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**ADDIS ABABA UNIVERSITY COLLEGE OF DEVELOPMENT STUDIES**  
**CENTER FOR REGIONAL AND LOCAL DEVELOPMENT STUDIES**  
**URBAN DEVELOPMENT AND LIVELIHOOD PROGRAM**

**DETERMINANTS OF URBAN-RURAL LINKAGE FOR LOCAL  
DEVELOPMENT: THE CASE OF TULU BOLO TOWN AND ITS  
SURROUNDING RURAL AREAS, OROMIA, ETHIOPIA.**

**BY MILKESA LEMMA**

**ADDIS ABABA, ETHIOPIA**

**July, 2020**

Addis Ababa  
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**Addis Ababa University College of Development Studies**

**Center for Regional and Local Development Studies**

**Urban Development and Livelihood Program**

**Determinants of Urban-Rural Linkage for Local Development: The Case of  
Tulu Bolo Town and Its Surrounding Rural Areas, Oromia, Ethiopia**

**By Milkesa Lemma**

**A Thesis Submitted to Center for Regional and Local Development Studies of  
AAU in Partial Fulfillment for the Requirements of an Award of MA Degree.**

**Addis Ababa, Ethiopia**

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**Addis Ababa University Center for Regional and Local Development  
Studies**

**Determinants of Urban-Rural Linkage for Local Development: The Case of  
Tulu Bolo Town and Its Surrounding Rural Areas.**

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## **Declaration**

I, the under signed, declare that this thesis entitled “Determinants of Urban-Rural Linkages for Local Developments: the Case of Tulu Bolo Town and its surrounding Rural Areas submitted in partial fulfillment for the requirement of a master’s degree to the center for Local and Regional Development of Addis Ababa University is completely my work and has not been submitted for fulfillment of any degree in any university, and to the best of my knowledge, all the sources I used in this study are well acknowledged.

**July, 2020**

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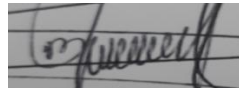
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## **Certification**

This is to certify that this thesis entitled “Determinants of Urban-Rural Linkages for Local Development in case of Tullu Bollo Town and its surrounding rural areas “submitted in partial fulfillment for the requirement of a master’s degree to the Center for Local and Regional Development of Addis Ababa University is an original work done by student Milkesa Lemma Id No. GSR/8921/11 under my supervision.

**Muluadam Alemu (PhD)**

Signature

A rectangular box containing a handwritten signature in black ink on a light-colored background. The signature is cursive and appears to read 'Muluadam Alemu'.

Date: **July, 2020**

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## **Abbreviations and Acronym**

URLs	Urban-Rural Linkages
FGD	Focus Group Discussion
LD	Local Development
LED	Local Economic Development
OECD	Organization for Economic Cooperation and Development
SSACS	Sub-Saharan African Countries
LDs	least Developed Countries
HHs	Households
VIF	Variance Inflation Factor
SPSS	Statistical Package for Social Science

## **Abstract**

The objective of this study is to examine determinants of urban-rural linkages for local developments in Tulu Bolo Town and its surrounding rural areas. To attain this objective, the required data was collected from primary and secondary sources using survey questionnaire and key informant interviews. The sample consisted of 235 households' selected using random sampling method and purposive sample. Both descriptive and econometrics analysis were employed to meet the objective of the study. The result from the descriptive analysis indicates that, most of the linkages that exist in the study area are sectorial linkages and spatial linkages. A spatial linkage in the study area shows flow of goods, money, and technology and information linkages. Sectorial linkages are the connection between agriculture (crop production, livestock production) and manufacturing (use of agricultural inputs such as fertilizer, improved seeds, herbicides and pesticides) linkages. The nature and type of these linkages are affected by factors related to infrastructure, subsistence nature of production, lack of market information, lack of guideline and organized planning, and low purchasing power of most of the residents. Urban-rural linkages are energetic for local development in terms of income and wealth generation, economic activities diversification, and increase opportunities for employment; improve wellbeing and livelihood of the study area.

After endogeneity problems among different factors are detected, logit regressions were run to identify important determinants. The results revealed that sex of the respondents, land owned, Access to credit, access to infrastructure facilities and distance have significant and positive (more) influence on the determinant of urban-rural linkage for local development. However, family size, market availability and livestock owned have significant and negative impact on the determinant of urban-rural linkage for local developments. Accordingly, the study recommends that the Tulu Bolo Town and Rural administration, Oromia regional state and Federal government need to develop an integrated URLs program in collaboration with stakeholders so as to encourage mutual development of urban and rural areas. Hence, to enhance urban-rural linkages in the study area, it is essential to take measure on the factors that hinder mutual development of both urban and rural areas.

**Key words: Determinant of Urban-Rural Linkages, Local Development, Logit.**

# **CHAPTER ONE**

## **1. Introduction**

### **1.1. Background of the Study**

Most development policies have implicitly based on rural-urban dichotomy which manifested on numbers of policies prepared for urban and rural areas separately. Such kinds of approaches have created gap between the two spatial units and thus adversely affect the local economies of the area concerned (Magersa, 2007). Rural areas were considered as remote farming places where as urban areas were considered as over-crowded cities (Braun, 2007).

Urban and rural areas were considered to be two distinct spatial units in the context of development planning. As a result, most of the development theories and practices were absolutely based on the dichotomy between the two areas, which reflected itself in the division of policies along spatial and sectorial lines. Urban planners usually focus on urban nodes and giving too little attention to rural-led development, while rural development planners tend to ignore urban centers and define rural areas as consisting only of villages and their agricultural land which adversely affected the development of the two spatial units (Tacoli, 2002). Urban-rural linkages affect both rural and urban change, and influence resource use and management. These linkages include flows of people, goods, money and information, as well as other social transactions that are central to social, cultural and economic transformation (Funnell, 1988).

Prior development theories and policies were designed based on the dichotomy between urban and rural areas, as urban and rural areas received different attention in practice and planning. Such approaches undermined the potential of urban-rural linkages for poverty reduction and mutual developments. It also creates disparities between the two spatial units in the levels of living. In reality however, the urban and rural linkages contribute to local economic developments (Gelan, 2008). Urban centers are epicenter of modernization and development. Recent awareness of this process has been given emphasis to mutual development for urban and rural areas. This mutual development is manifested through urban-rural linkages (UNHSP, 2005).

The growth of agricultural sector depends on access to urban market and industrial inputs, while the industrial sector of the urban areas require raw materials from the rural sector (Tegegne, 2001). The exchange of labor is driven by the human resource need of the urban centers that rural areas have in abundance, especially unskilled and semi-skilled (Tostensen, 2004). In most developing countries (including Ethiopia), rural-urban interactions are very much limited because the rural areas are unable to produce enough food and raw materials; and unable to serve as market centers. The latter is also unable to produce goods and services that satisfy the needs of the rural hinterlands. Rural-urban linkages are also influenced by factors related to production and distribution of agricultural and industrial goods, and movement of labor forces (Tegegne, 2001).

Evans (1992) cited in Tegegne (2001) conducted the household level study of urban-rural linkage. The main findings of the study show that the small towns play vital role in supporting the growth of agricultural production, rural income and absorb rural people. The study also reveals that rural hinterland stimulates growth in nearby towns' centers by initiating wide range of small scale non-farm activities. Unlike other study, the study finding closely approximates the theoretical town hinterland relation.

Tegegne (2001) indicates that small towns' centers are immediate importance for agricultural development in Ethiopia. Ethiopia has numerous towns. These towns' centers are expected to assist agricultural and rural development by serving as market, service and employment centers for rural hinterland. The extent to which urban-rural linkages exist between small town and its hinterlands in Ethiopia needs an investigation as it is an important issue that is capable of addressing both urban and rural development. According to Rondineli and Ruddle, (2012) cited in UNHSP (2005) shows that urban and rural areas must closely be linked in order to distribute social and economic service delivery more widely and to increase access of rural population urban service.

The rural-urban linkages approach to development focuses on the mutual development of both urban and rural areas for a strong local economy. It is assumed that both areas are interdependent through the flow of resources and other linkages. Urban areas provide markets for agricultural and rural commodities, while rural areas provide agricultural surpluses to the urban area

(Akkoyunlu, 2013). This study is to provide greater clarity and awareness about determinants of urban-rural linkages for local developments, the case of Tulu Bolo Town and surrounding rural areas. Specially to examine the different forms of linkages that exist in the study area, the roles of urban-rural linkages for local developments and key factor that determine urban-rural linkages to encourage mutual development of both urban and rural areas.

## **1.2. Statement of the Problem**

The traditional rural and urban dichotomous approach to understanding local economic development fails to align with the reality of the contemporary globalized world (United Nations, 2011). Globally, societies are highly interconnected at local, national, and/or international levels (Magel, 2003). At the local level, rural and urban areas are linked together through the flow of people, production, commodities exchange, capital, income, and market information, among other elements, and this makes rural-urban linkages are important for LED and poverty reduction (Fritsche et al. 2015). Strong rural-urban linkages would encourage new forms of livelihood through diversification and agro processing (Steinberg, 2014).

Academics around the world have been debating on the pros and cons associated with rural-urban linkages since the 1950s. However, there have been changes in this area over time. In the 1950s policies called for an acceleration of urban industrial growth because urbanization was generally considered to be associated with modernization (Sani& Far, 2015). By the 1970s, development approaches shifted to integrating infrastructure in rural areas to achieve rural developmental goals, this also was correlated with a reduction of comparative disadvantages for competition and utilization of rural resources (Nemes, 2005). In the 1980s it was recognized that these dichotomous development approaches had failed to bring the future development outcomes, and therefore, rural-urban linkages have emerged as a development approach in regional planning (United Nation, 2011).

The publication of Scotland government (2005) shows that, the linkages between small town and its surrounding rural areas that provide socio-economic development in both rural and urban areas. However, most cities in Ethiopia are established as the result of political and administrative factors and not on the basis of economic and market driven objectives. Due to this

fact, the historical development of cities shows little interdependence between urban and rural areas.

Tegegne (2005) also argues that the development history of Ethiopia has been urban biased until last decades and rural biased until recent time. These unbalanced urban-rural linkages, policies and strategies limit the socio-economic interaction and interdependence of both spatial units.

Moreover the implication of urban-rural linkages in economic development and poverty reduction in developing countries, especially, in Ethiopia has been affected by the poor economic development, road transport, poverty, food insecurity and less access to employment opportunities among urban and rural areas. In most developing countries (including Ethiopia), rural urban interactions are very limited because rural areas are unable to produce enough food and raw materials and urban areas also fail to produce goods and services to satisfy the needs of rural hinterlands. Rural urban interactions are also affected by the factors such as productions and distributions of agricultural and industrial goods (Tegegne, 2001)

Diverse studies conducted on URLs in Ethiopia mostly focused macro level and showed the presence of poor and distorted inter-sectorial linkages due to policy and institutional failure (Alemayehu 2007, Aynalem & Assefa, 2011, Center of Statically Agency 2011 and Tegegne 2005). Almost all the macro level research on URLs is working papers (Alemayehu 2007, Demese 2007, Gete 2007 and Tegegne 2007) which are either review research or very general policy implications for multidimensional URLs. However, macro level URLs researches are more general multidimensional and multidisciplinary such as economic (financial, production and consumption) linkages, socio-cultural (basic social services and gender) networks and linkages, population flow and migration, manufactured infrastructures (physical assets) and environmental (natural resources) linkages, spatial system linkages (Douglas, 2006).

Several researchers (Demese 2007, Douglas 2006, Mittal 2007, Tacoli 2007 and Tegegne2007) and some international research organizations such as World Bank, United Nation International Development organization, International institute for environmental and development, United Nation and UN-Habitat have studied URLs in holistic approach for investigating integrated development in least developed countries. These studies generally conclude that weak and poor

URLs in Least Developed countries, mainly SSACs are the main driving causes for poverty and underdevelopment in both urban and rural areas.

Tulu Bolo town like other towns has come to existence due to administrative reason. Recent government practices of the town and surrounding rural Kebeles contributes less to economic development due to shortages of sufficient and effective infrastructures as well as less integrated system of urban and rural areas. Even though the town is serving as a center of market, employment and service delivery, there are some factors that affect the linkages between the town and surrounding rural Kebeles. Farmers in the rural areas follow traditional ways of farming which result in low agricultural output. This in turn creates the problems of purchasing livelihood goods and services. The nature of infrastructure and service provided in the town does not enhance urban-rural linkages. There is inadequacy of road network to link the town with surrounding rural areas. The mere presence of town by itself could not bring about the desired development unless the town is capable of providing proper functions and stimulate urban-rural linkages. An understanding of the nature and strength of linkage between helps to strengthen both urban and rural economies in Tulu Bolo town. In Tulu Bolo town urban-rural linkages are weak. The various linkages between two spatial units depend up on capacity of producing of rural areas and physical infrastructure of the area. Hence, the physical infrastructure between two areas is very poor. Therefore, given all above problems and gap, this study tries to assess factor affecting urban-rural linkage, role of urban-rural linkage for local development and the nature of linkages between two spatial areas in terms of production, marketing, migration and services utilization in Tulu Bolo town and its surrounding rural areas by assessing the capacity of two spatial areas to satisfy the needs of each other.

### **1.3. Objective of the Study**

#### **1.3.1. General Objective**

The main objective of this study is to examine determinants of urban-rural linkage for local developments that exists between Tulu Bolo town and the surrounding rural areas.

### **1.3.2. Specific Objectives**

- ❖ To investigate the different forms of linkages that exists in the study areas.
- ❖ To identify role of urban rural linkages for local developments.
- ❖ To identify key factor that determine urban-rural linkages.

### **1.4. Research question**

This study attempts to answer the following specific research questions.

- ❖ What are the different forms of urban rural linkage that exist in the study area?
- ❖ What are the roles of urban-rural linkages for local development?
- ❖ What are the key factors that influence the urban-rural linkage in the study area?

### **1.5. Significance of the Study**

This study provides vision for strengthening mutual linkages and benefit local government bodies in particular and development experts, and policy makers in general, by providing evidence regarding the contribution of rural-urban linkage, in improving local development and poverty alleviation. By assessing the role of the existing URLs for the local development has its contribution in filling the gap in the literature. The outcome of this study makes a modest contribution to research methodologies. On top of this, the finding of the research provides an insight for researchers and students interested in similar theme for further investigation in other areas or to conduct an in-depth study on RULs or other related issues.

