levels of urbanization between 80 and 90% are likely (Mdemu, 2017). In densely inhabited areas, the intensification and up scaling of the agricultural production will cause increasing environmental stress. Continuing urban sprawl and growth of infrastructures will cause increasing fragmentation and demand multifunctional land use. Specific tourist and recreational forms of land use still develop at an accelerating speed in coastal and mountainous regions, affecting valuable natural areas, and demand more appropriate sustainable management. Remote rural areas with less favourable and declining social and economic conditions and poor accessibility will face depopulation, marginalization and land abandonment (Antrop, 2012).

However, the previous studies put emphasize on land use changes but the relationship with urban planning projects is inadequately covered. It is also observed that the common area that covered in the literature is in the economic, social, governmental, demographic, geographical infrastructural and people's interest factors (Dickson, 2014; Joseph, 2009; Masanja, 2013) but these factors can be reduced into socio-economic, environmental and governmental factors and then broken down into measurable variable. The current study also observed that the previous studies have not explained the issue of land use changes in relation to the value model and urban land use model in the theoretical perspective, thus the current study filled the gap by discussing the problem while relating with the theoretical models as explained in the theoretical reviews. Though there are some studies that have been conducted in Tanzania for instance the study of Masanja (2013), Mdemu (2012) and Msoffe (2011), the findings in this study are inconclusive and anecdotal. In these regard, the current study focuses on addressing the factors that are likely to influence land use changes in Tanzania

1.2 Statement of the Problem

Tanzania is one of the few countries that have plenty undeveloped land though the percentage of undeveloped land is not recorded. However, the recent report according to Gaddis (2017) indicated that agricultural arable land covers about 44.76% of the total land equivalent to 423,020.5 Square Kilometre, but only 33% of this arable land is used for cultivation. Thus, the country still has some room of land that can be invested in otherwise (Gaddis, 2017). The rest of the land is used for forestry, reserves, settlements, and other economic investments. However, the demand of land for settlement and business activities is reported to be high in cities such as Mwanza, Dar Es Salaam, Moshi and Arusha (GUEDA, 2011) and now Dodoma due to the shift of the country capital from Dar Es Salaam to Dodoma. In other areas, especially in agro-economic society the land is demanded for crop cultivation and grazing (Mdemu, 2012). This high demand is stimulated by; economic development where the land is demanded for business in order to establish industries, population growth where the growing number of population increases with the increase in the demand of land for settlement(Gaddis, 2017).

The effect associated with land development projects is seen to affect some groups in the society we are living; for instance,agro-pastoralist community, whose main incomes for their livelihoods depend on pastoralism and crop production for food and for selling. Another effect is the reduction of the environmental amenities and loss of biodiversity when land is converted from farm land to urban planning (Ngailo, *et al*, 2013). Apart from that, loss of some community identity for instance Mwanza and Shinyanga the identity of the Sukuma society was identified by the cultivation of cotton and rice crops but nowadays the big area of land have been converted to urban planning for settlements, industries and other business and social activities (Joseph, 2009). The land development projects have also affected the land values in big cities that inhabit poor people to have access to it and hence deciding to reside in squatter areas where incidence of environmental catastrophes is very high (Masanja, 2013).

Some studies have been done particularly in Tanzania to uncover the factor influencing land use changes particularly in land development projects. The major findings include; urbanization and population growth as drivers (Masanja, 2013); conversion of forest reserves urban because of settlement and business activities (Mdemu, 2012). On the other hand, effects such as threats to wildlife and biodiversity and disruption of ecosystem associated by converting rangeland to farmland (Msoffe, 2011) have also been discussed in the literature. In common the literature explains how a land use change is influenced by economic, social, environmental, governmental, demographic, geographic infrastructural (urban factors) and people's interest factor. However, the detailed explanation of the factors that is broken down into measurable characteristics such as land value, location, distance from the city centre, accessibility, population etc. are inadequately explained in the literature. The issue of land use changes in relation to the value model and urban land use model in the theoretical perspective is also not clearly explained by the literature, thus the current study will fill the gap by discussing the problem while relating with the theoretical models as explained in the theoretical reviews.

1.3 Objectives of the study

1.3.1 General objective

The study is geared to establish the factors that influence land use changes in urban areas in Tanzania.

1.3.2 Specific objectives

The following specific objectives will guide the proposed study

- To examine the relationship between urban planning and land use changes in urban areas
- To identify social-economic factors that influence land use changes in urban areas

- To identify the environmental factors that influence land use changes in urban areas
- To assess the influence of the government on urban land use changes

1.4 Research questions

- i. What is the relationship between urban planning and land use changes in urban area?
- ii. What are the socio-economic factors that influence land use changes in urban area?
- iii. What are the environmental factors that influence land use changes in urban area?
- iv. What is the influence of the government on urban land use changes?

1.5 Scope of the study

Land use change is a broad topic of which areas such as geographic, economic, urban, social, environmental, public interest, political, demographic, laws and logistic should be covered as explained in the value model of land use.

Therefore, to cover all these variables it more time is needed and budget to integrate GIS analysis and econometric analysis. In this regard, the current study will only focus on the socio-economic factors, environmental factors and urban factors (urban planning) to explain the influence on land use changes via econometric analysis.

1.6 Significance of the study

The study is significant in some areas, particularly to the government whereby the findings and the suggestion that will be provided by the study may help in the review in the land policy in order to minimise or eliminate land conflicts that are common in Tanzania.

It will also help stakeholders such as landowners to understand the land policy that govern the land use changes in Tanzania. Therefore, through understanding the land

policy, the land owners will be aware of what they need to do and what is the responsibility of the government when it comes that a certain area need to be changed from one use to another.

To the coming researchers, the study will add knowledge to the literature that may be cited in the related area and identify the gap on the area that has not been covered in this study.

At the end upon successful completion, the study will help the researcher to be awarded a degree in Master of Science in Project Planning and Management.

1.7 Organisation of the study

The dissertation is organised into six logical related chapters; chapter one, chapter two, chapter three, chapter four, chapter five and chapter six.

Chapter one is about introduction and problem setting. Therefore, the chapter introduces the problem that describes the nature of the problem and relate it to the past time and the current situation in order to establish what has changed so far. In this chapter, the statement of the problem is also described. The statement of the problem is described in order to establish a gap about what has not been covered by the literature. In addition, the chapter also covers areas such as; objective of the study (both general and specific), research questions, the scope of the study and significance of the study.

Chapter two dwells on the literature review that covers both the theoretical and the empirical literature reviews. In the theoretical part, definition of terms, theoretical arguments and study related theory and model are critically discussed. The study adopted the urban land market model and the value model as the theories underpin the study. The empirical part discusses t the findings identified by the previous studies that helped in establishing the research gap and developing the conceptual model of the study.

Chapter three in particular describes the methodology adopted by this study whereby cross-sectional research design was adopted. In addition, this chapter explains about

the study area and the reason why the area was selected, the study population, sample and sampling procedures, the data collection techniques and type of data that collected, a data analysis approach whereby the logistic regression model is used to explain how the relationship among the variables were established. At the end of the chapter, data validity, reliability and research ethics are also explained.

Chapter four focuses on the presentations of the study findings that are grouped into descriptive results, bivariate results (correlation analysis) and the finding from the models (multivariate results). The implications of these findings are then addressed in relation to what was revealed. However, the findings in this case are organised according to the research objectives.

Chapter five on the other hand, covers the discussion of the findings. In this part, the findings are discussed in line with the study objectives so as to establish how the objectives were attained and then related them to the findings from the previous studies discussed in the literature review.

The last chapter is chapter six. This chapter presents the summary of the study that summarises the whole study and the key findings identified. It also presents the conclusion of the study in relation to the study findings, policy implications that provides recommendations to the concerned agencies or organs, the limitations of the study and the area for further studies, is also identified.

CHAPTER TWO

LITERATURE REVIEWS

2.1 Introduction

The literature review is divided into two main parts; the theoretical literature review and the empirical literature review. In the theoretical literature review issues that are covered include; the definition of terms and concepts, the theoretical arguments and the theoretical model and study theory. In the empirical part, previous studies are critically reviewed that helped to establish a research gap and to develop the conceptual model.

2.2 Theoretical Literature review

2.2.1 The National Land policy

The land use and changes in Tanzania is governed by the land policy of 1995 and the Land Act that enacted in 1999 and the Land Law of 1999 that become operational in 2001. The policy clearly defines the land tenure and enables proper management and allocation of land in the urban and rural areas and provides a clear position on customary land tenure in the light of profound economic and social reforms. In that regard, the policy elaborates issues that are considered to:

- Accommodate changes in land use and increase in human population,
- Control large stock population which increases demand for grazing land and creates serious land degradation and
- Protect the environment from extension of cultivation to marginal areas.

Apart from that, the Land Policy also is geared to; reduce conflicts in land use between agriculturalists, livestock keepers, forest areas, wildlife areas, water sources and miners; provide for increased urbanization requiring lands for settlements, industries and commerce and preserve valuable agricultural land; and facilitate prospective investors who require land as a result of liberalization of the economy and investment promotion.

It also elaborates areas concerned to protect individual land rights under a pluralistic political system since 1992 and accommodate Appeal Court decision affirming customary land tenure rights of the local people(National Land Policy, 1995).