### **1.6. Scope of the Study**

Thematically this study focused on examining the determinants of urban-rural linkages for local developments. Moreover, it examines the major key factor that determines urban-rural linkages, the different forms of linkages that exist in the study area. The study was specifically conducted in Tulu Bolo Town and surrounding rural areas within reasonable distance to determine rural-urban linkages by considering time and money.

## **1.7. Limitation of the study**

The researcher has faced some challenges while conducting this study. The first one was the respondents considered the researcher as someone who is sent by the government and sometimes feel uncomfortable to give information. In such cases, the researcher has used personal observation to overcome the problem and finally the most serious problem was the pandemic COVID-19 to dig out information needed to the study. In such cases I used protection method outlined by world health organization.

## **1.8. Organization of the paper**

This research paper is organized into five chapters. The first chapter presents the background of the study, statement of the problem, objectives of the study, research questions, significance of the study, the scope of the study, organization of the paper. Chapter two deals with the review of related literature and the third chapter presents the study methodology including description of the study area, research design, sampling techniques, tools of data collection and methods of data analysis. Chapter four discusses the findings of the study covering qualitative and quantitative analysis of the collected data. The final chapter summarizes the main findings of the research and forwards concluding remarks and recommendation

## **CHAPTER TWO**

### **2. Review of Related Literature**

#### **2.1. Evolution of Urban-Rural Linkages**

In history, there exist determined and rigid distinctions between “urban” and “rural”, founded on the basis that agriculture is the dominant activity of rural population, while urban residents primarily engage in industrial production and services. Most theories and practices focus on either “urban” or “rural”, with little attention being paid to the interrelations between these two parts. It is, however, commonly understood that strong mutual linkages exist between urban and rural areas, through the resource flows of people, capital, goods, information, and technology; flows which play an important role in the process of rural and urban development (Tacoli, 1998, 2003). Potter et al. (2004) argue that urban-rural linkages were initiated in an attempt to take the advantage of differentials or complementarities between these two parts.

The evolution of urban-rural relations can be traced throughout the urbanization process of human society. In the era before the Industrial Revolution, when all nations were predominantly rural, urban-rural relations were characterized by urban residents consuming agricultural products in exchange for the industrial products of cities. However, such linkages were restricted due to low productivity and limited transportation and communication capacity. After the Industrial Revolution, the major part of the population in most Western European countries lived in cities. Urban-rural relations in this era shifted from the previous balanced exchange to an increasing dependency of rural areas on the urban economies. Cities could utilize resources from a larger context, which extended beyond their surroundings, while rural areas increasingly relied on the urban market, facilities, and services. Since the second half of the twentieth century, most developed countries have maintained major urban populations, while developing countries have undergone rapid urbanization. Areas where both agricultural and non-agricultural activities exist have been identified in many developing countries (McGee, 1987; Ginsburg et al., 1991; Potter & Unwin, 1995). Urban-rural relations, at this stage, are now demonstrating a more complex process of development through which interdependencies are shaping the fortunes of cities and

the countryside alike (Davoudi & Stead, 2002). The initial exchange of food and industrial products between urban and rural areas has evolved to a stage of mutual linkages.

Large urban centers provide higher order goods and services with a large market, capital and population while small urban centers provide goods and services of lower order (von Braun, 2007). Mostly, the early models not only explain evolution of rural-urban linkage but also linkages between urban centers of different scale (von Braun, 2007). On the other hand, von Braun (2007) and Akkoyunlu (2013) criticized these models as they are formulated with the assumption that is far from the reality. Besides, their applicability to the real world is limited as they do nevertheless clarify the nature of differentiation between urban and rural areas. Specifically, these models were criticized because of the core assumptions like homogeneous spaces, uniform consumer preferences and proportionality of transport costs to distance while they are really characterized by different factor endowments. Despite such defects, they contributed to explain evolution and importance of urban-rural linkage in growing rural-urban linkage and laid the foundation for the emergence of theoretical and empirical frameworks meticulously discussed in the subsequent sections.

## **2.2. Conceptual and Operational Definitions of Urban-Rural Linkages**

There are various definitions given to an area to be called as urban or rural. Different countries have different criteria for these definitions, out of the criteria such as population density economic activity administrative function and infrastructural development that countries of the world use for the classification. The first two are the dominants criteria (UNDP, 2000). According to Tacoli (2004), there are three major problems to make destination between two spatial units. The first one is demographic and economic activities. Using this criterion as the base for classification has problems because different countries do have different criteria of their own. The second problem is a problem of defining the boundary between two areas. The final problem is associated to the real coverage of the urban areas which are less than the area that urban residents and enterprises cover. This is to mean that urban areas are dependent up on the resource and ecological function of an area considerably larger than themselves. According UN, urban area is an area where non-agricultural production sectors such as manufacturing and services and their workers are concentrated. Adding to this city or urban area usually has a legal

status granted by nationally government and is associated with specific administrative structure; rural areas on the other hand are regarded as place of low population density with predominantly agricultural economies.

In Ethiopia population size is used as criteria to distinguish urban areas from its rural counter parts. Accordingly, all areas having population 2000 and above are classified as urban centers (Tegegne, 2005). Compared to other African countries, urbanization is at lowest share 21% of the total population of the country (EEA, 2005). However, there is high rate of urbanization due to ever increasing of urban-rural linkages .Urban centers historically emerged as center dynamic economic activity and play great role in socio-economic development process of the country. On other side, urban centers are sources of all types of modern problems including destitution, homelessness, crime and other problems. It is also true in the case of Ethiopia. In the country urban poverty is manifested in many ways ranging from several destitutions observed along major roads and every corner of urban center to same what hidden deprivation that is not discernable to front line observers. Nevertheless the process of urbanization brings about process of developments as the farmer is usually the engine for the later (EEA, 2005).

Rural–urban linkage is a regional planning concept and simply defined as a mechanism through which urban and rural areas interact in complimenting one another in development. It broadly refers to the growing flow of public and private capital, people, goods, money and information between urban and rural areas. However, these forms of linkages are categorized into economic, service, demographic, spatial (physical), environmental, and tourism linkages (MoWUD, 2009).

Rural-urban interactions can be defined as linkages across space (such as flows of people, goods, money, information and wastes) and linkages between sectors (for example, between agriculture and services and manufacturing).In broad terms, they also include 'rural' activities taking place in urban centers (such as urban agriculture) and activities often classified as 'urban' (such as manufacturing and services) taking place in rural settlements (International Institute Environmental and Development, 2012).

### **2.3. Theoretical Framework of Urban-Rural Linkages.**

Generally, von Thune's model of agricultural land uses (von Thune, 1826) and Alfred Weber's industrial location theories (Weber, 1909) have assisted as the basis for the theoretical understanding of resource flows between urban and rural areas. Urban demand is the key factor in the spatial allocation of economic activities (agricultural and industrial), which primarily depend on both production cost and potential profits.

Central Place theory (Christaller, 1933) provided a way of ordering of the economic activities flowing between villages, towns, and cities. Under Christaller's model, cities are seen as the main suppliers of high-order services like medical services and education to the surrounding areas, which in turn supply low-order services like food and other resources to the central place. The Core-Periphery model (Friedmann, 1966) which addresses the unequal distribution of power in economy, society and polity, indicates that the core area is the central realm while the surrounding rural periphery is dependent on the core area for the supply of high-order services. The core area thereby evolves into urban or metropolitan areas with a high potential for innovation and growth, while periphery areas experience slow growth or even stagnation, adding to their dependency on the core area.

In the new economic geography, Krugman (1991) and Fujita et al. (1999) pointed out that interrelated industry concentrations, reliable infrastructure, accessibility to the market, and high production returns all drive a cumulative process that may result in a core-periphery economy. In this sense, resource flows tends to agglomerate to the urban areas, while the fortunes of rural areas are tightly reliant on the adjacent urban areas.

Recently, small and medium urban centers have come to be seen as playing an important role in urban-rural linkages, given the strong link that they maintain to their rural hinterlands (Baker & Claeson, 1990). Situated between urban and rural areas, these centers serve as the interface for urban-rural linkages. McGee (1991) used the concept of 'desakota' in the Asian context, describing the symbiosis of urban and rural areas which resulted from the transformation into a dispersed metropolis. Gering et al. (1998) found the urban-rural interface a zone where social, economic, and political factors interact in complex ways. Browder (2002) considered the urban-rural interface as an array of networks connecting urban agents and rural producers. These

manifestations all emphasized the transitional and dynamic features of the urban-rural interface, which serves as a frontier where rural areas are in transition to becoming urban areas. The urban-rural interface acts as an attractive destination for rural migrants, offering non-farm employment and access to education and medical service etc.

Further, the role of the urban-rural interface has also been recognized in situations where out-migration and industrial transfer from a down town area to the outskirts and suburbs of a city emerge because of congestion problems in the urban areas. Krugman and Elizondo (1996) pointed out that resource relocation to the urban-rural interface is attributed to the “centrifugal” forces that tend to break the agglomerations in the urban areas. The centrifugal forces include pure external diseconomies like congestion and pollution, urban land price increase, transportation cost increase, and the preference of moving away from highly competitive urban areas to less competitive rural locations (Tabuchi, 1998).

This theoretical analysis suggests, to a large extent, that patterns of resource flows and agglomeration exist at the regional level: resources tend to be concentrated in urban areas, while being located sparsely in the rural peripheries. In turn, resource agglomeration in the per-urban areas (small towns) is at a medium level. The small towns can be treated as sub-centers in the rural peripheries, supplying urban services. These patterns are actually in line with what Johan Friedmann (2005) termed “multi-centric urban fields” in the Yangtze River Delta and Pearl River Delta in China. He pointed out that in the process of the urbanization of the countryside; Chinese peasants migrated to the coastal cities to find work and a better life, while millions also went to the rapidly industrializing rural areas in their vicinity (mostly the small towns). This resulted in multi-centric urban fields in the immediate vicinity of medium-sized and large cities that would eventually integrate with the urban cores.

### **2.3. 1. Dimensions of Urban-Rural Linkages**

Different studies on the urban-rural linkages shows that the dimensions and classification of linkages based on the scope and objective of the study. Tacoli (1998) divided urban-rural linkages in to the following categories.

**I. Spatial linkages:** - It is the flows of goods, people, money and information across urban rural continuum. These flows are some indicators of the linkages that exist between the rural and

urban parts of the country. The volume of marketed grain for example could be an indication of the grain flow. A study in 1996 indicated that the marketed grain was about 28.2 million quintals while estimates from the CSA excluding pulses and oil crops found out that the marketable surplus for 2001/02 was 14 million quintals (Wolday & Elleni, 2003). The latter 14 represented 17% of the total production. This is an indication of a much lower flows of grains to markets (urban areas) potential. The bulk of the production remains in rural areas for different purposes: consumption, seed and feed. Grain marketing is of course constrained by a number of factors such as subsistence production, poor infrastructure, lack of information and limited storage capacity of traders (Tegegne, 2005).

**II. Sectorial linkages:** - It assumed that the availability of non-farm activities in rural areas and the existence of farm activities in urban areas. A sharp dichotomy of urban rural settlements often assumed that the livelihoods of their inhabitants can equally being divided in to two main mutually exclusive sectors. Accordingly, agriculture activities are for rural areas and manufacturing and services activities are for urban areas. However many researchers have shown that number of urban households engaging in agriculture and rural households those income derived from non-agriculture activities are increasing (Tacoli, 1998).According to Satterthwait and Tacoli (2003) ,this sectorial divisions between urban and rural specialists and policy does not reflect the reality in many cases, and create difficulties.

### **2.3.2. Different Forms of Urban-Rural Linkages**

The most common types of linkages that are produced from the connection of both rural areas and urban centers are:

**Production linkage:** This is created when the farm households use agricultural inputs available in the town and the town's enterprise use agricultural products as raw material for their activities (Tassew, 2010).

**Consumption linkage:** It is produced when the rural households' income obtained from the sale of agricultural produce is spent to purchase consumer goods and services available in the nearby town. It represents the flow of consumption goods and services across the rural-urban continuum (Tassaw, 2010).

**Marketing linkage:** It refers to the selling and buying of goods. In other words rural households sell their agricultural produce to urban households and trades in the market of small towns (White, 2011).

**Public service linkage:** This emanates when the rural households use the public services available in the small towns (Tegegne, 2001).

**Environmental linkage:** This is manifested when there is flow of natural resources between the two spatial units. Natural resource such as water, fire wood, construction materials etc. flow from the surrounding rural areas to the nearby urban center. And wastes are deposited in rural areas from the urban (MoWUD, 2009).

**Tourism linkage:** This involves a situation when people move away from their permanent residence for recreation, holiday, visiting relatives and the like for short period of time (MoWUD, 2009).

**Infrastructural linkage:** This could be physical (such as road and telecommunication) or social infrastructure (like schools, health centers). These infrastructures are expected to provide adequate service to the rural people (MoWUD, 2009).

**Demographic linkage:** the two spatial units are linked by rural to urban and urban to rural migration in which labor is the major flow of resource. Migration is one of the few avenues open to poor households to increase income and combat increasing impoverishment (MoWUD, 2009).

**Financial Linkage:** The movement of capital between rural and urban area is effected through financial intermediaries. This is the flow of capital through formal (banks and microfinance) and informal (money lender, relatives and friends) institutions between rural and urban areas. It includes remittances from migrants to relatives and communities in sending areas and investments and credit from urban-based institutions (Tacoli, 2007).

### **2.3.3. Factor that Determine Urban-Rural Linkage**

There are different factors which affect urban-rural linkage such as government policies, built environment rural production, structure of rural economy; social-economic relation natural

environment, resource endowment and spatial linkage (Tegegne and et al, 2005). Government policies can affect urban-rural linkage in various ways. In developing countries the government intervened in fixing the price of grains, determining grain market, restricting regional grain movement and the participation of the private sectors through limiting license (Chowdhury, 2005). Currently governments in many developing countries have embarked up on decentralization. Although decentralization includes many advantages it can also have a significant impact on urban-rural linkage (Bajracharya, 2005). The types of land tenure which banned mobility and diversification on job opportunities have reduced urban-rural linkage (Tegegne, 2005).

Another factor of urban-rural linkage is the level of built environment. Adequate infrastructure development such as road communication network make centers source of energy, water supply etc. are pillars of urban-rural linkage development approach. The absence or presence of these facilities affect the urban-rural linkages (Douglass, 1998). The third important factor is rural production regime of organization of production. The organization of production within a given sector will have subsequent bearing on urban-rural linkage. According to Douglass (1998) commercial cash Crop production which use low wage labor can show little demand for the local town services while small holder production regimes depend to a great extent, on town to market, supplies cooperative and consumer shopping and hence relatively stronger urban-rural linkages . Socio- economic relations is another factor for urban-rural linkage. For example social exclusion from employment market credit and access to education is crucial issue in multiracial and multilingual countries and these will have tendency to distinguish urban-rural linkages (Chowdhury, 2005). Finally natural environment and resource endowment are other factors for rural-urban linkages. (Deforestation can lead to continuous flooding and drought and this situation may enhance the pattern of access and types of function supported the hinterlands).

Rural-urban linkages are influenced by factors including institutional (market and financial), infrastructure, development policy and accessibility of farmland (Akkoyunlu, 2013, Sietchiping, Kago, Zhang, Augustinus, & Tuts, 2014, 2015). Market institutions influence the income of households, especially when some actors, such as traders, are able to enforce market-controlling mechanisms favoring access for specific groups at the expense of others.

The capacity of both urban and rural areas to satisfy the production-consumption demands of their people helps to determine the strength of the linkages. Physical infrastructure (such as roads) and information communication technology play central roles in bridging the rural urban divide by facilitating linkages between the agricultural and non-agriculture sectors of the economy (Sietchiping et al., 2014).

Particularly in developing countries, distance to markets and lack traders in this study include local retailers and collectors (big traders), local collectors and intermediaries (small traders) and external retailers (bigger traders) of roads jeopardize the livelihoods of the rural poor. These issues result in the rural poor have difficulty gaining access not only to competitive markets for their produce, but also to inputs, assets, technology, consumer goods, credit, and labor (Khor, 2006).

Development policy can influence rural-urban linkages by creating favorable conditions for strengthening the linkages by providing for infrastructure and the developing small urban centers and their surroundings (Akkoyunlu, 2013). In Ethiopia, small and intermediate urban centers serve as markets and service centers for local agricultural producers and also as administrative centers (Dorosh &Thurlow, 2013, Fit-sum, 2013).

#### **2.3.4. Role of Urban-Rural Linkages for Local Developments**

Literature forwarded by many scholars recognizes the role of urban centers as a vital spatial element in integrating the rural-urban economy. Small towns could play a significant role in linking rural-urban economies to attain a more balanced development in different ways. They act as centers of demand/markets for agricultural produce from the rural region, either for local consumers or as links to national and export market. They act as centers for the production and distribution of goods and services to their rural hinterlands. Such concentration is assumed to decrease costs and improve access to a variety of services, both for public and private and for all households and enterprises. Small towns are also centers for the growth and consolidation of rural non- farm activities and employment, through the development of small and medium sized Enterprises or through the establishment of branches of large private or parasternal enterprises. The demand for non-farm labor can improve rural households' incomes and decrease migration pressure on large urban centers/cities. However, the significance of these roles is determined by a

much wider economic, social and political context, including the nature, competence and accountability of governments located in such urban centers (Tacoli, 2003).

When formalized and promoted by government policies, rural-urban linkages have the potential to promote strong LED by contributing to the well-being and livelihoods of the residents and providing an exit out of poverty (Gete, Trutmann, & Aster, 2007). Sustainable rural growth and urban growth are positively correlated, because stable urban service sectors may provide more jobs by absorbing migrant laborers from the rural areas and supplying processed products to the migrant laborers, which in turn generates a significant proportion of urban incomes (Adugna & Haile Mariam, 2011). Strong rural-urban linkages enhance sustainable LED as the linkages channel resources from producers to consumers, creating economic benefits for the residents (Akkoyunlu, 2013). These linkages have also the potential to stimulate diversification of economic activities in rural areas, particularly when they are in geographic proximity (Dorosh et al., 2011; Mushir & Meaza, 2013).

Livelihood diversification assists capital and asset accumulation (Dorward et al., 2009), whereby farm households with farm assets have access to urban networks in which they can re-invest profits from urban-based activities in agricultural production, and vice versa. This diversification, therefore, is an important element of the “virtuous circle” of rural urban economic development, where the role of infrastructure linking producers to domestic and external market is significant. Akkoyunlu, (2013) potential role of rural or urban regions, as well as opportunities they offer must be related to the regional context rather than only to the rural or urban area, therefore Rural-Urban linkages play a crucial role in the generation of income, employment and wealth.

### **2.3.5. Urban-Rural Linkage in Ethiopia**

The Tegegne (2001) identified that Ethiopia is predominantly agricultural country those prospects for development rely on rural progress. In the past the attempt to increase the productivity of agriculture and bring about rural development has focused on the structural problems. These problems are related to land tenure, lack of input, inadequate and fragmented land size and pricing and overall policies of the country. The policies are narrowly focused because of price change, institutional and technical innovations alone will not bring the desired

change. Farmers may face obstacle in having access to supporting service and off-farm opportunities. The later for example, provide income diversification and enable farmers to move the risk taking in using inputs and technical innovations. These opportunities would be realized if we exploit linkage between agricultural and non-agricultural linkages. Generally this linkage could be manifested in different forms of demand that could be exhibited by households, consumer and producers. Households in rural areas demands urban goods and service while urban households' demands farm products.

The study conducted by Germen technical cooperation (2006) under the ministry of work and urban development describes the management of economic development across spatial areas.

The study also shows that towns and cities in Ethiopia do not have strong coordination with their rural hinterlands and administration in all aspects of the town. There is no institutional framework for the coordination and therefore regional institutions work on their respective sector independently.

Rural-urban linkages in Ethiopia are usually shown through the flow of agricultural and industrial goods and services, capital and labor, and through the sectorial linkages. In addition to these economic linkages, there are several social and institutional linkages. The flow of grain and livestock between rural and urban areas, which represent the major form of agricultural goods flow, is constrained by several factors including poor marketing, infrastructure, subsistence production levels, poor transport infrastructure, poor market information, limited storage capacities, etc. The unbalanced spatial distribution of towns as well as their size, have also constrained the flow of industrial and manufactured goods from urban to rural areas. The flow of labor is also constrained because of low absorptive capacity of urban centers and poor transport infrastructure (Assefa, 2011).

Akkoyunlu (2015) confirms that the importance of urban-rural linkages is not recognized and ignored in development policies though they are crucial for income, employment, wealth and overall poverty reduction. Similarly, Eppler et al. (2015) argue that the spatial and functional decoupling of urban centers and their hinterlands have challenge for governance and development. Ethiopia is unable to shift from agricultural activities towards value adding agro-allied industries by organizing the economy in a way that can tap the potentials of URL for local

developments. According to World Bank (2007) the country is also unable to design and pursue policies that could benefit the millions in rural and urban areas due to policy and governance failure.

Urban-Rural linkage or urban-rural economic linkages in particular has comprehensive development policy of agricultural based countries need integrated development approach for departmental sector ministers (ministry of agriculture, ministry of industry, ministry of water, ministry of energy and mining) with building their implementation capacity. This is because the national development is the result of multi-spatial (urban-rural), multidisciplinary (urban planner, rural planner, agricultural experts, industrial experts etc.) and multi-scalar (micro-macro) and multi-actors (small house hold farmers and agro-industrialists) need to be linked in one comprehensive and integrated development (Gobawu, 2016).

Getnet and Mehrab (2010) argue that rural-urban linkages are the stepping-stones towards rural transformation, leading to industrial growth. With the lowest level of urbanization in Ethiopia, both urban centers and their hinterlands are found underdevelopment and poverty. For example 70% urban dwellers are slum dwellers with poor basic infrastructures and housing facilities as well as areas of extreme poverty in this country (MoWUD, 2009).

### **2.3.6. Local Developments**

The objective of local development is to create a participatory environment that strengthens capacities of local institutions to implement socially inclusive and employment-rich interventions. In many regions of the world, the process of decentralization and democratization has greatly enhanced the role of local authorities in determining the avenue for economic growth in their communities. Encouraging local social dialogue and strengthening the managerial capacities of government and civil society are essential mechanisms behind the design and implementation of locally-led initiatives to advance the economic and social welfare of communities use. Local development is understood as a process of improvement of the economic, social and environmental situation of a given area based on the use of endogenous resources in order to improve the well-being and quality of life of its population. The most characteristic element of the concept is found in endogenous resources which take advantage of

the economic and social dynamics of a specific territory, so that its past and future is essentially related to its use ( Juan milan-garica, 2019).

Local economic development refers to the process in which local governments or community-based (neighborhood) organizations engage to stimulate or maintain business activity and/or employment. The principle goal of local economic development is to stimulate local employment opportunities in sectors that improve the community, using existing human, natural, and institutional resources (Blakely, 1994: xvi)

### **2.3.7. Areas of Policy Facilitating Urban-Rural Linkages**

The Imperial regime has drafted three successive five years plans from 1957-1974 (Eshetu, 2004). Later, since 1974, the Dergue regime replaced the imperial regime and adopted centrally planned economic system, which undermined the role of market to create linkages (Tegegne, 2008). Development policies and strategies during the Dergue period were characterized by slow urbanization, strict control of migration, industrialization by nationalization and weak interaction that widened the divide. Failure of the policy environment during the military regime to offer favorable condition to small-scale industries undermines the role of spatial and sectorial linkages for inclusive development (Tegegne, 2005).

Right after the downfall of the Dergue regime (1991), Ethiopia witnessed wide range of policy reforms (Taye, 2008). Thus, in the early 1990s, ADLI had been officially declared as mainstream development strategy of Ethiopia with the premise to increase agricultural production and sectorial linkages that would finally fuel industrialization (Tegegne, 2005). Since it anticipates urbanization to be the derivatives of the rural sector, it was highly criticized for neglecting the role of linkages for inclusive development (Asefa, 2006).

The argument for and against ADLI is endless with no consensus on its appropriateness to promote inclusive development and livelihood diversification. While supporters argue that rising income in the agricultural sector would offer huge market for non-agricultural sectors, critics on the other hand argue that urbanization should be prerequisite to narrow down the rural urban divide. In this regard, Dessalegn (2008) briefly described ADLI as a strategy that “walks in one leg”. Despite the criticisms, since 1995, Ethiopia has been implementing four consecutive five-

year development plans under the umbrella of ADLI: Sustainable Development and Poverty Reduction Program(SDRP) (1995/96-2005/06), PASDEP (20005/06-2009/10), GTP I (2010/11-2014/15) and GTP II(2015/16-2019/20). Principally, the ADLI concept was highly incorporated in the first two development plans.

SDPRP was pro-poor strategy enacted with special emphasis for rural areas where poverty, food security and agriculture have remained among the highest priorities. It promoted agricultural development and poverty reduction in rural areas by strengthening rural extension services, water harvesting, restructuring cooperatives and supporting microfinance institutions. Besides, it emphasized parallel development of agriculture, agro-processing and leather industry through mutual dependence. Even if the logical arguments included in SDPRP are sensible, it has failed to achieve its objectives due to the limited domestic market for farm outputs, weak linkages and slow urbanization (Asefa 2006). Since its focus was on agriculture, SDPRP did not give adequate attention to non-agricultural sector and urban areas until the year 2005. While SDPRP addresses many policy concerns in Ethiopia, it did not give much attention to the problem of rural-urban divides, markets and the demand side of production (Workneh, 2008). Similarly, its potential to fully form the basis for linkage that helps in transcending the divide for inclusive development was rather limited and dismal (Asefa, 2006, Getnet & Mehrab, 2010).

The challenges posed by long lasting rural-urban divide on inclusive development and livelihood diversification in Ethiopia contributed for the emergence of a more accommodative pro-urban view that was crystallized with the adoption of PASDEP (2005/6-2009/10). As one of the consolidated policy frameworks in the country's history, PASDEP states that "Rural-urban linkages need to be strengthened to maximize the poverty impacts and to take full advantage of the synergy for inclusive development and livelihood diversification" (MoWUD, 2009). It underscored the need to strengthen the urban agenda by promoting strong linkages between agriculture and industry to effectively tackle inevitable challenges of the rural urban divide on inclusive development and livelihood diversification (Gete, 2006).

Without doubt, PASDEP is a consolidated strategy aimed to fill gaps in SDPRP. It put forward, the availability of well-functioning marketing service, strengthened non-farm activities, improved rural access roads and telecommunications, spread of general education and technical-

vocational training in urban areas as preconditions to enhance the role of linkages for inclusive development and livelihood diversification (Getnet & Mehrab, 2010). PASDEP the need to strengthen linkages to reduce the negative impacts of migration and maximize growth by taking full advantage of the synergies through market integration, labor mobility and access to income earning opportunities (Meheret, 2008). Unlike SDPRP, PASDEP recognizes linkages as one of its four pillars within the urban development strategy. In PASDEP period, significant achievements were realized in enhancing the role of linkages towards inclusive development and livelihood diversification as the urban development plan was started to be implemented at national level (Meheret, 2008).

Overall GDP growth during the planned period averaged 11.3%, compared to 1.5% in 2001/02. Correspondingly, GDP per capita rose to \$357 in 2007/08 from a very low figure of \$127 in 2000/01 (UN-Habitat, 2014). Besides, during the plan period, physical infrastructure and human capital development expanded substantially. For most development analysts, regardless of the discouraging results recorded on overall wellbeing and equity, this was a dramatic achievement for a country that had been stuck at the low end of economic growth for a long period. Following its relative success, PASDEP was replaced by GTP I (2010/11-2014/15) with its emphasis on infrastructure development and export expansion. It was a more ambitious development strategy aimed to reboot the economy to a high growth path and a shift away from agriculture towards manufacturing. Thus, Rosenstein-Rodann's theory of big push approach, with its emphasis on infrastructure development and export expansion, formed the basis of GTP I. In GTP I, Ethiopia has accorded top priority to accelerated industrialization and boosted the urban agenda center stage, particularly the role of cities in promoting industrialization, capital accumulation and stronger global market integration.

NPC's (2015) data set on the performance of GTP reveals that significant results have been registered. A close look at on the figures shows that during the first four years of GTP implementation period (2010/11-2013/14), real GDP growth rate clocked at 10.1%. Agriculture, industry and services have registered an annual average growth rate of 6.6%, 20% and 10.7%, respectively. Thus, the growth rate registered during the first four years of GTP implementation was double the SSA (NPC, 2015). The absolute poverty index has declined from 29.6% in 2010/11 to 23.5 % in 2015/16 because of developments in the economic and social sectors and

better implementation of welfare programs (NPC, 2017). However, unemployment and inflation remain high that menace Ethiopia's attempt to encourage the role of linkages for inclusive development and livelihood diversification. Ethiopia also declares that progress in social development has also been inspiring, as school enrolments, health coverage, and access to drinking water have more than doubled in the plan period (MoFED, 2013, NPC, 2015).