Despite, the issues that are explained in the land policy, land use changes still take place in various parts of the country of which some of the changes do not follow the original plan and some are taken locally without following the appropriate land change procedures. In that regard, the proposed study will also assess the (People Affected by the Project) PAP knowledge on land policy and on how the policy influences land use changes in the urban area.

The land policy is also supplemented by the Land Law Act No.4 and Village Land Act No.5 passed by Parliament in 1999 that become in operational in May, 2001.

The new Land Policy of 1995 and Land Law of 1999 represent a turning point in the development of Tanzania. While, the enforcement of the Land Law gives substantive push to Government economic and social development objectives under the liberalized free market economy and poverty eradication strategy and the realization of the National Development Vision 2025.

2.1.2 Determinants of land use changes in urban area

Theoretically, the determinants of land use changes in urban areas are so many, but they can be categorised into six categories; social, cultural, economic, environmental, infrastructure and institutional factors (Antrop, 2012).

The social and the economic factors can also be combined into socio-economic factors that can be explained in the area of sociological, geographical, and economic perspectives. To the sociologist, it is the human being, his psychology, which is the key to the process structure and pattern(Brueckner, 1987) Other specific social factors influencing land use are quality of neighbourhood, security, prestige, taste, and ethnic

and social factors. The geographical factors that are considered include relief, elevation, climate, location and geology(*ibid*).

Apart from that, the factors are related to economic because of the issue of scarcity, demand, nature of use, agglomeration economies, expected revenue, speculation and intervening opportunities (Appiah, *et al*, 2014). It also argued that change in the type of land use is affected by change of land prices, ability to pay and the extent to which the piece of land is exploited.

On the other hand, the cultural factors that are likely to influence land use changes include ethnic origin, religion and tradition (Appiah, *et al*, 2014). Rapoport (1977) noted that individual aspiration to achieve culturally derived satisfaction, also affect land use.

Environmental factors that are cited to influence the land use changes include; nature of environment, climate, soil, topography, drainage and quality of water bodies(Joseph, 2009). For example, topography affects amenity ranking though this could vary from family depending on their composition and preference. Topography could have a bearing on land use through its effects on development cost(*ibid*). Also, the nature of existing land uses, such as seaport, airport, institutions and business areas, which generate employment increase demand for land, chance some of the available land will be transformed to suit the need. (UEDA, 2011). These environmental factors can have positive effect that contributes for improvement or negative effectthat may damage the ecosystem on air, water bodies and the decrease in land fertility (Elbarmelgy, Nasser, & Ali, 2014)

Critical to the urban land use decision is also the level of infrastructural facilities in different parts of the city (Litclifield, 1974). The infrastructure variables sometime referred to as urban variables as according to Elbarmelgy, et al (2014) can further be grouped into roads and transportation network, development desnity and public services in the area and land uses. The influences of these factors have been supported by Antrop (2012)in his study in Lagos during which he attempted a study on the

spatial interaction and structure of Lagos. Also in a study by Echevarria (2010)), during which he established the land value trend in Canada, the influence of infrastructural facilities was also confirmed.

Basically, accessible roads, good drainage, electricity and public water supply are critical infrastructural factors that are central to land use changes in urban areas (Antrop, 2012). Where these facilities are adequately available, the land demand will be higher in that area.

Institutional factors that are central to land use changes in urban areas include; local customs, traditions' law, organizations and other institutions of human society. However, the planning factors such as the master plan, zoning regulations, rent laws, land acquisition policies, sources of title and type of tenure also falls in the institutional factors that are paramount determinant of urban land use changes (Joseph, 2009).

A bit different from the above discussed categories, is the classification provided by Elbarmelgy, Nasser and Ali (2014) that include; geographic variables, environmental variables, economic variables, public interest variable, social variables, law and logistic variables, urban variables and demographic variables. On the geographic effects such as climate, they argued that such effects have a clear influence on the type of use, but the effects may appear overtly on both the world and the country level while, they may not appear on urban level. On public interest variables, the authors contended that they are related to economic and social values of individuals and groups. The factors also include the way how the public intervene the by-laws on its impact on structuring and restricting of land use. The factors also include the key elements such as public health, safety, convenience, economy and amenity. On the demographic factors, the authors discussed the influence of population growth (size) marital status, sex and education level of the people available in the area

However, in relation to the current study, the factors were grouped into three categories because of the issue of data availability and the nature of the research design that was adopted. In this regard, the economic, social and cultural and infrastructural factors discussed include; the socio-economic category; the geographical and environmental factors discussed in the environmental factors while, the institutional factors that will be considered is only the governmental factors.

In common, the theoretical arguments base the concept of land use changes by relating it with economic, social, governmental, demographic, geographical infrastructural, institutional, and people's interest factors . In each case, the arguments establish the indicators that are measurable. Despite the fact that the concepts establishes the relationship of land use changes with the above mentioned factors, but all of these factors can be reduced into three major one. For instance, the infrastructural factors can be combined into the economic factor, the demographic and the institutional factors can be combined in the social factors while the geographical factors can be combined into the environmental factors. However, all of the previously mentioned factors cannot be stated at once in a single area due to the difference in area, nature of the study and the target population. In that regard, some of the factors were ignored in the current study because they were not in the scope.

2.1.3 Urban land market models

Economists have developed simple models designed to represent the economic forces at work in urban land markets. These models are highly simplified versions of what are actually very complex systems(Cheshire & Vermeulen, 2009). The primary value of these models is to illustrate how individuals may behave and how properties may be affected in urban land markets, and to identify potentially interesting questions to be explored through empirical research(Cheshire, *et al*, 2009).

The models also recognize the influence of factors such as alternative uses for the land, the mobility of residents, the complexity of the primary commodity associated

with land (housing), and possible effects that are external to the markets on urban land market (Michael & Palmquist, 2011).

The issue of housing is an important factor in the model because it is regarded that individual's satisfaction on the land is driven by a number of goods he/she consumes including housing. In this case, housing is a spatial good because location affects the level of services and the cost of the services (Feng & Yun, 2008). When an individual chooses a particular house, the person chooses not only the physical structure but also a physical location, the attractiveness of which is affected by, among other things, the quality of the surrounding environment. In addition, if one lives further out from the center, transportation costs are greater. They are less the closer one lives to the centre (Brueckner, 1987).

However, the application of the model in this study is based on how it explains the urban land market, though it doesn't clearly explain the factors that influence land use changes. Therefore, to compliment its limitation, the study also used the value model to explain land use changes. The value model overcomes such limitations through relating the issues of land demand (value) and land use changes. In this model (value model), the factors such as economic, environmental, social, demographic, urban features and people interest are discussed. The thorough discussion of the value model is done in the following section.

2.1.4 The value model

The model explains and analyse the relationship between land values and land use. In examining the land use, the factors such as geographic, economic, urban, social, environmental, public interest, political, demographic, laws and logistic variables are examined as the influential for land use changes (Elbarmelgy, *et al*, 2014). Apart from that, the model conceptually defines the role of the land value as a tool to control land uses and their impact on the development process as a whole. The model also defines the issue of sustainability of land development by identifying the most significant variables that affect land use structure (Gwamna & Yusoff, 2015).

It is also contended that the model is a mathematically based model that simulates future land use and which offers an integrated view on all types of land use. Thus, through defining the factors influencing land use, it distinguishes the land use categories that fall into residential, commercial, educational, medical, social, recreational and cultural. The model is a variable based, covering all types of uses, where each type of use is affected with group of variables (Elbarmelgy, *et al*, 2014). Unlike many other land use models, the objectives of the value model are not forecasting the dimension of land use change, but rather to integrate and allocate future land use claims from various sectoral models. The results of the model should not be interpreted as a fixed prediction for a particular location, but rather as a probable spatial pattern (Ready & Abdalla, 2003). The land use model employs the equilibrium principle to balance the need for various land use functions with the supply of suitable land (Brueckner, 1987). Following the limitation of each of the model, both of the two models were used to inform the current study because they complement each other. For instance, the urban land market model explains land use changes basing on the demand side of land while, the value model adds some factors such as geographic, economic, urban, social, environmental, public interest, political, demographic, laws and logistics determinants of land use changes

2.2 Empirical literature review

In this section, a number of studies have been reviewed citing the reference from different parts of the word the aim being to establish the research gap through identifying the factors that are inadequately covered by the literature.

Mdemu, et al. (2012) examined the dynamics of land use and land cover changes in the Pugu and Kazimzumbwi Forest Reserves. In this study, the perceptions of local people on historical changes and drivers for land changes were also collected from three neighbouring villages and integrated in the assessment. The analysis was augmented by statistical analysis of 30 years historical rainfall and temperature records from Dar es Salaam and Kisarawe Climatic Stations. In the GIS analysis, the study found that the changes are driven by population increase in the peri-urban areas,

anthropogenic activities associated with population pressure in pursuit of demand in peri-urban and urban areas and climate change and variability which intensify resource extraction from the protected forests.

The study also found that observed change and variability from the statistical analysis of 30 years records of rainfall and temperature for Kisarawe and Dar es Salaam are consistent with the community's perception of climate change and variability indicated by declining and unreliable rainfall trends, increasing temperature and increased incidences of droughts over the last ten years.

Masanja (2013) examined the drivers of land use changes in peri-urban area of Dar Es Salaam City in Tanzania. The drivers assessed in this case include; government policy, urbanisation, land tenure system, technological development, microeconomic changes and the land market. On the issue of government policy, the study established that it is a major driver of land use changes in the peri-urban areas in Dar Es Salaam. On the other hand, the ordered logistic regression results showed that urbanization, land tenure system, technological development and the macro-economic changes and the land market are also important factors that significantly influence land use changes in the peri-urban areas.