Despite this fact, scholars (e.g. Miheret, 2014) argue that at the end of three years of plan implementation the results as reported by government can be described as mixed, with some sectors showing remarkable progress while in other sectors, the outcome has been discouraging. In sum, the preceding section presents policy synthesis of the major development strategies implemented in Ethiopia from 2000 to 2015. Besides, there are many sectorial level policy frameworks like land use policy, education policy, health policy, urban development policy, industrial and agricultural development policies that target to enhance the role of linkages for inclusive development in Ethiopia. Over all, the policy synthesis on major development strategies implemented in Ethiopia from 2000 to 2015 reveals mixed results accompanied with few successes and more failure stories to close the rural-urban divide and to promote societal wellbeing.

### **2.3.8. Role of Town on Urban-Rural Linkages**

The role of urban centers as spatial element in integrating the rural-urban economy is becoming vital. Small towns could play a significant role in linking rural-urban economies to attain a more balanced development in different ways. They act as centers of demand/markets for agricultural produce from the rural region, either for local consumers or as links to national and export market. They act as centers for the production and distribution of goods and services to their rural hinterlands. Such concentration is assumed to decrease costs and improve access to a variety of services, both for public and private and for all households and enterprises. Small towns are also centers for the growth and consolidation of rural non- farm activities and employment, through the development of small and medium sized enterprises or through the establishment of branches of large private enterprises. The demand for non-farm labor can improve rural households' incomes and decrease migration pressure on large urban centers/cities. However, the significance of these roles is determined by a much wider economic, social and

political context, including the nature, competence and accountability of governments located in such urban centers (Tadesse, 2012).

## **2.4. Empirical Framework of the Study**

### **2.4.1. Empirical evidence as worldwide**

Integrated development approach is recent phenomena and agriculture-industry production linkages have little attention from policy and institutional settings in most agriculture based countries. However, recent development paradigm in integrating and reinforcing the different complementary economic sectors and spatial areas are recommended for using many advantages of regional and global development (Altenburg, 2011).

Integrated regional development and URLs have the advantages of mutual growth and development of both rural and urban areas, multiplier socio-economic and environmental effects, adding value and creating sustainable market outlets, efficiency and diversity of production, elongated shelf-life for reducing risk of perishability, job opportunities in the urban-rural network and value chains (EEA 2005). Coates et al. (2011) claim that the role of urban centers for regional development can be seen in three perspectives: optimists (as promoting balanced development), pessimists (as source of rural impoverishment and backwash effects) and intermediate viewers as real decentralization with investment and resource mobilization. Furthermore, Dercon (2009) recommends that the argument for inter-sectorial and spatial linkages should not be which comes first or given priority but the question needs to be how to maximize and utilize the symbiotic and mutual development of key inter-sectorial linkages of urban and rural areas through appropriate and integrated national policies and institutional settings in poor and agriculture based countries.

As argued by the World Bank (2006), ignoring rural–urban linkages leads to inefficiencies and causes growth-inhibiting inequality. In fact, an important part of industrial growth in most low-income countries can be attributed to the forward and backward linkages with agriculture. E.g. processing and manufacturing of agricultural raw materials (forward linkages) and manufacturing of agricultural inputs (backward linkages).

According to the International Institute for Environment and Development (2009), rural-urban linkages can be defined as interactions across space (such as flows of people, goods, money, information and wastes) and linkages between sectors (for example, between agriculture, services and manufacturing). In broad terms, they also include 'rural' activities taking place in urban centers (such as urban agriculture) and activities often classified as 'urban' (such as manufacturing and services) taking place in rural settlements.

According to UN-HABITAT (2010), Rural-urban linkages include flows of agricultural and other commodities on the one hand from rural-based producers to urban markets to serve the needs of the urbanites and to the regional, national and international markets and on the other hand in the opposite direction, flows of manufactured and imported goods from urban centers to rural settlements. They also include flows of people moving between rural and urban settlements, either commuting on a regular basis, for occasional visits to urban-based services and administrative centers, or migrating temporarily or permanently. Flows of information such as information on market mechanisms and information on employment are also manifestations of rural -urban linkages. Financial flows include, primarily, remittances from migrants to relatives and communities in sending areas, and transfers such as pensions to migrants returning to their rural homes, they also include investments and credit from urban-based institutions.

#### **2.4.2. Empirical evidence from**

The interaction between urban and rural areas in a given area is inevitable. What matters is the degree of the linkages and the types of linkages that exist in the area. There are several factors which affect the linkages between rural and urban areas. Government policies, pattern of urbanization, structure of rural economy, socio economy relations, organization of production (production regimes), resource endowment, land tenure policy and land size, built environment are among others (Tacoli, 2004).

Urban-rural remittances are likely to raise rural incomes through facilitating the purchase of productive land, hybrid seeds and the use of fertilizers indeed, may inject scientific and technological innovations in agriculture (Oucho, 1996). The main problem is income contribution which, depending on who remits and who receives and for what purpose, may lead to income inequality and uneven rural development (Chilivumbo, 1985). Most studies have

shown that remittances go to different groups depending on relationship ties. The parents receive the highest proportion, a fact attributed to the tendency for immigrants to support old folks besides their families. It is probably because of the repayment of the so-called social debts incurred in education provided by parents (Essang & Mabawonku, 1974 as cited by Oucho, 1996).

The Organization for Economic Cooperation and Development (2013), adopt the rural-urban partnerships approach for economic development, since the approach helps economic development through enhancing the production of public goods, achieving economies of scale in public services, developing new economic opportunities and capacity building, improving administration, taking into account negative externalities, and dealing with the coordination failures. Likewise, Global Monitoring Report (2013) emphasizes the important role of the rural-urban linkages for poverty reduction.

### **2.4.3. Empirical Context from Ethiopia**

The preceding two sections highlight what has been studied on the subject in both developed and developing worlds. This section presents a consolidated empirical framework for the study by reviewing the available research works in Ethiopia across space and sectors.

#### **A. Rural-Urban Spatial Linkages (RUSLs) in Ethiopia**

In the last two decades, RUSLs attracted attention of multidisciplinary researchers in Ethiopia. There are physical linkage studies that examine impacts of traditional modes of transport and lack of quality road infrastructure in enhancing the role of rural-urban linkages for inclusive development. ERA (2003) indicates that nearly 80% of the population in Ethiopia depends on use of traditional modes of transport, which is slow, burdensome and time consuming.

Sisay (2004) argues that road network in Ethiopia is not only characterized by low ratio per population but also by poor quality. Tegegne (2006) assesses the status, challenges and opportunities of rural-urban linkages in Ethiopia. Tegegne underlines that the absence of adequate physical infrastructure increases the rural-urban divide. Similarly, Getnet and Mehrab (2010) argue that poor road network in the country is an indication of limited

linkages and wider divide that chain all kinds of efforts towards inclusive development. Thus, it limits amount of marketed surplus and adversely affects flow of goods.

Limited road length and quality not only hinders farmers' access to road facilities, but also worsens population lives at a distance of more than two km from all-weather roads. It also affirms that there is no incentive for agriculture to produce marketable surplus if there are not adequate and functioning road networks that meet the minimum standard. Using panel data, Ibrahim (2011) examines the road sector development and economic growth in Ethiopia. The result confirms that the average road density per square kilometer in Ethiopia was only 0.0468 km/km<sup>2</sup> compared to 0.30 km/km<sup>2</sup> for lower middle-income countries. Ibrahim argues that the wider rural-urban divide in the country is attributed to the concentration of road network in small and large urban centers. Therefore, to avert the challenges of infrastructure divide on inclusive development, Ibrahim concludes that a lot has to be done in expanding the road network equivalent to four folds of the existing road network in the country.

Admasuet al. (2012) investigates whether improvements in road infrastructure enhance RUSLs in Ethiopia. The econometrics analysis reveals that road sector development programs have brought significant improvement in road accessibility and linkage improvement. They argue that road network improvements are expected to have major implication for market accessibility and cost of doing business that in turn strengthens the rural urban linkages. Despite this fact, recently, Muluadam (2016) examines challenges posed by the rural-urban divide on inclusive growth and development. The findings suggest that Ethiopia is yet experiencing strict rural-urban divide that prohibits rural people from accessing various social, administrative, economic and cultural services from nearby urban centers. Muluadam argues that the lack of access to road infrastructure not only poses challenges on inclusive development and livelihood diversification, it also undermines the roles of linkage in bridging the divide and concludes that since Ethiopia's current capacity to close the rural-urban divide is limited, the country needs to put forth more effort to transcend the inherent rural-urban infrastructure divide that distorts inclusive development and livelihood diversification efforts. Like physical linkages, Rural-Urban Economic Linkages (RUEs) are key spatial linkage dimensions that affect development policy directions while shaping inclusive development and livelihood diversification endeavors. Empirical evidences in Ethiopia take in to consideration, diverse types of resource flows

including labor, natural resources, agricultural commodities, finance and industrial goods as common indicators of RUEs.

Most of the earlier studies (Mesfin, 1995, Tegegne & Tilahun, 1996, Mulat, 1996) conducted at different place and time across the country identifies weak RUEs measured in terms of all dimensions. Backer (1992) accomplishes the first consolidated study in the country by assessing role of the Guraghe people in enhancing RUEs. The finding discloses that the close links they maintained with their rural area of origin help the Guraghe to play key role in strengthening RUEs. A comparative study (Tegegne, 1999) on two towns and their hinterlands finds out that except consumption linkages all other linkages are non-existent. Besides, it proves that the virtuous circle model of rural urban linkage gets a poor fit and identifies a truncated linkage. Using longitudinal data from 15 villages in rural Ethiopia, Dercon and Hoddinott, (2005) explore the nature and consequences of RUEs. The core findings indicate that rural households undertake significant proportion of their economic transactions in local market towns, where they purchase half of their needed agricultural inputs and consumption goods and sell about 25-75% of their crops and livestock. It also shows that improved access to market towns affects economic activity and welfare. Thus, the authors conclude that improving the presence and quality of roads are important factors to bridge the rural urban divide. Using a CGE Analysis, Dorosh and Thurlow, (2011) examine the role of urbanization in rural and urban economic transformation in Ethiopia. Simulation results suggest that an urban oriented investment plan is less effective in narrowing the rural urban divide by supporting inclusive development and livelihood diversification efforts.

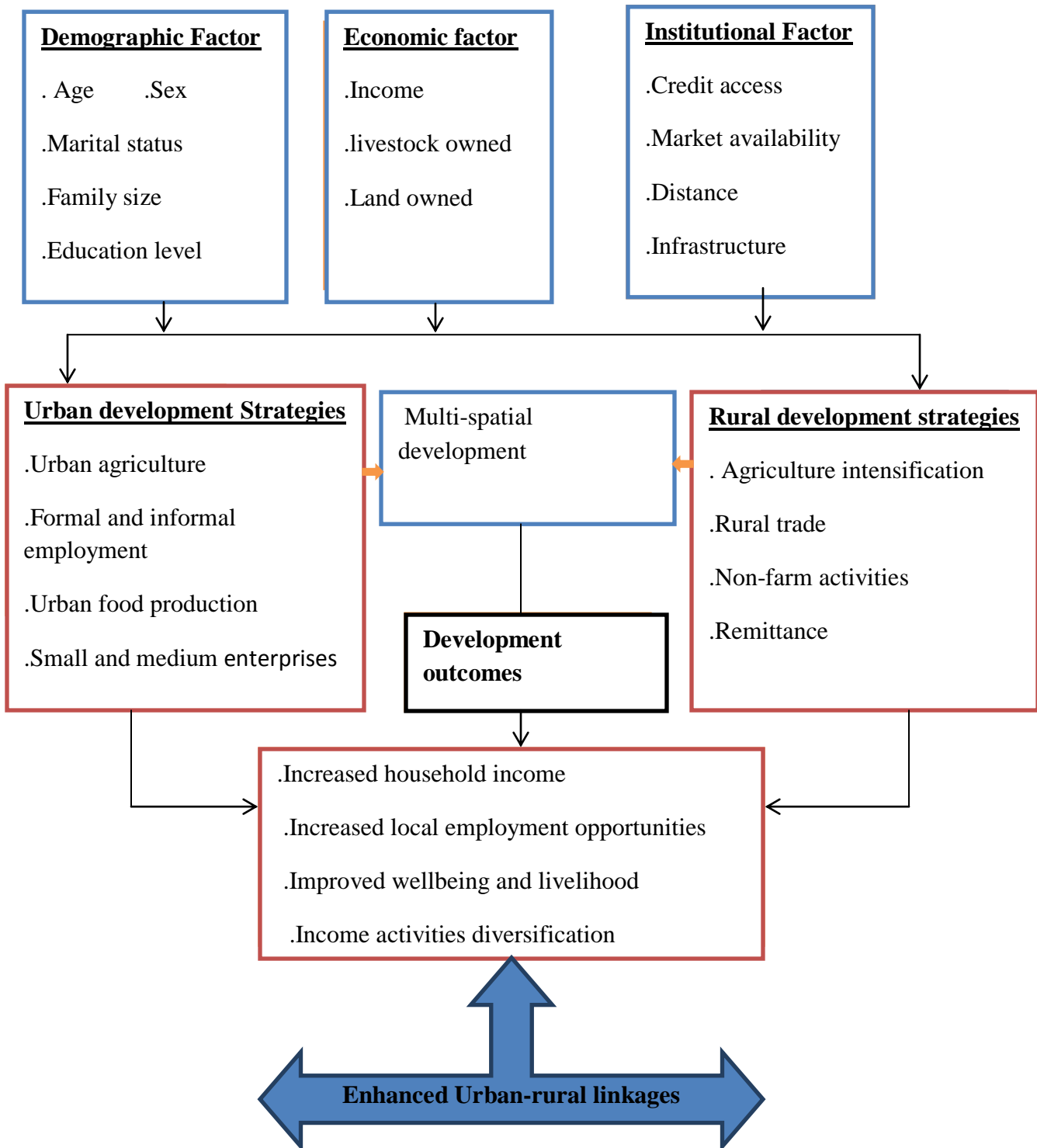
## **B. Rural-Urban Inter-Sectorial Linkages (RUISLs) in Ethiopia**

Besides the empirical evidences discussed above on spatial linkages, other studies examine the role of inter-sectorial linkages in enhancing inclusive development and livelihood diversification in Ethiopia. Under normal circumstance, the agriculture sector exhibits significant forward and backward production linkages with agro-industries. Despite this fact, the industry sector in Ethiopia is at its infancy stage. For instance, during GTP I (2010-2015), the share of the industry to real GDP remains as low as to 14.2%, while the service sector accounts 45.8% followed by the agriculture sector with 40% (NPC, 2015). Empirical evidences (Tegegne, 2006, PADMI, 2006) disclose that poor industrial performance coupled with traditional agriculture results in weak

RUISLs. Using Johansen co-integration analysis, Kassahun (2006) examines dynamics of sectorial linkages in the Ethiopian economy. The result identifies a long run linkage between output in the agricultural and industrial sectors and services. On the contrary, Dorosh et al. (2011) verifies that the weak sectoral linkage of rural industries in Ethiopia is the result of uneven distribution and low productivity.

The above studies conducted on URLs in Ethiopia are mostly focused on macro level and certain of micro level. It showed that presence of poor and biased inter-sectorial linkages in URLs due to mainly policies and institutional failure (Alemayehu 2007, Aynalem and Assefa 2011, Center of Statistical Agency 2011 and Tegegne 2005). Almost all the macro level research on URLs is working papers (Alemayehu 2007, Demese 2007, Gete 2007 and Tegegne 2007) which are either review research or very general policy implications for multidimensional URLs. However, macro level URLs researches are more general multidimensional and multidisciplinary such as economic (financial, production and consumption) linkages, socio-cultural (basic social services and gender) networks and linkages, population flow and migration, manufactured infrastructures (physical assets) and environmental (natural resources) linkages, spatial system linkages (Douglas, 2006). This study conducted on determinant of urban-rural linkages in terms of local developments a case of Tulu Bolo Town and surrounding rural areas at micro level.

## 2.5. Conceptual Framework.



Sources: - Developed by Researcher.

Figure 1:-Conceptual Framework

Critical insights from real world contexts lead researchers to sketch conceptual framework. Accordingly, Figure 2.5, in this conceptual framework, it is assumed that the entry point demographic factor, economic factor and institutional factor through by age, sex, marital status, family size, education, infrastructure, income, livestock, land, distance, credit access and market availability is the determinant of urban-rural linkages for local developments. Urban development strategies include urban agriculture, small and medium enterprises, formal and informal employment, urban food production, and social networks. Rural development strategies include agricultural intensification, migration, non-farm activities, rural trade and remittance. It has to be noted that apart from the more rural and urban development strategies that are supposed to be used by specific urban and rural households, the conceptual framework also identifies multi-spatial development that may use a combination of urban and rural sources.

The overall objective of the diverse urban and rural development strategies as indicated in the conceptual framework is to produce measurable development outcomes for urban, rural and multi-spatial livelihood households. Among others, the major urban and rural development outcomes include increased household income, increased local employment opportunities, reduced poverty and vulnerability, improved wellbeing and increased service demand. The conceptual framework predicts that development impacts from rural and urban dynamics and livelihood outcomes freely moves between urban and rural areas through enhanced rural urban linkages beneficial in promoting economic activities diversification. Finally, the conceptual framework is designed with the assumption that the overall result from the affect each factor and the conforming local development pillars together with the mix of urban and rural development strategies and the successive development outcomes as part of the general study have some implications for inclusive policy making at local development planning activities.

## **CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY**

### **3. Study Area**

Tulu Bolo town is the capital city of Becho woreda. Tulu Bolo is found 80km from Addis Ababa, and 34km from the zone capital woliso. The town has some basic social service such as asphalt road, improved gravel road and general semi-digital telephone. The town's topography is studied and the town is getting master plan. Tulu Bolo town is the oldest town in south west shoa zone next to the woliso town.

### **3.1 .Physical setting of the study area**

#### **3.1.1. Location and Area**

Tulu Bolo town is one of the capital Becho Woreda's in the south west shoe zone of Oromia regional national states. Bordering with Dawo, Seden Sodo, Woliso and Ilu woreda through North, South, West and East direction respectively. The town is approximately located at the 8<sup>0</sup>16'-9<sup>0</sup>56' North latitude and 37<sup>0</sup>05'-38<sup>0</sup>46' east longitude.

#### **3.1.2. Population**

In 1999, the population of Becho woreda was 104,261 of which 52,798 were male and 51,463 were women. Population of urban was 20,379 of which 10,223 were male and 10,156 were female (CSA, 1999).

#### **3.1.3. Climate**

Data for the climate of the study area obtained from national meteorological service agency. The climate of study area inferred from meteorological record of Tulu Bolo station. According to the traditional Agro-climatic zone which considers rain fall, climate and altitude, the study area lies within "Dega" and 'Woina Dega' climatic zone. About 97% of the woreda lies within Woina Dega type of climate and only 3% found in the Dega type of climate. A 'Woina Dega' area ranges between 2100m-2610m above sea level. The mean annual rain fall is 900 ml - 1100 ml in summer and winter respectively and the mean maximum and minimum annual temperature of the year is 16<sup>0</sup> c -25<sup>0</sup> c.

## **3.2. Economic Activities**

### **3.2.1. Agriculture**

Agriculture is the most common economic activity of rural population of Becho 'woreda'. farming system in the 'woreda' is mixed farming both crop production and animal rearing.

## **3.3. Infrastructure**

Urban-rural linkages are highly influenced by the availability of different types of infrastructures in a given area. Physical, social and economic infrastructure plays an important role in improving rural productivity and access to market. The availability and affordability of physical infrastructure is an important in connecting producers to local urban centers (Satterthwaite, 2003). Therefore rural producers' physical access to market and the extent of these urban centers' connection to wider networks of Regional, National and International urban centers are dependent up on the availability of infrastructure (Magersa, 2007).

### **3.3.1. Physical Infrastructure**

The only modern mode of transport available in Becho 'woreda' is road transport. The quality of road network in the study area is very poor compared to other parts of the country. The movement from one place to another within 'woreda' and with other 'woreda' is very difficult especially during rainy season. There is route through Becho 'woreda' to other town. There are four routes that connect Tulu Bolo town to other town.

## **3.4. Social Infrastructure**

### **3.4.1. Health**

Health institutions play an important role in order to have healthy citizen capable of producing those in turn contribute to economic development of the country. The town has one health center, three clinics (privately owned), one hospital.

### **3.4.2. Education**

Education is very important for development. The agricultural researches that provide extension services and other inputs; and technologies that increase production are gain through education.

The availability of schools and training centers are essential for linking urban and rural areas through the movement of capital human and financial elements. The 'woreda' has five KG, 24 primary schools (1-4), 19 junior schools (5-8) two secondary school (9-10) and one preparatory and one college and training centers like technical and vocational school (TVET).

### **3.4.3. Other Infrastructure**

There is only one route that connects the town to other towns. Communication infrastructures like telephone and postal services are important for social and economic activities of the communities. For example, telephone is one of the most important means of communication used by the traders to obtain recent information they need. Hence it has impact on the urban and rural linkage. In terms of telephone Tulu Bolo town has digital telephone service and in the study year, the mobile phone service becomes functional in woreda. Unfortunately, the woreda has one postal service. Other infrastructure like bank and microfinance service play important role in facilitating urban and rural linkages. However, in Tulu Bolo town have five bank and four credit and saving services like microfinance.



### **3.5. Research Design**

The hard problem that follows the task of defining the research problem is the preparation of design of research project, popularly known as research design (Kothari, 2004). Kothari defined a research design as the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to research purpose with a deep interest on procedure. More explicitly, the design decisions happened to be in respect of what was the study about, why was the study made, where the study is carried out, what type of data were required, where could the required data found, what periods of time the study included, what techniques of data collection were used and how data was analyzed, the type of universe, sampling unit, probability sampling and non-probability sampling methods were included within this research design. This study followed a mixed research approach whereby a qualitative and quantitative method of data collection was combined.

### **3.6. Sample Size Determination and Sampling Techniques**

The population under the study is the household respondents of Tulu Bolo town and surrounding rural areas of study employed sampling rather than census so as to increase the feasibility of the study. Sampling refers to a process selection of a representative sample from a target population to be used in a study to give desired characteristics about the population; where a sample is a smaller group or sub-group of the population obtained from the accessible population (Kothari, 2004). There are basically two types of sampling, which are probability (random) and non-probability (non-random) samples. On-random samples are sample selection techniques where the researcher selects the sample based on his own judgment. Random sampling generally incorporates some type of systematic selection procedure to ensure that each unit or element has an equal chance of being selected which always guarantees a representative sample from the population.

The study implemented a distance of 3kms (the nearest) to 28kms (far) from Tulu Bolo Town to be an area of intensive interaction between the urban and rural areas depending on potential resources linkages. Therefore, to conduct this study the researcher selected two (2) kebeles from the nearest by simple random sampling and one (1) from far purposively choosing from the total of nineteen (19) rural kebeles namely, Batu, Awash Bune and wesebi gna'a with their total HHs

of 125, 233 and 212 respectively, as well as one (1) urban kebeles, Tulu Bolo 01 kebeles with a total HHs of 947 was purposively chosen from the total of two (2) town kebeles. Generally, the total HHs of the study area was 1517 (WFEDO, 2020).

The sample size was calculated using the following formula proposed by Yamane Taro (1967) (as cited in Israel, 2003).

**Table 1: Distribution of sampled HHs heads**

<b>Sample kebeles</b>	<b>Km</b>	<b>Total HH</b>	<b>sample size</b>	<b>Percentage</b>
Batu	3	125	19	8.08
Awash bune	10	233	36	15.31
Wasabi gna'a	28	212	33	14.04
Tulu Bolo 01	-	947	147	62.55
<b>Total</b>		<b>1517</b>	<b>235</b>	<b>100</b>

**Source:** Woreda Finance and Economic Development Office, 2020

Assumptions to Determine Sample Size:

1. Degree of confidence was taken as 94%, is the probability that the confidence interval includes the true population parameter and to be worked out from table showing area under normal curve.

2. Margin of error ( $\epsilon$ ) was 5%, is the percentage point from which margin of error is different from the true population value.
3. Level of significance 5% is the probability of rejecting the null hypothesis by the test when it is really true.
4.  $N= 1517$  is the total population and  $n=$  is sample size.

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{1517}{1 + 1517(0.06)^2} = 234.78 \approx 235$$

Where;  $n$  = the desired sample size

$N$  = Population size of the household head

$e$  = level of precision 6%

To calculate the sample size for each kebeles equally,

$$n_1 = \frac{N_1 \times n}{N} = \frac{125 \times 235}{1517} = 19.36 \approx 19$$

$$n_2 = \frac{N_2 \times n}{N} = \frac{233 \times 235}{1517} = 36$$

$$n_3 = \frac{N_3 \times n}{N} = \frac{212 \times 235}{1517} = 32.8 \approx 33$$

$$n_4 = \frac{N_4 \times n}{N} = \frac{947 \times 235}{1517} = 146.7 \approx 147$$

Where  $n_1$ ,  $n_2$ ,  $n_3$  and  $n_4$  are the sample size for Batu, Awash Bune, wesserbi gna'a and Tulu Bolo 01 kebeles respectively.

Therefore,  $n = n_1 + n_2 + n_3 + n_4 = 19 + 36 + 33 + 147 = 235$

Hereafter, the researcher decided to know who was his first respondent; since a list of all respondents were constructed within each four kebeles, systematic random sampling was then Employed to get equal interval as below.

$$\frac{N_1}{n_1} = \frac{N_2}{n_2} = \frac{N_3}{n_3} = \frac{N_4}{n_4}$$

$$K = \frac{1517}{235} = 6$$

Where  $K$  represents; random interval for each two selected status to get the number of respondents' included in the sample. Then the researcher used lottery method 1 and 6, and picked one number randomly as a random start which was number (2) and this number was used as the first researcher's respondent and to get the second respondent, the researcher added random start (2) to random interval (6) until he got total sample size of 235 respondents' from four kebeles. This all processes that the researcher followed to accomplish the study ensured equal magnitude of the respondent's from the four kebeles and minimized the unfairness of the researcher in sampling and data collection procedures.

### **3.7. Data Type, Sources and Data Collection Procedures**

Throughout data collection processes, survey questionnaires were supported or collected by enumerators recruited from University graduate students in the district while, key informant interviews, FGD and observations were carried out by the researcher. Survey was administered at home and place of work of respondents. Survey questionnaires were gathered by interviewing household heads and other family members who have deep knowledge about the issue.

#### **3.7.1 Primary Data**

The primary data are those which were collected as a fresh and for the first time, which were original in character. In the study at hand, data were collected from direct communication with three different groups of respondents through pre-tested, semi-structured questionnaires from the unit of analysis namely household. In addition, the different types of information regarding urban-rural linkages for local developments were obtained by face to face interviews and focus group discussion from rural households' and government officials in the district. Furthermore, the researcher made observations during households' were participated in different economic activities and living house of the household where they stored their production. In the same way, photographs were used as a technique of data collections and documentations in primary data collection.

### **3.7.1.1. Key Informant Interview**

The researcher decided to work this technique to collect data from experts on issues related to urban-rural linkages for local developments. Because, elites are influential and well informed individuals in the organization or community, and supposed to provide relevant information to the research because of their expertise in their own specialized fields (Marshall & Rossman, 2014). For that reason, key informants for this study were selected purposively based on the assumptions that, they have knowledge regarding the theme under investigation and hence, provided adequate data. This enabled the researcher to collect detail data from informants; kebele and district officials. More important interviews were conducted with different individuals at different administrative levels. At Kebele level, each four-kebele's chairperson or manager, were interviewed while, at the district level, officials from urban development office (one people) and were the main targets.

### **3.7.1.2. Focus Group Discussion (FGD)**

According to Liam puttung (2011), when methodologically viewed, FGD comprises a group of 6-8 individuals who come from the same cultural and social status or who have interrelated experiences or concerns. However, the objective of conducting FGD was not to reach an agreement on the issue discussed. Rather the purpose was to encourage the range of diverse responses that offer a greater understanding of the opinions, perceptions, attitudes and behaviours of the participants on the research topic (Liamputtong, 2011). For the current study, FGD were employed to generate data that complements survey and it was more useful to tackle objective that focuses on challenges facing households. Four FGD (one for each Selected Kebele) were undertaken. Discussants were selected based on their age, sex and development groups to which they belong.

No participant was less than 18 years. Health extension workers were the main role players in selecting discussants from the sample households. The number of participants per discussion group were 6 (1 were females) in Batu Kebele, 7 (3 females) in Awash Bune kebele, 7 (4 females) in wesorbi gna,a and 8 (4 females) were from Tulu Bolo 01kebeles. The proportion of male and female participants was based on their availability during the schedule of discussion. Accordingly, all FGD were conducted at the convenient time of discussants based on appointment negotiated with facilitators; kebele chairperson. While discussions in Batu and Awash Bune were held at a place where people work on threshing, the remaining two discussions were held at a time of eddir associations. On average FGDs last for 1 hour for each four kebeles.