Ngailo, Kaihura, Baijukya and Kiwambo (2013) explored the land use changes and their impact on agricultural biodiversity in Arumeru Tanzania. This was driven by the observation that each time the growth per unit area in numbers of animal and human population in the district has contributed to decreased size of the average farm size for both cropping and grazing and the change in biodiversity in the area. The results showed that the changes have negatively resulted into the reduction of species diversity due to degradation and over exploitation while the positive changes were observed on the introduction and intensification of cropping of some crop species. It was also observed that sustainability of the farming system and biodiversity has been enhanced through peoples' efforts that include planting trees, use of fertilisers mostly

on high valued crops such as round potatoes and other horticultural crops and conserving soils erosion.

Nzunda, Munishi, Soka and Monjare (2013) assessed the socio-economic drivers of land use and vegetation cover changes and the extent of land use/cover change in and around Kagoma Forest Reserve (KFR), Tanzania. Household survey, field observations and focus group discussions were used to obtain socio-economic data that influence land use and vegetation cover changes and logistic regression model was used to establish the relationship between socio-economic drivers and land cover change. The socioeconomic factors which were considered and tested using binary logistic regression model include increase of livestock keeping, education level, population immigration, prices of cash crops, land rights or land tenure, shifting cultivation, demand for forest products and farm increase. All of these factors were revealed to be significant except the education level and change in population.

Oduwaye (2013) explored the urban planning implications of changing land use structure of Metropolitan Lagos, Nigeria. In his study, the researcher focused on the economic, sociological, cultural, environmental, infrastructure and institutional dimensions and their implications in land use development of the Lagos City. The land use type examined in this study includes; residential, commercial, industrial, educational and institutional, religious, circulation, parks and recreational land uses. In establishing the relationship, the analysis and principal component analytical techniques were used and the results showed that infrastructure and economic factors are the major factors influencing land use in Lagos. Also, the study tested the influence of the factors by running the zero-order correlation matrix and the results showed that there is a high level of correlation among the variables influencing land use of Lagos.

Ready and Abdalla (2003) applied the hedonic price analysis and the GIS analysis to examine the impact of land use and potential local areas on residential property values Berks County, Pennsylvania. The analysis through hedonic price focused on

residential, commercial or industrial uses. The hedonic house price regression showed that, within 400 meters of the house, the land use that contributed to the increase in price are open space, singlefamily residential land, commercial, small-lot single family residential, and multi-unitresidential

Swangjang and Iamaram (2011) assessed the change of land use patterns in the areas close to the airport development area and some implicating factors in Nigeria. The analysis was done using GIS, whereby the land use patterns are categorized into intensive urban development land, areas developed under environmental conditions, and natural land. The study also analysed the steps of land use changes, land use planning and related factors concerning the number of population, dwelling units and factories using logistic regression analysis and correlation analysis. The results showed that urban development areas developed under environmental conditions has a significant correlation ($P < 0.05$) while, the natural land which is typically grassland and watercourses changed insignificantly ($P > 0.05$). The results also showed that, the changes were influenced by urbanization of the areas where the airport and the Integrated Town and Country Planning.

Briassoulis (2014) explored the factors influencing land use changes in United Arabs Emirate. The study focused on the land use cover changes and it was established that the land use cover changes is generally by the combination of influenced by biophysical and sociaety factors. Specifically, the study found that the biophysical factors that influence land use changes are; climatic cahange, wheather, topography, bedrock and soil type and the availability of surface water and ground water. In addition to that, the study also included the site specific conditions in the anlysis and it was established that accessibility, landesque capital, regional land-use structure, land tainure sytem and land managemnt practices, influence land use changes. On the other hand, the study found that the social factors that influence land use changes are size of the household, age, gender, education, employment. Attitudes, values and personal traits of a household meber. The choice of land use and decisions to change it are influenced by

the size of the household, age, gender, education, employment, attitudes, values, and personal traits of household members.

Lee (2016) examined the factor affecting land use changes in urban-rural fringe in China. The study focused on the sequence of land conversion particularly from agriculture land to urban land uses. The study also put an emphasis on integrating the policy issues in land use changes. The study employed the linear regression model and upon analysis, it was found that the factors that influence land use changes include; site qualities, regulatory measures, the individual characteristics of the land owner (age, marital status and education level), availability of public services, accessibility and developer initiatives. However, the most significant factors were; the existence of public services such as elementary schools and major interstate road access.

Different from other previous studies, Farajollahi (2016) assessed the socio-economic factors that influence land use changes in Iran in the perspective of land owners and experts. The data collected from 310 land owners and 42 land experts using survey questionnaires. On the land owners perspective, the study found that the most significant factors that influence land use changes are; high cost of living, low income level for rural families, and unemployment in rural areas. On the land experts perspective, the results revealed that the high cost of living and the high value of farmland price, were the most significant factors that influence land use changes. In addition, it was also found that economic factors were the key priorities of land use change. It was also indicated that experts had the necessary experience and understanding of beneficiaries' condition and were positive and important notes for policy making and management issues.

Apart from that Jun (2008) conducted an explanatory study to establish the economic, social and environmental impacts associated with land use changes in urban areas in Ethiopia. The study focused on the positive impacts and it was established that the land use changes has resulted into equipment sharing, land and house renting,

custom work, improvement in irrigation system, information sharing and formal and informal business development among neighbours. It was also revealed that the development that take place as a result of land use changes has contributed to the divergence between private and social costs for some land uses that resulted into an inefficient land location, hence high land demand. However, the the focus of the current study is on the factor that influence land use changes, that is to say it focuses on the causes while, the previous focused on the effect. Despite, the focus of the previous study, but something was learnt from it, that is the effect of the current study can also be used as the causal for another study.

Topçu (2009) explored the factors influencing land use changes basing on the accessibility factors in instanbul. The accessibility factors considered in that study were; location, distance from the central business district, spartial integration values, distance from the major businesss development (new development) and distance from tha sanitary services. The findings established that, distance from the central business district, spartial integration values and distance from the major businesss development (new development) are the strong significant determinant of land use changes while, other factors such as location, and distance to the sanitary services revealed to have no any statistical influence. The findings are also similar to the study conducted by Kahraman and Kuba (2014) who analysed the influence of accessibility factors on land use changes. The difference from the previous is that, the study focused on the distance to the sea, distance to the cultural facilities, distance to the recreational services and distance to the main pedestrain that all of them revealed to be statistically significant. However, these studies has helped to establisht how the accessibility factors have influence on land use changes but the current study will only focus on the distance to the municipal area and location factors.

Kolowe (2014) explored the determinants of urban land use changes basing on the property values factors in Rwanda. The study employed a Hedonic theory to map the relationship. The factors were grouped into; structural characteristics of house for rent, environmental and household characteristics and neighbourhood characteristics. Upon

analysis, it was generally established that the factors have strong influence on land use changes. In addition to that the study specifically indicated that the availability of drinking water source, nearest to the market, availability of transport facilities, availability of street loads and availability of social services like schools and hospitals influence land use changes in urban areas.

2.3 Research gap

The literature in common explains how a land use change is influenced by economic, social, environmental, governmental, demographic, geographic infrastructural (urban factors) and people's interest factor. However, the detailed explanation of the factors that is broken down into measurable characteristics such as land value, location, distance from the city centre, accessibility, population etc. are inadequately explained in the literature. In this regard, the current study filled the gap by grouping the factors in three categories that is socio-economic, environmental and governmental factors and the detailed breakdown of the factors into measurable variable is considered. The current study also observed that the previous studies have not explained the issue of land use changes in relation to the value model and urban land use model in the theoretical perspective, thus the current study filled the gap by discussing the problem while relating with the theoretical models as explained in the theoretical reviews. Though there are some studies that have been conducted in Tanzania for instance the study of Masanja (2013), Mdemu (2012) and Msoffe (2011), the findings in this study are inconclusive and anecdotal.

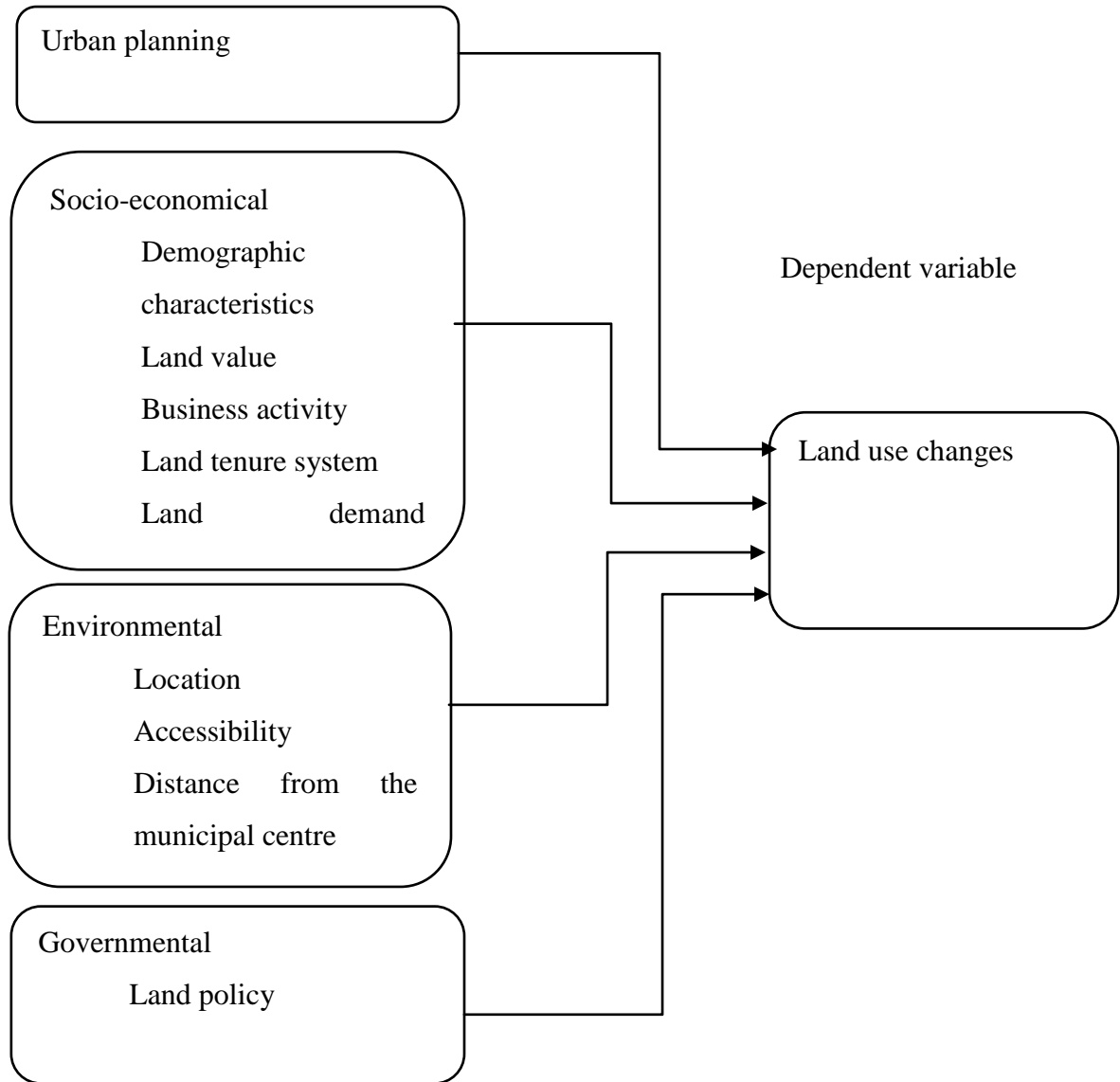
2.4 Conceptual framework

Due to the nature of the problem that is "assessing the factors influencing land use changes in urban area", the study adopts the causal effect relationship model. In this conceptual model the predictors that are the causal are assessed against the outcome that is the effect (land use changes). Following that, the econometric model was also be adopted to test the statistical relationship between the predictors and the outcome.

Therefore, land use changes that was measured in binary outcome (increase in land use or decrease in land use) is the outcome of the study (dependent variable) that was then tested against the socio-economic, environmental, governmental and urban planning as explained in the study objectives. However, in this case, the factors have been selected by considering the easiness in measurement through econometric model. In addition to that, the predictors (independent variables) were broken down in measurable components as shown in Figure 2.1 of the conceptual model.

Figure 2. 1: The conceptual model1

Independent variables



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology is an important part of the research because it explains how the research will be carried out. The good design of the research methodology predicts the suitability of the study in solving a particular problem. Therefore, this chapter describes the methodology that has been adopted by the study basing on the study design, study area, sampling technique, and sample size, source of data, data reliability and data collection techniques as well as data analysis. At the end of the chapter, the ethical consideration is also discussed.

3.2 Area of the study

The study was conducted in Mwanza city, particularly in Ilemela municipal at the planned Area block “A” Buswelu and block “B” North Buswelu. The choice of the area is grounded by the reason that it is a new planned area whereby the land has been transformed from agriculture and forest to settlements, recreation, business and industrial. The selection of the area was also attributed by the reason that it was easy for a researcher to contact the target population because the researcher is one of the surveyor in the municipal who surveyed the area. Also, the area was selected because of time and cost minimisation constraints rather than travelling in other surveyed area outside the region.

3.3 Research design

Basing on the nature of the problem, a cross sectional research design was adopted in this study. The reason of choosing the design is provided by Creswell (2013) who described that the purpose of cross sectional design is to generalize from a sample to a population in order to make inferences about some characteristic, attitude, or

behaviour of the entire population. The design was also adopted because the problem is meant to survey more than one planned area in Ilemela Municipal to get the required information, thus a cross sectional design is appropriate whereby the data were collected once at a time. With this type of design, the entire population or a sample is selected from the population if it is large and the common method of data collection instrument is a survey questionnaire though other instruments may also be used (Olsen and George, 2002).

3.4 Target population

The target population of the study is the urban planned residential area for the 1400 plots located at Buswelu (block “A” Buswelu and block “B” North Buswelu plots) ward in Ilemela Manicipal council. These are the areas that have been transformed from agricultural to other land uses such as settlement, business, recreational and industrials. The unit of analysis was theplot ownersin the planned areas that is Buswelu A and North Buswelu. Therefore, the total target population of the study is 1400 plot owners assuming that each plot is owned by one person

3.5 Sample and sampling procedures

3.5.1 Sample size

A sample is a unit of representatives that is selected from the population in order to make generalization of the findings for the entire population (Creswell, 2013). However, there are several approaches of calculating the sample size for both the known and unknown population. Since, the target population of the current study was known and expected to have all information needed for the study objectives, then Yamane (1967) formula was used to draw a sample size as follows;

$$n = \frac{N}{1 + Ne^2}$$

Where; n is the expected sample size, N is the study population that is 1400 and e is theprobability random error that is 5%.

Then, the sample size will be

$$n = \frac{1400}{1 + 1400 * 0.05^2} = 311$$

Therefore, the sample size was composed of 311 plot/land owners and households (for the areas that have been developed into settlements)

3.5.2 Sampling procedures

On the other hand, sampling procedures are techniques that are applied in obtaining the sample, and these can either be probability sampling procedures or non-probability sampling procedures depending to the type of the population (Saunders, 2009). Therefore, probability sampling was applied in this study. Probability sampling procedures, especially simple random sampling was applied in selecting the plot owners in the area of the study of which each individual was having equal chance of being selected.

Within these plots, there were some plots that have already been developed in settlements, business and recreational, and others have not yet developed. Also, there are plots that have been changed the use from either residential to business or into any other activities.

3.6 Data collection techniques

Data were collected from both secondary source and primary sources of data. For the case of secondary source, data were collected via the urban planning project implementation reports, and literature review that is already done in both the theoretical and empirical literature review while primary data were collected from the field via interviews and questionnaires.

3.6.1 Questionnaires

Closed ended survey questionnaires were prepared to guide the respondents to select a set of choices offered explicitly by the researcher. This technique was chosen because it does not exert pressure to the respondents; meaning that, they were free and

comfortable in answering the questions (Kothari, 2004). This method was applied to obtain the findings from the plot owners. The questions were simple and clear based on the binary or Likert Scale responses.

3.7 Data analysis

Data were processed through manual sorting by editing, coding, classification and compilation. Finally, all data were summarized on data masters sheet for analysis. Before analysing the collected data, the input was done using SPSS and the variables were transformed to dummy variables of “1” and “0” outputs for “Yes” and “No” responses and the continuous variables were transformed to natural logarithms (ln). The output was saved as STATA output document in order to test the model fit.

3.7.1 Model specification .

The study employed a logistic model in the estimation for analysis. The reason for adopting the logistic model is based on the nature of the dependent variable that is assessed binary outcomes as according to the World Bank format outcomes (Addo & Choudhury, 2012). The selection of the model is also based on its flexibility and robust in the violation about the assumption of data (Cooper, Gimeno-Gacson, & Woo, 1994). The model is a non-linear regression model that forces the output of 0 and 1. It is mathematically represented as follows;

$$p(y = 1) = \frac{(e^{\beta_0 + \beta_1 X})}{(1 + e^{\beta_0 + \beta_1 X})}$$

Source: (Newsom, 2015), Logistic regression

The model is then transformed to linear equation by applying log in both sides to become a logit model as follows;

$$\log \left[\frac{p(y = 1)}{p(y = 0)} \right] = b_0 + b_1 x_1 + b_2 x_2 + \dots + b_n x_{n1}$$

therefore, by specifying the variables, we get;

$$\log \left[\frac{p(lus = 1)}{p(lus = 0)} \right]$$

$$= b_0 + b_1 Sx + b_2 Ms + b_3 Ag + b_4 El + b_5 Lv + b_6 Ld + b_7 Ba$$

$$+ b_8 Lts + b_9 Lc + b_{10} Ac + b_{11} Dc + b_{12} Gp + b_{13} Ass + b_{14} Up$$

where by

	Lus =	Land use	
	Up =	Urban planning	
	Sx	Sex	
	Ms =	Marital status	
	El =	Education level	
	Ag =	Age	
The	Lv =	Land value	probability
changes	Ld =	Land demand	between 0
and 1 and	Ba =	Business activity	the odds
can be	Lts =	Land tenure system	greater than
1. However,	Lc =	Location	the odds are
usually	Ac =	Accessibility	used
because of	Dc =	Distance from the	complexity
in	Gp =	city centre	explaining
the odd	Ass =	Government policy	ratios.
		Access to social	
		services	

Therefore, the odds are given as; $\log \left[\frac{p(y=1)}{p(y=0)} \right]$

Because the model is expressed as the logistic regression model, then dummy variables were created through transforming for each of the independent variable that reflected the original variables with outcome of 1 and 0 for both Yes and No outcomes. In addition, for the variables that were continuous (scale measurement), they were first transformed to natural logarithms and then tested together with other variables.