### **3.7.2 Secondary Data**

Secondary data incorporates resources that have already been gathered for another purpose, which are available and easy to get for other purposes. Therefore, secondary data tools are significantly and principally crucial to verify and explain why the topic under study is selected (White, 2010). Besides, secondary data was important to get concepts and ideas that cannot be obtained from primary data gathering mechanisms and to corroborate data gathered from primary data collection tools. Thus, the study at hand used secondary data from different books, journal articles, town's government offices, internet sources, previous dissertations available on the internet and materials relevant to this thesis were included.

### **3.8. Methods of Data Analysis**

The collected data were analyzed using STATA version 13. So, qualitative data that resulted from note taking and recording activities was transcribed, categorized and organized into objectives of the study and expressed to give concrete meaning. On the other hand, quantitative data analysis was mediated by statistical tools of data processing Stata version 13. Two types of data analysis, namely descriptive statistics and Econometric models were used to analyses the data collected from sampled respondents of the town.

### 3.8.1. Descriptive Statistics

Descriptive statistics is one of the techniques which could be used to summarize information (data) obtained from the respondents. By applying descriptive statistics such as minimum, maximum mean, frequency of appearance, standard deviation etc. one can compare and contrast different categories of sample units with respect to the desired variables.

### 3.8.2. Model specification/Model development

In addition to the descriptive analysis, in order to capture the degree of influence of some of the determinant of urban-rural linkages for local development, econometric analysis was applied.

Econometric analysis allows inferring from the data through analysis of the association between two or more variables and how several independent variables may explains the variance in a dependent variable. Therefore, out of the t-normal distribution, the F-distribution, the confidence interval and probability values of associations among the variables. Due to the nature of the dependent variable (being dichotomous), logistic regression was developed which allows the establishment of a relationship between a binary outcome variable (the dependent variable) and a group of predictor variables.

$$\text{Logit}(p) = \log(p / (1 - p)) = \beta_0 + \beta_1 \times x_1 + \dots + \beta_k \times x_k + \epsilon_i \dots\dots\dots (1)$$

The parameters in the logistic regression model can be estimated by marginal effect.

For this study, the overall logistic function equation which includes the demographic, institutional, administrative factors and factors of economic variables are:

$$\text{Predicted logit of Competition} = \beta_0 + \beta_1 \times \text{Age} + \beta_2 \times \text{Sex} + \beta_3 \times \text{Marital status} + \beta_4 \times \text{Education level} + \beta_5 \times \text{Family size} + \beta_6 \times \text{Livestock ownership} + \beta_7 \times \text{Distance from town} + \beta_8 \times \text{Land owned} + \beta_9 \times \text{Infrastructure facility} + \beta_{10} \times \text{Income} + \beta_{11} \times \text{market availability} + \beta_{12} \times \text{Credit access} + \text{Error term.}$$

Where  $X_1, X_2,$  and  $X_3 \dots X_k$  are predictors,  $\beta_0, \beta_1,$  and  $\beta_2 \dots \beta_k$  are parameters and  $\epsilon_i$  are error terms.

### 3.8.3. Diagnostic Test

The cross sectional data are obtained from the determinant of urban rural linkage for local development on 12 variables with the total number of observations at 235. The diagnostic tests

done for the analysis of determinant of urban rural linkage for local development is multicollinearity and Contingency Coefficient test.

### **3.8.3.1. Multicollinearity Test**

As referred by Brooks (2008) in the construction of an econometric model, it may happen that two or more variables giving rise to the same piece of information are included that is, the researcher may have redundant information or unnecessarily included related variables which are called a multicollinearity problem. Before fitting important variables into the regression models for analysis, it was necessary to test multicollinearity problem among continuous variables and check associations among discrete variables, which seriously affect the parameter estimates. Therefore, the existence of multicollinearity was checked among each explanatory variable which were used to measure the degree of linear relationships among continuous explanatory variables and contingency coefficient was used to check for associations among discrete variables. As a rule of thumb, if the VIF is greater than 10, the variable is said to be highly collinear (Gujarati, 2003). A measure of multicollinearity associated with the variance inflation factors for a variable ( $X_i$ ) was computed as:

$$VIF (X_i) = \frac{1}{1 - R_i^2}$$

Where,  $R_i^2$  are the multiple correlation coefficients between explanatory variables, the larger the value of  $R_i^2$  is, the higher the value of VIF ( $X_i$ ) causing higher collinearity in the variable ( $X_i$ ).

### **3.8.2.2. Contingency Coefficient**

Contingency coefficient is a symmetric measure which indicates the strength and significance of the relation between the row and column variables of a cross tabulation. This measure of association is based on chi-square test. The value ranges between zeros to one, with zero indicating no association between the row and column variables and values close to one indicating a high degree of association between the variables. Contingency coefficient analysis was carried out to check for the strength of relationship among discrete variables. The decision criterion was that variables with contingency coefficient closer to one would be avoided from further consideration in the multivariate analysis.

$$CC = \frac{\sqrt{x^2}}{\sqrt{n + x^2}}$$

Where CC = contingency coefficient,  $x^2$  = chi-square random variable and n = total sample size. Consequently, the dummy variables were tested by using contingency coefficient which ranges between 0 and 1, a variable with contingency coefficient below 0.75 shows weak association and value above it indicates strong association of variables (Gujirat, 2003). The contingency coefficient for the dummy variables included in the model was less than 0.75 that didn't show multicollinearity to be a serious concern.

### **3.9. Description of Variables and Measurement**

The variables were identifying during an extensive literature review. The factors that were examined in this study are those which were found to be significant in most of the previous studies. To study the determinants of URLs, the researcher hypothesizes a relationship between the URLs and the following identify independent variables.

#### **3.9.1. The Dependent Variable**

**Enhanced Urban-Rural linkages:** -is the dummy dependent variable and it refers to “enhanced URLs” and “not enhanced” labeled by 1 and 0 respectively.

#### **3.9.2. Description of Explanatory Variables**

Based on the review of the literatures and on the sustainable frame work, the selection of explanatory variables which have logical and justifiable rational in determining the urban-rural linkages for local developments based on spatial and sectorial linkages. Thus, age, gender (sex), level of education, marital status, family size, land owned, access to credit, distance from town, access to infrastructure facility, livestock, income and market availability were included.

**Age of a Household Head (Age):** It is a continuous variable measured in years. Thus, younger household head are expected as more linkage, especially with production contribution than that of older household heads (Berhane, 2016).Hence, the researcher expected positive relationship between age of respondents household and urban-rural linkages.

**Sex of household head (Sex):** It is a dummy variable and labeled by male 1 and female 0. Akkoyunlu (2013) in his study identifies gender is an important factor in shaping urban-rural linkages. Revealed that women household heads may have lower linkages to market than the male household heads. Hence, the expected effect of gender being male on household linkages is positive.

**Marital status of household (MSHH):** It is categorical variable and labeled by 1, single, 2, married, 3, widowed, 4, divorced. Household heads that are married have more family and social responsibilities than the unmarried household heads. Those who have such responsibilities are expected to visit frequently the town for different needs and services (Berhane, 2016). Hence, the researcher expected positive relationship between marital status and urban-rural linkage.

**Educational level of household head (ESHH):** It is a continuous variable measured in years of schooling. Educational level is expected a positive effect on URLs (Berhane, 2016). Hence the researcher expected positive relationship between education level of household and URLs.

**Family size (FS):** it is a continuous variable that refers to family members of the household. A household with large family member forced to diversify their activity in order to feed their family than that of a household with small family size (Berhane, 2016). Hence researcher expected large family member stronger linkage than those with small family size.

**Livestock ownership (Lo):** it is a variable and measured in TLU (tropical livestock unit). This refers to the total livestock holding of the household head is important source of wealth to the rural household heads (Berhane, 2016). Hence, the researcher expected positively affected URLs.

**Distance from the town (DT):** It is a variable measured in km and labeled by 1 near and 2 far. The farmers who are adjacent (closer) to the urban center are expected to have higher probability of linkage (Berhane, 2016). Hence a house holds linkage to the urban center expected positively affected on urban-rural linkages.

**Land owned (LO):** it is a variable measured in hectares and labeled by 1 if have and 0 not. Cultivated land has a direct relation with crop product and positive effect on urban-rural linkages (Berhane, 2016). The researcher also expected positive effect on urban-rural linkages.

**Infrastructure facility (IF):** it is a variable and key factor that determines urban-rural linkages. The study by (Okpala, 2003) concludes accesses to infrastructure facilities have a positive effect on URL in the study area. The researchers also expected a positive sign on urban-rural linkages and labeled as 1 for access to infrastructure and 0 not.

**Income (INC):** it is a continuous variable measured in Birr and pillar that positively determine urban-rural linkages (Baker, 2006, & Tacoli, 2006). Hence, Income of household head was expected positively effect on URLs.

**Marketing availability (Mav):** it is a variable that refers to the availability of marketing for households of the study area. The study conducted by White (2005) revealed market availability was a key factor that determines urban-rural linkages positively. The researchers also expected positively determine urban-rural linkages and labeled as 1 access to market and 0 not.

**Credit (Cr):** it is a variable measured in birr. This refers to the possibility that households can access financial services like deposit and other related services. Credit was key factors that determine urban-rural linkages positively (Berhane, 2016). The researcher also expected positive effect on urban-rural linkages and labeled as 1 for credit access and 0 not.

**Table 2: Summary of Definition and Measurement of Explanatory Variable**

Types of factor	Variable	Description	Measurement	Expected sign
<b>Demographic factor</b>	Age	Age of house hold	Continuous (year)	+
	Sex	Sex of house hold	Dummy(1=male,0=	+
	marit	Marital status hh	Categorical	+
	fmly	Family size	Numbers	+
	edu	Educational levels hh	Year of schooling	+
<b>Economical factor</b>	inc	HH income	In birr	+
	lvst	Livestock owned	TLU	+
	land	Land owned	In hectare	+

<b>Institutional factor</b>	dist	Distance from town	In km	+
	infr	Infrastructure facility	Dummy(1=yes 0=	+
	crd	Credit access	Dummy(1=yes 0=	+
	Mav	Market available	Dummy(1=access,	+

**Source: Researcher's own expectations based on literature.**

### **3.10. Ethical Consideration**

Johnes and Phillip (2012) noted that ethical issues which occur during a fieldwork are complex. However, they suggested unintended harm on the participants can be reduced by following appropriate ethical principles. A way of solving this potential problem is by having a clear understanding of how to conduct fieldwork. Therefore, the study started its operation after official letter was issued by Addis Ababa University, Urban Development and Livelihood Department. The researcher took the letter to secure approval of concerned administrative structures and the research participants during fieldwork. However, where the letter seems unlikely to function oral informed consents were made with the respondents prior to undertaking the main research task. This was done in line with negotiating that the study was free of any harm on the respondents or discussants. Intensive rapport was made with respondents before any data collection tasks. Respondents were convinced that the data serve only academic purpose and have no effect on them. Above all respondents were assured on the basis of their confidentiality. No names of respondents were disclosed in any data analysis section.

## **CHAPTER FOUR**

### **4. Results and Discussions**

This result and discussion chapter is structured into different sections describing; demographic characteristics of sampled rural and urban households, form of linkages and role of urban-rural linkages for local development were discussed. Besides descriptive statistical results and econometric analysis result (binary logistic regression model) and estimation procedure in addition to explanation given on the definition and expectation of the hypothesized variable.

#### **4.1. Demographic Characteristics of Rural and Urban Respondents**

Table 2.1. showed the basic demographic characteristics of the sample rural households. Males account for 85% of the samples population. More than 78% of the sample rural households were married; the rest were either divorced or widowed. In terms of education, about 69.32% of the respondents had attained at least primary school (1-8 grades), about 23% of households who complete secondary schools and 6% who attained at least college. So educational have positive implication on the urban rural linkages for local development particularly and on economic and social development in general. Educated people are mostly engaged in non-agricultural activities like trade, industries and service. These conditions facilitate urban-rural linkages and transfer to industrialization.

The age structure has also significant implication on the economic activities of the households. As indicated below majority of the sample in the study area shows that, there belong to 31-43 age group. This age group is adult and productive age and is independent. These productive people are the factors of production and they have positive implication on development and also urban rural linkages.

The basic demographic characteristic of the sample urban households is provided in Table 2.1. More than two-third (77%) of the sample households was male-headed. This was consistent with the national data that over 64% of urban households headed by males (EDHS, 2012). The average family size of the sample population was 6, which was slightly greater than the national urban average (3.7) (EDHS, 2012). Moreover, the majority of the respondents had at least secondary education level that was quite higher than the rural counterparts with only 24% having secondary educational attainment. On the other hand, age has direct link to productivity. Youth

are the one who contribute to economic development. As indicated below majority of the sample in the study area shows that, there belong to 31-43(44.2) age group. More than 75% of the sample urban households were married; the rest were either divorced or widowed

**Table 3: Basic Demographic Characteristics of Sample Rural and Urban Households**

<b>Variable</b>	<b>Rural</b>	<b>Num</b>	<b>Perc.</b>	<b>Urban</b>	<b>Numb</b>	<b>Perc.</b>
Average age	18-30	15	17.04	18-30	36	24.5
	31-43	45	51.13	31-43	65	44.23
	44-56	17	19.32	44-56	29	19.73
	57-69	8	9.1	57-69	10	6.8
	>69	3	3.41	>69	7	4.76
	<b>Sub-total</b>	<b>88</b>	<b>100</b>	<b>Sub-total</b>	<b>147</b>	<b>100</b>
Sex	female	13	18.88	female	34	23.13
	male	75	85.22	male	113	77
	<b>Sub-total</b>	<b>88</b>	<b>100</b>	<b>Sub-total</b>	<b>147</b>	<b>100</b>
Education level of rural household	1-8	61	69.32	1-8	33	22.45
	9-12	21	23.86	9-12	89	60.5
	>12	6	6.82	>12	25	17.01
	<b>Sub-total</b>	<b>88</b>	<b>100</b>	<b>Sub-total</b>	<b>147</b>	<b>100</b>
Marital status	single	5	5.68	single	17	11.56
	Married	69	78.4	married	110	74.84
	widowed	6	6.82	widowed	13	8.83
	divorced	8	9.1	divorced	7	4.76
	<b>Sub-total</b>	<b>88</b>	<b>100</b>	<b>Sub-total</b>	<b>147</b>	<b>100</b>
Average of family size	6			5		

**Source: Field survey, 2020**

Households in Ethiopia are largely male-headed. Males head about 74% of the households in the country while 77% males head the rural households (EDHS, 2012). This fact was corroborated by the present study where it was found that on an average 85% of the sample males headed rural households. Similarly, the average family size of the nation was 4.6 and that of the rural population was 4.9 (EDHS, 2012). The average family size of the sample (6) was slightly higher than the national average and almost greater the average family size of the rural population.