3.7.2 Coding and measuring the study variables

For easy analysis, the study variables should be coded and measured, thus Table 3.1 shows how both the dependent and independent variables were measured

Table 3. 1: Coding and measuring of the study variables

Variable	Measurement	Coding
Land use 1	Nominal	1= settlement , 0 = otherwise
Land use 2	Nominal	1 = Business, 0= otherwise
Land use 3	Nominal	1= Industrial, 0 =otherwise
Urban planning	Norminal	1=adherence to the urban planning, 0= Otherwise
Sex	Nominal	1=male, 0=female
Marital status	Ordinal	1=married, 0= Otherwise
Education level	Ordinal	1=no formal education 2=primary, 3=secondary 4=college certificate/diploma 5=university degree and above
Age	Continuous	Age in years transformed to natural logarithms
Land value	Continuous	Values inTshs transformed to natural logarithms
Land demand	Nominal	1=High, 0=otherwise
Business activity	Nominal	1= availability of business activities, 0= not available
Land tenure system	Nominal	1= Right of Occupancy 0= Otherwise
Location	Nominal	1=near highway 0=otherwise
Accessibility	Nominal	1=accessible 0=not accessible
Distance from the city centre	Continuous	Transformed to natural logarithms in kilometres
Government policy	Nominal	1=implementing the land policy 0=otherwise
Access to social services	Nominal	1=enabling the community to better access to social services, 0=otherwise

3.8 Validity and Reliability of the study

Validity in research is the issue of how valid the research is, in other words, how logical, truthful, robust, sound, reasonable, meaningful and useful the research is (Quinlan, 2011). However, validity in the proposed research was done through pilot study in the selected area. This was done before the actual collection of data in order to

see if the proposed questionnaires fit with the objectives and approaches of the study. This was done in order to test the length of the questionnaire, quality of the questionnaire, and suitability of the responses according to the objectives of the study (Winterstein, 2008). That is to ensure respondents understand the questions in the questionnaire in order to avoid any problem in responding to the questions (Dawson, and Catherine, 2002). Any deviation from the objectives was noted and the questionnaires will then be adjusted accordingly. The results of the pilot study helped to remove all ambiguities that were likely to be difficult for the land owners to understand. It also helped to translate the questionnaires from english to swahili after identifying that there were some difficultie in understanding by the majority of the land owners.

On the other hand, reliability is the level at which results are consistent over time and a precise representation of the entire population under study (Joppe, 2000). The researcher used a test-retest method to ensure accuracy of the data .Lewis (2009) asserted that a test-retest method assures equivalent observations are found by changing the times and places the observations are made.

Reliability of the instrument was also be sought through a set of questions given to a group of clients as a pilot testing; to test scores correlation to each other and demonstrated repeated information. Therefore, the scores ensured the researcher that the instrument is consistent enough to collect correcting formation.

3.9 Research ethics

In conducting this study, the guideline as per Mzumbe University guideline on ethical considerations was adhared in this study. First, the resercher ensured that he get a permission for data collection that was done through requesting an introduction letter from the Mzumbe University Management. During the data collectionprocess the researcher discussed the questions with some of the participants in order to ensure that they know exactly what is expected from them together with the costs and benefits before participating in this study.

The researcher also addressed freedom in participation whereby participants were voluntary and free to take part or withdraw from the study. The purpose of the research and its duration was explained to participants and the data obtained were treated with high level of confidentiality.

The respondents were also ensured that the data are not used for any purpose other than academic and this was explained to the participants and when required the letter of introduction from Mzumbe University was shown. In addition, all sources that used and assisted in accomplishing the purpose of the study, were acknowledged and listed in the list of references

CHAPTER FOUR

PRESENTATION OF THE FINDINGS

4.1 Introduction

The purpose of the study was to assess the factors influencing land use changes in urban area. To realise that, the study selected urban planning projects (Block “A” Buswelu, and Block “B” North Buswelu) in Ilemela Municipal in Mwanza City. The purpose of the study was also realised through the following research objectives;

- To examine the relationship between urban planning and land use changes in urban areas
- To identify social-economic factors that influence land use changes in urban areas
- To identify the environmental factors that influence land use changes in in urban areas
- To assess the influence of the government on urban land use changes

Therefore, this section presents the findings that are categorised into three major areas; the descriptive results, zero order correlation matrix, and; logistic regression results. However, in each case, the results are presented according to the research objectives.

4.2 Results

4.2.1 Demographic characteristics

The demographic characteristics of the respondent included in this case are; Sex of the plot owner, age, Marital status of the plot, Education level of the plot and location the plot. The results as presented in Table 4.1, show that the majority of the plots owners are males that make a composition of 83.3% while, only few are females with a composition of 16.3%.

For the case of age of the plot owners, the results show that various age groups own plots in the selected area except those who are below 18 years old. However, the group that shows a big number of ownership is that with age between 30-45 years that is

distributed by a proportion of 68.9%. This may be true because at that age, majority are employed (private or public sectors) and some are self employed so they generate income that may enable them to buy plots and develop them into various uses. On other hand, the age group between 46-60 is ranked second with a proportion of 23.8% while other groups are distributed with small proportion.

Marital status was another demographic characteristics considered in this case. The results show that the majority of the plot owners are married, that is distributed by a proportion of 63.6%. This may be attributed by the reason that, the married group in the society is the one who are the majority of people with family responsibilities, so they are likely to own plots either for housing their families or to develop the plots into other activities so as to meet the future needs of their families either through income generating activities or for future family member's inheritance. Other groups are distributed with small proportion with a slightly small difference from each other.

Another demographic characteristic considered in this case is the education level of the respondent. The results show that, the owners have attained different levels of education. However, the majority of them have attained college education (certificate or diploma) that is distributed by 51.9%, followed by those who attained university degree or above that is distributed by 20.9%, secondary education distributed by 10.2%, primary education distributed by 6.0%, while those who didn't attain any formal education are so few by a proportion of 1%.

Location of the house/plot was another demographic characteristics of the population. However, according to the area of study, only two areas; Buswelu A na Buswelu B were the focus. The results show that many plots are located in Buswelu A that is 52.8% of the plots while, Buswelu B has 47.2% of the plots.

The last factor that distinguished the population is the distance from the Municipal headquarter. The results show that a big number of the plots are within the

manageable distance that is between 0 - 1.5 kilometres while, there are only few that are located above 1.5 km

Table 4. 1: The demographic characteristics of the Plot Owners

<i>Demographic characteristic</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative</i>
Sex			
• Female	Fem 51	16.7	16.7
• Male	Male 254	83.3	100.0
Age of the respondent			
• Below 18	Belo 0	0.0	0.0
• 18-29	18- 11	3.6	3.6
• 30-45	30- 204	68.9	72.5
• 46-60	46- 73	23.8	95.3
• Above 60 years	Abo 17	4.7	100.0
Marital status			
• Single	Singl 14	4.6	4.6
• Married	Marr 194	63.6	68.2
• Cohabited	Coha 35	11.5	79.2
• Separated	Sepa 42	13.8	93.4
• Widowed	Wid 20	6.6	100.0
Education level			
• No	No 3	1.0	1.0

formal education					
•	Primary education	Prim	49	16.0	17.0
•	Secondary education	Seco	31	10.2	27.2
•	College Certificate/Diploma	Coll	158	51.9	79.1
•	University degree or above	Univ	64	20.9	100.0
House/plot location					
•	Block "A" Buswelu	Bloc	161	52.8	52.8
•	Block "B" North Buswelu	Bloc	144	47.2	100.0
Distance from the municipalheadquarter					
•	0 - 0.50 Km		81	26.6	26.6
•	0.51 - 1 Km		104	34.1	60.7
•	- 1.5 Km		91	29.8	90.5
•	1.51- 2 km		29	9.5	100.0

4.2.2 Descriptive results

4.2.2.1 The relationship between urban planning and land use changes in urban areas

In this case, a series of three questions were asked to the plot owners. The questions include; perception of plot owners of the influence of urban planning projects on land use changes; the contribution of land demand on land use changes and; the perception of plot owners on the municipal officials adherence to urban planning procedures for land use changes. The results are shown in Table 4.2

Table 4. 2: The relationship between urban planning and land use changes

<i>Question</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Cumulative</i>
Perception of plot owners on the influence of urban planning projects on land used changes			
Not at all	12	3.9	3.9
Low	65	21.3	25.2
Average	109	35.8	61.0
High	102	33.4	94.4
Very high	17	5.6	100.0
Contribution of land demand on land use changes			
Not at all	19	6.2	6.2
Low	83	27.2	33.4
Average	104	34.2	67.6
High	87	28.5	96.1
Very high	12	3.9	100.0
Adherence of municipal official to urban planning procedures for land use changes			
Yes	123	40.3	40.3
No	182	59.7	100.0

4.2.2.2 The social-economic factors that influence land use changes in urban areas

On the influence of social economic factors on land used changes, the study prepared a list of expected factors that a plot owner was required to tick if he/she thinks that it influences land use changes. The factors included here are; increase in land value, increase in business activities, location of the area, land tenure system, land demand

for various uses such as settlement, business or industries; easy of access to social services such as water, health services and schools and; the education level of the owners. However, the location and distance factor have already been discussed in the demographic characteristics section.

The perception on the increase in land value on how they contribute to land use changes shows that the plot owner have a positive perception on the factor. The factor is distributed by 72.1% of the positive perception while, the negative perception is 27.9%. Similarly, the land owners have a positive perception on the influence of increase in business activities. The response in this case shows that 65.2% of the land owners have a positive perception while 34.5% have a negative perception on the influence of the factor on land use changes.

On the other hand, the land tenure system received a negative perception by the majority of the plot owners on the influence of the factor on land use changes in urban areas. The results show that the negative perception is distributed by 60.6%, while, the positive perception is distributed by 39.4%.

The results also show that the influence of land demand on land use changes is likely. The results show that the biggest number of the population that is distributed by 71.1% have a positive perception on the influence of land demand on land use changes in urban areas while, 28.9% of the population has negative perception.

Similarly, the results show that the large part of the area is accessible and the population perceive the accessibility factor to have influence on land use changes in urban areas. By percentage distribution, the results show that 60.3% of the population have positive perception while, 39.7% have a negative perception.

Table 4. 3: The influence of socio-economic factors on land use changes

Factor		Frequency	Percentage
The increase in land value			
•	No	85	27.9
•	Yes	230	72.1
The increase in business activities			
•	No	106	34.8
•	Yes	199	65.2
Location of the area			
•	No	39	12.8
•	Yes	266	87.2
Land tenure system			
•	No	185	60.6
•	Yes	120	39.4
Land demand for settlement, business or industries			
•	No	88	28.9
•	Yes	217	71.1
Easy access to social services such as water, health services and schools			
•	No	121	39.7
•	Yes	184	60.3

4.2.2.3 The influence of environmental factors on land use changes

Here, the plot owners were also asked to indicate if they perceive the following environmental factors; easy in accessing the area (accessibility) and location of the area influence land used changes. The results are illustrated in Table 4.4 hereunder;

On the issue of accessibility, the results show that a big number of the population perceive that their areas are easily accessible, that is distributed by a proportion of 87.2% while only few that is 12.8% perceive that their areas/plots are not easily accessible. On the other hand, for the case of location, the results show that the big number of plots that is 94.1% are located in a good area.

Table 4. 4: The environmental factors

Factor	Frequency	Percentage
Easy in accessing the area (accessibility)		
No	39	12.8
Yes	266	87.2
Location of the area (good environmental amanity)		
No	67	5.9
Yes	287	94.1

4.2.2.4 The influence of governmental factors.

The only governmental factor indicated here is policies. However, the Land Policy of 1995, The Land Act No. 4 of 1999 and The Land (Forms)Regulations of 2001. In that regard, the plot owners were first asked if they are familiar with any land policy, act or land regulations, then they were asked to indicate if they perceive the mentioned to have any influence on land used changes. However, people who were familiar with the land policy, act or regulations that is 72.1% of the estimated population; were the one required to respond to the next question that is the perception on the influence of the mentioned on land use changes. The results are tabulated in Table 4.5 below and the interpretation is done after the Table.

Table 4. 5: The influence of Land Policy, Acts and Regulations

Factor	Frequency	Percentage
Awereness on any land policy, act or regulations		
No	139	27.9
Yes	166	72.1
The influence of Land policy 1995		
No	87	34.8
Yes	79	65.2
The influence of Land Act of 1999		
No	52	31.3
Yes	114	68.7
The influence of Land Regulations of 2001		
No	65	39.2
Yes	101	60.8

From the above results, we can establish that still there are some people who are not aware of the land policy, act or land regulations though it shows that a big proportion

that is 72.1% of the population are aware. On the other hand, for the people who are aware, majority perceive that the land policy influence land use changes. The same applies to the land act and land regulations.

4.2.3 Zero order correlation matrix results

In order to be sure that the reported logistic results are valid and robust, a number of tests were conducted such as identification of multicollinearity problem. To test the presence of multicollinearity, a correlation analysis was performed due to the nature and the purpose of the study. The zero-order matrix correlation test is enough to identify any multicollinearity problem. The test is also important to determine the extent to which independent variables (predictors) correlate with the dependent variable (land use changes in urban areas). Following the explained importance of the test, the zero-order correlation matrix was run as shown in Table 4.6.

The results in Table 4.6 shows that there is no any problem with multicollinearity because the coefficient of correlation in each case is less than 0.9. It also shows that most of the factors are associated with land use changes.

Specifically the results show, sex of the plot owner ($p=0.001$, $r=0.304$), marital status ($p=0.018$, $r=0.018$), location of the plot ($p=0.038$, $r=0.307$), land value ($p=0.012$, $r=0.275$), land demand ($p=0.012$, $r=0.033$, $p=0.521$) and accessibility ($p=0.036$, $p=0.214$) are positively correlated with land use changes in urban area. This has an implication that each of the mentioned factors increase land use changes respectively. Apart from that, the results also show that age of the plot owner ($p=0.015$, $r=0.113$), education level of the plot owner ($p=0.001$, $p=0.456$) and distance from the municipal centre ($p=0.006$, $r=0.165$) are negatively correlated with land use changes implying that each of the factor decreases land use changes in urban area respectively. On the other hand, business activities, the land tainure system and land policy do not correlate with land use changes in urban areas.

Table 4.7: Zero order correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Land use changes	1													
Age	.113*	1												
Sex	.015	.304**	.460**	1										
Education level	.001	.000	.000	.264**	1									
Marita_status	.301*	.067	-.080	-.508**	1									
Location	.018	.360	.276	.000	.258**	1								
Urban planning activities	.307*	.288**	.017	-.241**	.435	.343**	1							
Land value	.002	.041	.078	.004	.267	.003	.412**	1						
Business activities	.275*	.359**	.139	-.087	.191**	.340**	.005	.151*	1					
Land tenure system	.012	.000	.057	.235	.009	.000	.074	.074	.039	1				
Land demand	-.022	.147*	.138	.153*	.015	.074	.313	.313	.039	.218	1			
Acessibility	.365	.045	.059	.037	.235	.313	.313	.039	.039	.060	.060	1		
Distance from	.501	.165	.289*	-.023	-.044	-.387**	-.399*	-.210**	.298**	.078	.078	.298**	1	
	.131	.158	.012	.243	.705	.000	.040	.000	.009	.108	.108	.009	.108	1
	.521**	.107	.316**	-.108	-.134	.021	.321	-.178	.126	.009	.108	.009	.108	.078
	.033	.361	.006	.355	.251	.857	.457	.126	.009	.108	.009	.108	.009	.108
	.214*	.250*	-.025	.401**	.165	.203	.454	-.063	-.053	-.122	-.010	-.053	-.122	-.010
	.036	.031	.129	.000	.156	.080	.133	.289	.154	.296	.029	.289	.154	.296
	-.165**	-.022	.085	-.164	-.089	-.095	.066	.134	-.136	.108**	.033	.108**	.033	.073

the municipal centre	.006	.153	.267	.159	.448	.415	.337	.251	.244	.000	.281	.532	
Land policy	.201	-.035	.092	-.265	-.321	-.129	.099	.167	-.118**	.105**	.233	.065	.572* 1
	.168	.153	.299	.291	.653	.341	.447	.329	.001	.000	.541	.522	.032

Source: SPS output

(2016)

Where:

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

4.2.4 Logistic regression results

The logistic regression analysis was conducted in order to test how the predictors explain land use changes in urban areas. The land use changes as a dependent variable was measured in the type of uses as a binary outcome that is 1 represented land use for settlement and 0=otherwise (business, agriculture, and recreations). The independent variables were transformed to dummy variables, especially those with binary outcomes while, the continuous variables; age and distance to the municipal area were transformed to natural logarithms. The results in Table 4.8 show that there is no big difference between the correlation results and the logistic regression results.

Generally, the results show that the model is appropriate with Pseudo R Square of 0.6672 implying that the variation in explanatory variables (predictors) explain land use changes in urban areas by 66.72% variation. Specifically, it shows that age of the plot owner ($p=0.016$, odds ratio=3.6) and distance from the municipal centre ($p=0.023$, odds ratio=0.687) are the only factor that are significant but negatively explaining land use changes in the urban area. Apart from that sex ($p=0.038$, odds ratio =2.2), marital status ($p=0.040$, odds ratio=1.6), location ($p=0.047$, odds ratio=3.021), urban planning activities ($p=0.007$, odds ratio=3.722), land value ($p=0.010$, odds ratio=4.1), the land tenure system ($p=0.038$, odds ratio =5.4), land demand ($p=0.008$, odds ratio=2.03), accessibility ($p=0.009$, odds ratio=1,3) are significant and positively explain land use changes in urban areas.

Different from that, education level of the plot owner, and land policy revealed to have no any statistical influence on land use changes. However, in this case the results show that in correlation analysis, education level of the plot owner was significant and

positively associated with land use changes, but in the logistic regression results, it appeared that the factor is not significant, thus its influence has been reduced by other factors in the model. It was also shown in the correlation analysis results that the land tenure system had no any association with land use changes in urban area but in the logistic regression results, it shows that the factor is statistically significant, thus its influence has been increased by other factors available in the model.