#### 4.1.1. Occupation of Rural Households

In the rural areas of Tulu Bolo town, the most common occupations is both animal rearing and crop cultivation which account for 68.2% of all activities. Only 12.5% of the sample households are crop producers without animal rearing and 9.1% are engaged only in animal rearing. 10.22% of the total rural sample households is engaged in trade and crop production (See table 2.2).

**Table 4: Occupation of rural households**

Occupation of rural household	Frequency	Percentage
crop producer	11	12.5
animal rearing	8	9.1
mixed	60	68.2
Petty trade and crop producers	9	10.22
Total	88	100

**Source: Field survey, 2020**

Besides, traditional local drink is an essential home-based non-farm activity absorbing large labor mainly women. Market observation showed that women sell local drinks along with their petty trade. Though most of the drinks are produced at home, there are important beginnings in Awash Bune kebele where retailing different drinks is undertaken by purchasing it from towns. Such activity was noted by a 45 years-old woman stating as below during FGD.

*“I started traditional brewing under limitation of labor to work in farming. My husband was died. I have no child who can farm. Thus, I rented out all plots and engaged in brewing as a main occupation. I prepare at least nine to twelve liters of areke within one week given that I am*

*well and house utilities are bought. I sell one liter of areke for 60 ETB for outside house use, 70ETB if it is retailed at home. For this purpose I visit frequently the town”.*

#### **4.1.2. land Holding**

Land is an important natural capital for people residing in rural areas. It is a critical production factor which determines the type of crops that are grown and the size of the crop produces. Under the subsistence agriculture system, land holding size plays a significant role in influencing crop production and households’ food security. The average land holding size of the sample population found out to be approximately 0.48 hectares. This was relative to the Wereda’s average land holding size, which was 0.5 hectares per household. However, it was by far lower than the national average (0.81 hectare per household). Table 2.3 presented three categories of land holding size and the proportion of farmers that fall under each group. Only 16% of respondents had land holding size of greater than 0.5 hectare. The majority of the respondents (60.23%) owned 0.5 hectare, whereas 24% of households owned less than 0.5 hectare.

**Table 5: Land holding size**

<b>Land holding size</b>		<b>Number</b>	<b>Percent</b>
Land holding size(ha)	>0.5	14	15.91
	=0.5	53	60.23
	<0.5	21	23.86

**Source: own field survey, 2020.**

#### **4.1.3. Occupational of urban households.**

Urban households have different occupations like factory workers, government employees, carpenter/builder, cooperatives, laborers, pensioner, tailor, NGO and trader. The following table shows the different occupations of the urban respondent

**Table 6: Occupation of urban respondents**

<b>Occupation type</b>	<b>Number</b>	<b>Percentage</b>
Factory workers	31	21.1
Government employees	17	11.65
Carpenter/builder	18	12.25
Cooperatives	25	17
Laborers	14	9.5
Pensioner	7	4.76
Tailor	6	4.1
NGO	8	5.44
Trader	21	14.3
<b>Total</b>	<b>147</b>	<b>100</b>

**Source: Own Field Survey, 202**

The figure in table 11 showed that Factory workers and government employees account for 21% and 11.65% of the sample urban respondents respectively followed by carpenter/builder/weaver (12.5%). Some respondents were also organized under different cooperatives in the town. Some of the urban households particularly those who were involved in weaving and petty trade got their inputs (butter, hen, egg, etc.) from the surrounding rural areas.

#### **4.2. Descriptive Statistical Analysis**

The study has used descriptive statistics in order to give the readers more understanding about the study variables that are being analyzed. Descriptive studies produced the mean, minimum, maximum and standard deviation for each variable. Accordingly, the descriptive statistics for all variables are presented below in table 3.

**Table 7: Summary of descriptive statistics**

<b>Variable</b>	<b>Obs</b>	<b>Mean</b>	<b>Std.Dev</b>	<b>Min</b>	<b>Max</b>
EURL	235	0.455319	0.499063	0	1
Age	235	56.31489	16.64751	28	99
Sex	235	0.8	0.400854	-	-
edu	235	9.06383	2.92794	2	15
mrt	235	2.144681	0.630699	1	4
fmly	235	7.165957	2.342954	1	15
land	235	0.795745	0.404017	-	-
lvst	235	0.655319	0.476279	-	-
infr	235	0.744681	0.436971	-	-
dist	235	0.817021	0.387474	-	-
crd	235	0.723404	0.44827	-	-
mrkt	235	0.919149	0.273188	-	-
inc	235	69548.94	39076.2	34000	61100

### **4.3. Forms of linkages in the study area.**

Urban-rural linkages have different forms and dimensions. However, this study focused on the analysis of spatial and sectorial linkages. A spatial linkage in the study area shows flow of goods, money, and technology and information between urban and rural areas. Sectorial linkages are the interaction between agriculture (crop production, livestock production) and manufacturing (use of agricultural inputs such as fertilizer, improved seeds, herbicides and pesticides) sectors. In addition to this, marketing linkages (flow of crop production, livestock and vegetable/fruits), services delivery linkages (agriculture tools, telecommunication, market, education and health) are often linkage seen between Tulu Bolo town and surrounding rural area.

**Table 8: Form of Urban-Rural Linkages**

<b>Form of linkages</b>	<b>Urban respo.</b>	<b>Percent.</b>	<b>Rural respo.</b>	<b>Percent</b>
Sectorial	71	48.3	57	64.8
Spatial	76	51.7	31	35.2
<b>Total</b>	<b>147</b>	100	<b>88</b>	100
<b>Grand total</b>	<b>Urban + Rural = 235</b>			

As described in Table 4 above, out of the total urban respondents 71(48.3%) have sectorial form of linkages and 76(51.7%) have spatial form of linkages and however out of the total rural respondents 57(65%) have sectorial form of linkages and 31(35.23%) have spatial form of linkages.

#### **4.3.1. Spatial linkage**

The flows of people moving between rural and urban settlements, either commuting on a regular basis, for occasional visits to urban-based services and administrative centers, or migrating temporarily or permanently. Flows of information between rural and urban areas include information on market mechanisms from price fluctuations to consumer preferences and information on employment opportunities for potential migrants. Financial flows include, primarily, remittances from migrants to relatives and communities in sending areas, and transfers such as pensions to migrants returning to their rural homes, and also investments and credit from urban-based institutions UN Habitat (2010).

As indicated in Table 4.3, similar with the above study in Tulu Bolo town and surrounding rural areas, spatial linkage is includes flows of service, financial, technology and information across urban-rural areas.

**Table 9: Respondents of spatial type linkages**

Type of spatial linkage	Freq.	Percent	Cum.
Financial	41	38.32	38.32
Service	32	29.91	68.23
Information	21	19.63	87.86
Technology	13	12.15	100
<b>Total</b>	<b>107</b>	<b>100</b>	

Source: Self compiled from Survey Questionnaire, (2020)

As described in Table 4.3 above, out of the total respondents of their response 41(38.32%) have financial linkages, 32(29.91%) have service linkages, 21(19.63%) have information linkages and 13(12.15%) have technology linkages. These spatial flows join with inter linkages between Tulu Bolo town and surrounding rural areas both at the household level and at the level of local economies.

#### 4.3.2. Sectorial Linkages

Sectorial linkage is the interaction between agriculture (crop production, livestock production) and manufacturing (use of agricultural inputs such as fertilizer, improved seeds, herbicides and pesticides) linkages between Tulu Bolo towns and surrounding rural areas.

**Table 10: Respondents of sectorial type linkages**

Type of sectorial linkages	Freq.	Percent
Agriculture and service linkage	75	58.59
Manufacturing linkages	53	41.4
<b>Total</b>	<b>128</b>	<b>100</b>

Source: Own field survey

As described in Table 4.4 above, out of the total respondents 75(58.59%) have agriculture linkages and 53(41.4%) of them have manufacturing linkages. This implies rural based producers to urban markets, both for local consumers and for forwarding to Tulu Bolo town and, in the opposite direction, flows of manufactured and imported goods from urban centers to surrounding rural residents (forward and backward linkage).

#### **4.4. Marketing output of rural households**

Small town connected to large centers are expected to remove the problem farmers face in marketing agricultural products and bringing products to market and respond to the available demand in the town. Traders also avoid high cost of collecting products from discrete settlements. On the other hands if market towns are not connected to their hinterland subsistence production will prevail and there will be little brought to market (Tegegne, 2001:56). Study conducted in 15 Ethiopia villages by Dercon and Hoddinott (2005) cited in Eshetu (2007) revealed that rural households have sold 25%-60% of their grain crops and 75% of their livestock in nearest small town in a year.

As indicated in Table 5, similar with the above study in Becho woreda rural areas, about 63% of the respondents rural households described that they produced cereal crops for family consumption as a result they sell only 26.14% of their product. The majority of the cereal production was used for consumption. It was sometimes sold when there was a surplus or a need for cash income. However, about 73% of the respondents' rural households reported that they sold some part of their livestock and livestock products and about 57% of the rural households sell their vegetable products' farmer with large size of land able to produce surplus production, to the extent, surplus production is high. The possibility of urban and rural exchange would be increased. Concerning the animal rearing, the rural farmers are used advanced ways of animal rearing. The output gain from animal rearing is very high. The high agricultural output and the advanced animal rearing practices in the study area encourage urban-rural linkage as well as local development.

**Table 11: Reason for crop production and sale of product**

Type of production	Reason for production		Sold some part	
	Food	Food/income	Yes	No
Cereal crops	55(62.5)	23(26.14)	23(26.14)	55(62.5)
Livestock	–	88(100)	64(72.73)	24(27.3)
Vegetable/fruits	–	50(56.82)	50(56.82)	28(31.82)



**Figure 3: Market output cereal crops, livestock and vegetable/fruits.**

#### **4.7. Production Linkages**

Production linkages are manifested in the forms of backward and forward production linkages. Backward linkages results when the rural farmers use agricultural inputs such as improved seeds, pesticide, herbicides and fertilizer. While forward production linkages involve processing and distribution of agricultural outputs by surrounding rural household. The shortages and low productivity of farmland and unaffordability of agricultural inputs results in subsistence production among the farmers. This low productivity leads to low supply to the market, which

weakens the forward and backward sectorial linkages between agriculture and non-agriculture sectors, and results in weak LED. The off-farm and nonfarm activities are unable to provide continuous income as they are casual jobs, and thus are a temporary remedy for food security. When it is time for cultivation, the farmers resort to their small-scale farm, which completes the “survival” strategy of rural-urban linkages. Most rural and urban households rely on the combination of farm and nonfarm activities to reduce risk and uncertainties of poverty. However, their agricultural production does not go beyond subsistence level, and thus its contribution to sustainable LED is insignificant. The farmers, traders, and small scale manufacturers engage in rural-urban linkages as a self-guided survival strategy (World Bank, 2006).

As indicated in Table 6, similar with the above study in Becho woreda rural areas have forms of backward and forward production linkages. Backward linkages results when the rural farmers use agricultural inputs such as improved seeds, pesticide, herbicides and fertilizer.

**Table 12: Number of Rural households that has used agricultural inputs the year (2019/2020) and costs incurred**

<b>Agricultural inputs</b>	<b>Av.expenditure (birr)</b>	<b>Freq.</b>	<b>Percent</b>
Fertilizer	1153.5	88	100
Improved seeds	780.25	56	63.64
Herbicides	97.35	77	87.5
Pesticides	42.5	68	77.3

**Source: Own field survey, (2020)**

Table 6 depicts that the predominant types of input used by rural farmers in Becho woreda was fertilizer. Almost all sample household used fertilizer last year. However, this does not mean that they used sufficient amount of fertilizer. These small amounts of utilization of fertilizer reduce the amount of crop production which in turn limits urban-rural linkages in terms of crop production and supply to the market. It is only about 88% and 77.3% of the respondents reported that they used herbicides and pesticides respectively. About 63.64% of respondents have used improved seed on the 2019/2020 production years.

Training delivered by agricultural development workers was a pillar for increasing the respondents' agricultural productivity which ensures households' marketing output. The DA trained local people about training on the use improved seed. This opportunity was more vital for farmers who had previously no knowledge use of improved seed. The use of improved seed was noted from a 55-years-old farmer from wesorbi gna'a kebele during Key informant interview as below.

*“Before 2016, I had no any information that increases my agricultural productivity other than traditional seed. On March 2016, DA trained the use of improved seed on group Kebele meeting. Then In summer season, I bought improved seed from Tulu Bolo town and increase my productivity”.*

#### **4.8. Service Linkages.**

The result revealed that, Tulu Bolo town has service linkage with surrounding rural areas. Rural areas get different social services from Tulu Bolo town include service like education, health service, agriculture tools, market, and communication service. Therefore, there is a need to promote the integration between urban and rural service delivery linkages on education, health, and telecommunication etc.

**Table 13: Distribution of respondents utilizes urban services**

<b>Service type</b>	<b>Number</b>	<b>Percent</b>
Agricultural tools	71	80.7
Schooling	88	100
Health Service	88	100
Market	88	100
Telecommunication	88	100

**Source: Own field survey, (2020).**

As indicated in the table 7, on average 81% of rural households use agricultural tools from the town. All sample rural households use health service, education, market and telecommunication

service from the study town. Thus, rural households are totally dependent on the study town for these services.

A question related to the services to get the service linkages was asked through open ended question in the questionnaire during FGD. Accordingly, four FGD groups who have deep knowledge about the urban-rural linkages for local development were interviewed. “A 58 years old household said that we get service like schooling, health service from the Tulu Bolo town”.

#### 4.9. Monthly/annual Expenditure of Durable/non-durable Goods

In this study urban goods and commodities are flows from Tulu Bolo town to surrounding rural areas. Activities that meet the consumer demand of rural households form the basic chain of feeding linkages. The urban-rural linkages occur because the rural households demand to Tulu Bolo town goods. So Tulu Bolo town is the major suppliers of consumer and manufactured goods to rural areas.