Table 4. 6: The logistic regression results

<i>Logistic regression</i>			<i>Number of observations</i>	=
			305	
			<i>LR chi2 (13)</i>	=
			99.41	
<i>Log Likelihood = -25.563801</i>			<i>Prob > chi2</i>	=
			0.0000	
			<i>Pseudo R2</i>	=
			0.6672	
<i>Community participation</i>	Odds Ratio	<i>Standard Error</i>	Z	<i>p> z </i>
Age	3.634	0.392	0.17	0.016
Sex	2.224	0.631	2.98	0.028
Marital-status	1.602	1.341	0.61	0.040
Education level	0.552	0.624	-0.39	0.686
Urban planning	3.722	1.261	0.97	0.007
Location	3.021	0.611	1.98	0.047
Land value	4.113	1.433	0.82	0.010
Business activities	0.978	1.601	1.63	0.104
Land tenure system	5.435	1.560	2.08	0.038
Land demand	2.034	0.723	0.51	0.008
Accessibility	1.315	0.914	2.60	0.009
Distance from the municipal centre	0.687	0.961	-1.27	0.023
Land policy	1.388	0.665	1.29	0.197
<i>Constant</i>	1.477	3.391	-0.90	0.369

Source STATA (2018)

4.2.4.1 Interpretation of the logistic regression results

Age of the plot owner revealed to be significant and positively explaining land use changes in urban areas. The results also showed an odds ratio of 3.9. The implication is that if the age of the plot owner increases, it increases the odds of land use changes by 3.9 that the increase in age of the plot owner is more likely to increase land use changes by 3.9 controlling other variables.

Similarly, the sex of the plot owner revealed to be statistically significant and positively explaining land use changes in urban area with an odds ratio of 2.2. This has the meaning that there is a difference on the perception of land use changes between male and female groups. It also has an increases the odds of land use changes by a factor of of 2.2.

Also, the results revealed that the marital status of the plot owner is statistically significant and positively explaining land use changes in urban areas.. The results also showed the odds ratio of 1.6 that is higher than 1 implying the the change in marital status of the plot owner is likely to increase the odds of land use changes by 1.6 controlling other variable

Education level of the respondent revealed to have no any statistical influence on land use changes in urban area. This have an implication that there is no any difference in the contribution of education level attained by the plot owner (primary, secondary, college, university degree or higher) on land use changes in urban area. The results also showed the odds ratio is lower than 1 implying that the probabaility that education level of the plot owner increases land use changes is lower than the probability that it doesn't.

For the urban planning activities, the results showed that the factor is also statistically significant and has a positive influence on land use changes in urban areas. The factors also showed to be important with odds ratio of 3.77 that is greater than 1. Basing on the

level of significance, we can establish that the increase in urban planning activities (projects) increases the probability of land use changes in urban areas. On the issue of odds ratio, the results have an implication that urban planning activities increases the odds of land use changes by a factor of 3.77, controlling other variables

Location of the plot revealed to be statistically significant with a positive influence on land use changes. This has an implication that the more the plot is located at a good area the more is the likelihood of contributing to land use changes. The results also showed an odds ratio of 3.0 implying that the probability that a good location contributes to land use changes is higher than the probability that it doesn't contribute by a factor of 3.0, controlling other variables.

Another significant factor was land value that revealed to be positively related to land use changes in urban area that has an implication that the increase in land value increases the likelihood of land use changes in urban areas. The factor also revealed to have the odds ratio of 4 implying that the increase of land value increases the odds of land use changes by a factor of 4, controlling other variables.

Business activities revealed not to be an important factor in determining land use changes in urban areas. The results also showed that the factor received the odds ratio of 0.9 that is lower than 1 implying that the probability that business activities contribute to land use changes is less than the probability that it doesn't contribute to land use changes in urban areas by a factor of 0.9, controlling other variables.

On the other hand, land demand for various uses also revealed to be a significant factor and positively related to land use changes implying that the increase in land demand is likely to increase land use changes in urban areas. This has the meaning as the land demand increases, it increases the likelihood of land use changes. This is true because the land will be demanded for various livelihood activities because the land is fixed in

nature. . The results also showed an odds ratio of 2 that imply that the increase of land demand is likely to increase the odds of land use changes in urban areas by a factor of 2, controlling other variables

Accessibility was another factor that revealed to be significant and positively related to land use changes in urban area implying that the more the area is accessible the more it contributes to land use changes in urban are. The odds ratio for accessibility factor was 1.3 that is greater than one with the meaning that accesibility of the area increases the odds of land use changes in urban area by a factor of 1.3, controlling other variables.

Consequently, land tenure system also revealed to be a significant factor and positively influencing land use changes in urban areas. The factor also showed a high odds ratio of 5.4 that is greater than all other factors. Being significant and positively related to land use changes has an implication that the increase in land tenure system increases the the likelihoodof land use changes in urban areas. On the other hand, with the odd ratio of 5.4 that is very high, has an implication that the increase in land tainure system increases the odds of land use changes in urba areas by a factor of 5.4controlling other variables. This also signifies that the factor is a very important determinant of land use changes in urban area.

Distance from the municipal centre was also among the factors that revealed to be statistical significant but negatively related to land use changes in urban areas. The results also showed that the factor is important as it received an odd ratio of 0.7 that is less than 1. Being significant and negatively related to land use changes, has an implication that the increase in the distance where the plot locatedo/from the municipal centre, decreasesland use changes in urban areas.On the other hand, the odds ratio of 0.7 that is less than 1 have an implication that one units increase in distance to/from the municipal area decreases the odds of land use changes in urbnan area by a factor of 0.7controlling other variables.

The last factor was the land policy. The factor revealed to have no any statistical influence on land use changes implying that the land policy is not an important factor in determining land use changes in urban area. After all the majority of the plot owners indicated not to be familiar with any policy, land regulations or act concerning land use changes. However, the results showed that the factor is important in policy implications as it received an odd ratio of 1.4 that is greater than 1 implying the probability that land policy contributes to land use changes in urban area is greater than the probability that it doesn't contribute by a factor of 1.4

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1 Introduction

This chapter is about discussion of the findings. The discussion is based on what the study has found, thus try to establish how the research objectives have been attained so far. In that regard, the discussion here is categorised according to the research objectives and in each case, it is related to both the theoretical and empirical literature review.

5.2 Discussion

5.2.1 The relationship between urban planning and land use changes

The first objective of the study focused on establishing the relationship between urban planning and land use changes. Here, the focus was on the plot owner's perception about the urban planning activities on how they contribute to land use changes. However, the objective was first analysed through descriptive statistics and then the relationship was tested by running the logistic regression analysis. The descriptive findings generally showed that at average, the plot owners perceive that urban planning activities carried out by the municipal through urban planning projects, contributes to land use changes in urban areas. The logistic regression results also support the descriptive statistics of which it was established that urban planning activities carried out by the municipal council through urban planning projects, increase land use changes in urban areas.

is the findings is also supported by the literature on the study conducted by Joseph (2009), Ngailo, *et al*, (2013) and Masanja (2013). According to Joseph (2009), he established that the urban planning activities that take place in urban areas has contributed to the change of Sukuma land into various uses particularly in settlement uses.

Similarly, Ngailo, et al (2013) established that the urban planning activities has contributed to the environmental amenities and loss of biodiversity when land is converted from farm land to urban planning. Also, Masanja (2013) established that the land development projects that is the result of urban polanninghas affected the land value since the land is demanded for various activities such as settlement, business, and recreations. All of these studies link the urban planning projects with land use changes but they went far by establishing the effects associated with land used changes that were not in the scope of the current study.

5.2.2 Social-economic factors that influence land use changes in urban areas

The second objective was to assess the influence of socio-economic factors that influence land use changes in urban areas. The socio-economic factors in this case included the demographic factors, the social factors and the economic factors that are related to the community. Specifically, the factors are; age, sex, marital status, education level, land tenure system, land value, business activities andland demand. Upon analysis, it was revealed that age of the land owner decreases the likehood of uadopting land use changes, while marital status and sex of the plot owner showed a difference in the perception of the plot owners on land use changes but in each case contributed to the increase in land use changes.

The findings is generally supported by the literature particularly on the study conducted by Elbarmelgy, *et al* (2014) who among other factors, the study showed that the demographic factors; marital status, sex and education level of the people influence land use changes. However, the current study differs from the previous on education level whereby in the current study the factor showed no any influence while, there are inadequate studies discussed about age of the plot owners.

On the other hand, land value, land tenure system and land demand revealed to be significant with positive influence on land use changes in urban areas while, business activities revealed to have no any influence on land use changes in urban areas. This could be attributed by the reason that the area was designed for residential use, though there are some plots that have been changed for business activities. The findings receive support from the literature particularly on land value, land tenure system and land demand. According to the study conducted by Antrop (2012) the business activities has resulted to major land use changes into various development activities. The similar findings is also seen on the study conducted by Mdemu, (2012) the only difference being that his study concentrated on the influence on level of urbanisation.

For the case of land value, the support is referred to the study conducted by Joseph (2009) who indicated that the increase of land value leads to a number of land owners to seek for the permission of land use changes so that they can sell the land in order to meet their current need. The study also went far by indicating that the urban planners use that opportunity of the increase in land value to establish urban planning projects on land use changes. Different from the literature particularly on the study conducted by Masanja (2013), the current study revealed no any influence on the increase in business activities while, there are inadequate findings on land tenure system.

5.2.3 Environmental factors that influence land use changes in in urban areas

The influence on the environmental factors was the second objective that the study geared to assess. The factors considered in this case are; location of the plot/land, accessibility of the area where the plot is located, distance from the municipal centre. It was found that, all of these factors were significant but accessibility and location revealed to have positive influence on land use changes in urban areas while, distance from the city centre revealed to have negative influence. However, this is obvious because the smaller the distance of the plot to the municipal centre, the higher it is demanded for various activities hence, the higher the probability of land use changes. For the case of

location, the support is indicated by the literature on the study conducted by Feng & Yun (2008) who conducted a study on land policy control and indicated that the plots that are located in good areas with good environmental amenities are subject to accelerate land use changes. The literature also shows that accessibility of the area that are contributed by good roads (both main and street roads) attracts people to convert land into other uses hence contribute to land use changes (Joseph, 2009; Antrop, 2012; Masanja, 2013). The findings on distance from the municipal headquarter is also obvious in the real world that as the distance to the city centre become short, the land demand for various uses become high hence increase in land use changes. This is supported by a number of studies in the literature that include the study of Appiah, et al (2014) and Gwamna and Yusoff (2015) supports the findings though conducted outside Tanzania and focused on the distance to city centre.

5.2.4 The influence of the governmental factors on urban land use changes

The last objective of the study was to establish the influence of governmental factors on land use changes. In this case, the governmental factors considered is the land policy. However the assessment was extended to the land policy of (1995), Land Act No. 4 of 1999 and the Land Regulations of 2001. The descriptive findings indicated that majority of the land owners (plot owners) are not aware of the existence of any land policy, act or land regulations and for those who know the existence, it was found that majority of them also do not know the statement. The logistic regression results also showed that the factors have no influence on the land use changes in urban areas.

CHAPTER SIX

SUMMARY, CONCLUSION AND POLICY IMPLICATION

6.1 Introduction

This is the last chapter of the study. In this chapter, the areas that are covered include; summary of the key findings that provide a picture on what the study has established in relation to the objective of the study and research design. The chapter also covers the conclusion of the study that establishes how the researcher viewed the overall study and the findings revealed. The policy implications, is also the section covered in this chapter; this is the researcher's recommendations on the policy makers. Lastly, the limitation of the study and area for further studies are also explained in this section.

6.2 Summary of the key findings

The purpose of the study was to assess the factors influencing land use changes in urban area. To realise that, the study selected urban planning projects (Block "A" Buswelu, and Block "B" North Buswelu) at Ilemela Municipality in Mwanza City. The purpose of the study was also realised through the following research objectives; to examine the relationship between urban planning and land use changes in urban areas; to identify social-economic factors that influence land use changes in urban areas; to identify the environmental factors that influence land use changes in in urban areas and; to assess the influence of the government on urban land use changes.

Before testing the logistic regression model the zero order correlation matrix was first run. The test was important to ensure that the reported logistic results are valid and robust, through identifying any multicollinearity problem. The zero-order matrix correlation test was enough to identify any multicollinearity problem and it was identified that there is no any multicollinearity problem. The test was also important to determine the extent to which independent variables (predictors) correlate with the

dependent variable, i.e. land use changes in urban area and it was found that there is a good correlation.

The descriptive findings generally showed that at average, the plot owners perceive that urban planning activities carried out by the municipal through urban planning projects, contributes to land use changes in urban areas. The logistic regression results also support the descriptive statistics of which it was established that urban planning activities carried out by the municipal through urban planning projects, increase land use changes (change in land uses into various activities such as settlement, agriculture, recreations or other social services) in urban areas.

The second objective was assessed through the demographic factors, the social factors and the economic factors that are related to the community. Specifically, the factors are; age, sex, marital status, education level, land tenure system, land value, business activities and land demand. Upon analysis, it was revealed that age of the land owner decreases the likelihood of land use changes while, marital status and sex of the plot owner showed a difference in the perception of the plot owners on land use changes but in each case contributed to the increase in land use changes. Apart from the demographic factors, the socio-economic factors such as land value, land tenure system and land demand revealed to increase the odds of land use changes in urban areas while, business activities revealed to have no any influence on land use changes in urban areas.

The third objective that geared on assessing the influence environmental factors on land uses changes also showed significant results. The factors considered in this case are; location of the plot/land, accessibility of the area where the plot is located, distance from the municipal centre. It was found that, all of these factors were significant but accessibility and location revealed to have positive influence on land use changes in urban areas while, distance from the city centre revealed to have negative influence.

The last objective of the study was to establish the influence of governmental factors on land use changes. In this case, the governmental factors considered is the land policy but it was found that the factor have got no any influence on land use changes in urban areas.

Generally, it was found that the model is appropriate and is explained by the factors included in the study. This is evident from the Pseudo R square value that was revealed to be 0.6672 implying that the model is explained by the factors by 66.72% percentage variation.

6.3 Conclusion

Basing on the findings revealed in this study, it is clear that the community (land owners) are not familiar with land policy (The National Land Policy) despite the fact that the factor didn't show any significance influence. The policy is an important tool that shows the procedures that a land owner is required to follow in order to change the land into other uses. The policy also shows clearly the areas that are not required for land use changes for instance the residential area to be changed into recreational areas such as bars.

It was also revealed that land tenure, age of the land owner and land tenure system in the area we are living, are important determinants of land use changes. However, it was observed that there are inadequate literature on these factors, thus studying the factors added something in the literature that can be referred and studied further to provide land problem solutions.

It is also concluded that, land use changes is a broad topic that can be related by different factors and establish a significant influence. The area of urban planning projects, and demographic characteristics are also important determinants of land use changes rather than relying only on the economic and environmental factors.

6.4 Policy implications

The study has some implications to the policy that is recommendation to the policy makers and some stakeholders.

To the policy makers, the study recommend that the establishment of the awareness compain so that the community at large become familier with the land policy, land act and land regulations. This can be done by conducting public meeting (audience) streetwise whereby the experts can be invited to make elaborations to the population.

To the municipal urban planners, the study recommends the adharence of regualtions and procedures in implementing the land planning projects. This is important in order to avoid any problem especially land conflicts that normally happen when land is converted into various uses by the municipal without a proper inclusion of the owners.

To other land stakeholders such as land owners, to make efforts on understanding the land policy that govern the land use changes in Tanzania rather than waiting for the experts. This can be done by searching the materials related to land policy, land act and land regulations that are available over the internet. Therefore, through understanding the land policy, the land owners will be aware on what they need to do and what is the responsibility of the government when it comes that a certain area need to be changed from one use to another.

6.5 Limitation of the study

The study is limited with the nature of the study and scope. On the nature of the study, the cross-section research design was adopted of which data are collected once at a time. This gives a limitation that the phenomenon may change as the time goes, thus in the same area of the study one may find different results from the current one and that does not mean that one of the study is wrong but this is due to phenomenon change. Basing on the scope of the study, the current study limited its findings on the area where urban

planning projects are taking place and the data extracted from the land/plot owners, thus the same problem may lead to different results if the data are collected in the areas where urban planning projects are not taking place.

6.6 Area for further studies

Study of land use changes is a broad topic of which only one study cannot cover. Therefore, the current study recommends researches to be conducted in the areas where urban planning projects are not taking place and in the rural areas where land use changes are also taking place.

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APPENDIX I: QUESTIONNAIRES

Dear respondents;

This is an academic dissertation that is a part of the requirement for the award of the Degree of Master of Science in Project Planning and Management offered by Mzumbe University-Mwanza Campus. The dissertation intends to examine the Factors that Influence Land Use Changes in Urban Area: The Case of Urban Planning Projects in Ilemela Municipal. Hereby, you are kindly requested to answer the few questions indicated below for that purpose. You are ensured that the information provided is subject to confidentiality and will be used for academic purposes only. Please attempt all questions accordingly

Demographic characteristics of the households

Please indicate your age_____

Indicate your sex from the choices below

Male

Female

Please indicate your marital status from the choices below

Not married/single

Married

Cohabited

Separated

Widowed

Chose the level of education you have attained from the choices below

Not formal education

Primary level of education

Secondary level of education

College Certificate/Diploma level of education

University degree or above

Indicate your plot/house location from the following areas

Block "A" Buswelu

Block "B" NorthBuswelu

Please indicate an approximate distance from the municipal headquarter of which your plot is located _____Km.

Do you think the distance of your plot to the municipal centre influenced land use changes

The relationship between urban planning and land use changes in urban areas

Do you think the urban planning project taking place in your area is influenced by land use changes

Yes

No

Do you think the urban planning projects taking place in your area are the results of high land demand on various needs

Yes

No

Do you think the municipal official adhere to urban planning procedures

Yes

No

The social-economic factors that influence land use changes in urban areas

Please indicate the extent to which the following socio-economic factors influence land use changes in the area where the urban planning projects are taking place.

Factor	Yes	No
The increase in land value		
The increase in business activities		
Location of the area		
Land tenure system		
Land demand for settlement, business or industries		
Easy access to social services such as water, health services and schools		
Education level of the owners		

B. The environmental factors that influence land use changes in in urban areas

Do you think the following environmental factors influence land use changes in the area where the urban planning projects are taking place.

Factor	Yes	No
Easy in accessing the area		
Location of the area		

Governmental factors

Are you aware of any land policy?

Yes

No

Please indicate the extent to which you think the following land policy influences land use changes in the area that urban planning projects are taking place

Factor	Yes	No
Land policy 1995		
Land Act No. 4 of 1999		
The Land Regulations of 2001		