**Table 14: Average expenditure of durable/no-durable goods and place of purchase**

Goods	Ave.expenditure	HHs	Percent	Place of purchase	
				Town	Town/rural
Clothes/shoes	3760(annually)	88	100	town	–
HH utensils	965(annually)	77	87.50	town	–
Building material	4566	27	31.03	town	–
Coffe/sugar/tea	270(monthly)	83	94.32	–	from both
Salt/spices/pepper	150(monthly)	88	100	–	from both
Oil/spices/soap	365(monthly)	88	100	–	from both
Radio/tape/bed	2477	16	18.2	town	–
<b>Total</b>	<b>12553 birr</b>				

**Source: Own Field Survey, (2020).**



**Figure 4: Figure shows durable/non-durable goods**

As shown in Table 8, almost all rural households purchased durable and on-durable goods from Tulu bolo town. All respondents of households spend some amount of money for durable as well as non-durable consumable items. On average, each sample household spent 7202 Birr annually for durable items (like for clothing/shoe, household utensils and radio/tape/bed). About 31% of the sample rural households spent about 4,566 Birr for building materials. Each household had average expenditure of 785 Birr per month for major consumption goods.

With regard to the overall annual expenditure, about 12553 Birr was spent annually to purchase the durable and consumable items. The national annual expenditure in rural areas of Ethiopia was 9192.65 Birr and at a country total level it was 12232.62 Birr (CSA, 2013c). The annual expenditure in the study area was therefore similar with the national average. This shows that the area was relatively equal by economy with other rural areas of the nation. The durable items were completely provided from the town market, while the consumable items found both in the rural area and urban markets. This shows that Tulu Bolo town was the major source for these goods. An interview made with households revealed that almost all goods (except some tape/radio) were brought from other larger urban centers particularly from Addis Ababa. Accordingly, expenditure on major items used as bases for urban-rural linkage for local development in the study area. Therefore, the town met the demand of the households for urban goods and services.

With regard to the place of purchase, a difference was observed among the sample kebeles. Sample rural households who lived in the relatively far distant kebeles (wesorbi gna'a) purchased their consumable items from Riqate village found in the rural area. However, some sample rural households from Awash Bune (found at middle distance from the town) also purchased items in

rural area. This was due the accessibility of transport. This Awash Bune kebele is found on the way to Addis Ababa, which has flow of transport till 7:30 PM. Therefore, distance was not the only factor that forced the rural households to purchase some items in the rural areas since some sample rural households from the nearest kebeles also purchased some items in the rural areas (Table 8).

#### **4.10. Purchase of farm output by urban households in Tulu Bolo town**

One of the assumptions of many rural-urban linkage studies is that rural households create demand for urban goods and small towns can meet much of the demand of rural households (Gaile, 1992) cited in (Tegegne, 2001:63). Small serve as a collection and distribution center for farm product from their hinterlands thereby linking the hinterland with regional and national economies (Tacoli, 2002). One of marketing linkage of urban households to rural households is through purchasing of consumer goods/farm products.

**Table 15: Crops bought and average expenditure by urban households**

Types of crops	Monthly expenditure		Number	percent
	Amount in kg	Av.amount in birr		
Teff	55	1296.43	84	57.14
Wheat	34	1286.5	37	25.2
Bean/pea	4	640	10	6.8
Maize	6	533.33	9	6.12
Sorghum	12	1371.4	7	4.8

**Source: Own field survey,(2020).**

Urban households of Tulu Bolo town are the highest consumers of Teff, as indicated in table 12. About 57.14 % of urban households conformed that they have bought and consumed on average

of 55 kg of Teff per month and its average expenditure found to be 1296.43 birr. This crop is also one of the dominant crops produced by surrounding rural households. About 4.8 % of urban sample households also bought and consumed 12 kg of sorghum and their expenditure was estimated to be 1,371.4 birr. The second dominant consumption crop is wheat where 25.2% of urban households reported that they have bought 34 of kg of wheat and expended 1,286.5 Birr per month. Again 6.8% and 6.12% of sample urban households bought and consumed 4 kg of bean and 6 kg of maize spend about 640 birr and 533.33 birr respectively.

Urban households depend on grain traders who serve as a bridge between the farmers and the urban consumers. Therefore, this shows that a considerable rural population (90% of urban respondents source the crop from farmers) was leading their live by selling crop product to the urban population. As Table 12 indicates, even if most of the urban households (100%) bought grain crops, the remaining urban households did not. This also clearly showed how the rural and urban areas are linked in terms of crop production supply. Some urban residents who own farm land in the rural area gave their farm land to the rural farmers through the crop sharing agreement

In general the hinterland was not satisfying the grain crops demand of the urban dwellers. Tulu Bolo town created linkage with other towns in the case of grain crops. However, the town serves as an intermediate market for Maize and Sorghum that were headed to Jima and Nekemte. This finding was consistent with Tegegne's (2005) result that grain marketing was of course constrained by factors such as subsistence farming.



**Figure 5: Crop obtaining and stored by urban merchant.**

#### 4.11. Challenge of urban-rural marketing linkages

The majority of rural residents cannot afford to buy processed or semi processed urban products such as edible oil, sugar, and agricultural inputs (Zewdu & Malek, 2010). This condition also applies to some of the urban poor, who have no informal or family relations with the rural households to access rural products and have insufficient income to purchase from urban markets. The ability of farmers to maximize market access for their products is also challenged by poor infrastructure, such as lack of access to good market information (that is, how markets operate), as these reinforce local interactions. The absence of employment opportunities in the nonfarm sector in Tulu Bolo town also contributed to the low level of income both in urban and rural areas.

**Table 16: Challenges of urban-rural marketing linkages identified by sample rural households**

<b>Problem of UR marketing linkage</b>	<b>Frequency</b>	<b>Percent</b>
Subsistence agriculture	77	87.5
Inadequate market information	83	94.3
Lack of agro-processing industries	79	89.77
Poor road network	65	73.86
Distance	36	40.91
Price fluctuation	85	96.59
limited agriculture inputs	71	80.68

**Source: own field survey, 2020**

The data in Table 10 presented challenges of urban-rural marketing linkages that are identified by sample rural households. Accordingly, price fluctuation, inadequate market information, lack

of agro-processing industries, subsistence agriculture, limited agriculture inputs and Poor road network are the major factors affecting urban-rural marketing linkages as identified by 96.59%, 94.3%, 89.77%, 87.5%, 80.68% and 73.86% of sampled rural households, respectively. Unlike results of prior studies, distance between the study town and the hinterland is identified to have the least challenge affecting rural urban linkages.

Thus, most of them said that there is challenge of urban-rural marketing linkage. The challenge of urban-rural marketing linkage was noted from a 52-years-old household during Key informant interview as below. *“The main reasons for challenge of urban-rural marketing linkage were subsistence agriculture and inadequate market information. These calls for a concerted effort both by local government and other stakeholders to seek ways and means of maximize market access for their products, thus contributed to the low level of income both in urban and rural areas”*.

#### **4.12 .Livestock Production and marketing**

The argument made for marketing of crops could be made to the marketing of livestock as well. Hence, small town are expected to stimulate higher livestock sell to earn income on the parts of Farmer (Tegegne, 200; 60). Rural households of Becho woreda have reported that they sold livestock and livestock product within 1 year (see table11). In Becho woreda farms have sold cow, goat, sheep, ox and etc. Goat has the highest sale among the others. About 45.45% of the owners of goat have sold nearly 80% of goat in the market. Regarding to sheep, rural households indicated that, they have sold sheep in the market. About 19.32% of the owners of sheep have sold nearly 75% percent of their sheep. Similarly rural farmers' have sold other animals like ox and cows. About 25% and 10.23% of respondents have sold 33.33% oxen and 50% of cows respectively.

**Table 17: Average number of livestock owned by rural households**

Types of cattle	Average owned	Amount of sold per 12 months		No of respondents	Percent
		No	%		
Ox	3	1	33.33	22	25
Sheep	4	3	75	17	19.32
Cow	2	1	50	9	10.23
Goat	5	4	80	40	45.45

**Source: own field survey, 2020**



**Figure 6: Livestock supply for marketing**

### **4.13. Purchase of Livestock by Urban Households**

Additional way of looking at marketing linkage is observing urban households' purchase of livestock. As it is indicated in the table 12, urban dwellers have bought goat, sheep, cow and ox. Goats and sheep have higher numbers of consumers. Most frequently goat and sheep are used for consumption of urban household. 45% of sample urban households have bought goat more than cow within a year. 23.13% of sample has bought sheep in a year and 18.37% of sample urban people have bought ox in a year.

**Table 18: Urban households purchase livestock in a year**

Types of livestock	Source of Purchase	No of respondents	Percent
	Farmer/Trader		
Ox	From both	27	18.37
Sheep	From both	34	23.13
Cow	From both	20	13.61
Goat	From both	66	44.9

**Source: own field survey, 2020**

The above shows not closed market which means the products are sold not only in Tulu Bolo town and the rests are locally consumed, but also there is a trade outlet with other town such as Weliso town, Busa, Teji and Sebate town. As tried to mention earlier there are three market day in Tulu Bolo town, Saturday, Monday and Tuesday. In these day traders come from those towns mentioned and purchase agricultural products and livestock from the town and take to other big town like Addis Ababa. They also supply agricultural inputs to the households which they cannot get from Tulu Bolo town.

#### **4.14. Migration and Urban-Rural Linkages**

Small towns are believed to serve as attraction points for surrounding people. Thus, the flows of migrants from surrounding areas to the big centers increase (Tegegne, 2001). Migration status of urban Households revealed that the majority of urban households are migrants (see table13). of sample urban households, 50% of the respondents indicated that their previous place of residence is rural area which means their place of birth is rural areas. Additionally about 8.2% of sample urban households reveal that they come from other town of total urban households, only 42.2% were born in Tulu Bolo town and thus there are urban residents.

**Table 19: Migration status of urban households**

Place of birth	No respondents	percent
Tulu Bolo town	62	42.2
Rural areas	73	49.6
Other places	12	8.2
Total	147	100

Information collected through questionnaire depicts that there are many causes why they have changed their residents to Tulu Bolo town. Shortage of farm land in rural area is one of the major push factors for the high level of migration in study area. About 51% of the migrants reported that shortage of land is the cause of their migration. Another reported by 26.03% of respondents is education. They have come to urban area for better education. About 23.3% and 6% have reported that they migrated because of finding better life.

**Table 20: Causes of migration in Tulu Bolo town**

<b>Reason of migration</b>	<b>Number of households</b>	<b>Percent</b>
Shortage of farmland	37	50.7
Education	19	26.03
Better life	17	23.3

In addition to the above causes that difficulties in migration identified other challenges. Accordingly, migration identified difficulties and challenges during KII in this way. *During KII interviews, three households were asked and responded that, the most common causes were; due to shortage of farmland, Education, Better life, Search job and Marriage.*

#### **4.15. Rural Households' Visit to Tulu Bolo Town**

Towns provide various services to the surrounding rural people to provide several services such as market for agricultural products, source of urban goods and services and the centers for off-farm employment. Thus, residents of surrounding rural areas go to the town to receive these functions. Table 15 shows the frequency of surrounding rural people visiting Tulu Bolo town. The patterns of visiting the town range from once a week to five times in a week. However, the majority of rural households informed that they go to the three in a week. Table 15 indicates that 42.05% rural households visit Tulu Bolo town three a week. This is because there are three market days in a week (Saturday, Monday and Tuesday). About 25% and 19.32% of rural households responded that they visit Tulu Bolo town once and two times respectively. These are also 8% and 6% of respondents' visit the town four and five times in a week.

**Table 21: Frequency of rural households visiting to town**

<b>Frequency in a week</b>	<b>No respondents</b>	<b>percent</b>
Once a week	22	25
Twice a week	17	19.32
Three a week	37	42.045
Four a week	7	7.95
Five a week	5	5.7

#### **4.16. Conditions of Infrastructure and Services**

Many rural households are found at the distant from the town. They need road infrastructure for marketing agricultural output and get services. The condition of the infrastructure and service is not efficient or non-existent to link town to rural areas.

**Table 22: Modes of transportation used by rural households**

<b>Categories of mode of transportations</b>	<b>number</b>	<b>Percent (%)</b>
on foot	59	67.04
Animal back/carts	18	20.4545
Car	11	12.5
Total	88	100

As indicated in the table 16 Physical linkage between Tulu Bolo town and its rural area is very weak. About 67.04% of the rural households reported that they used traditional modes of transport that is on foot. Only 12.5% get the chance of transporting by the car. The natures of the road networks surrounding rural areas of Tulu Bolo town do not encourage the free movement of goods and service. There is only one direction that have road and transport service. The rest rural areas used animal back and walking on foot to come the town. Resources are transported to rural are by the help of donkey back/carts. Using donkey/carts for the transportation purpose is not efficient and effective relative to the modern modes of transportation system. But as indicated in (figure 7) majority of rural households are still using donkey/carts for transportation. Others carry by themselves. It takes a lot of time and money using this way of transportation system. In addition to this, donkey and human labor cannot carry many resources. It is difficult to transport

perishable vegetable from rural areas to the town. Rural households also need processed industrial products from the town. They transport in similar way of the resources. On the other hand, they have no electricity. Some rural areas have only the access of wireless network coverage. This study is also confirmed with empirical study of Addisu (2018).



**Figure 7: Rural households using animal for transporting their product to Tulu Bolo town**

During KII interviews, six household were asked and responded that, the most common challenges relates to infrastructural facilities were; *“since household requires sufficient electric power, lack of transformer and supply of other accessories related to electric are issues of the most challenges faced to the rural households.*

#### **4.17. The Role of Urban Rural Linkages for Local Developments**

The discrete consideration of rural development as completely distinct from urban development is no longer valid (Okpala, 2003). A new perspective referred to as the rural-urban linkage development is increasingly becoming accepted for LED. It is important therefore that states at the national level and at the local (municipal) level of cities, small and medium-sized towns and rural areas, recognize the potential of rural-urban development linkages, the impact of their development actions on rural and urban areas and the positive role they can play in poverty alleviation.

The mutual relationship between urban and rural areas is vital for LED. However, in the study area urban-rural linkages play vital role for local development in terms of income and wealth generation, economic activities diversification, increase opportunities for employment and improve wellbeing and livelihood of respondents of the study area.

**Table 23: Role of Urban-Rural linkages for local developments**

<b>Role of URLs</b>	<b>Freq.</b>	<b>Percent</b>
Income and wealth generation	84	35.74
Economic activities diversification	65	27.66
Increase employment opportunities	47	20
Improve wellbeing and livelihood	39	16.60
<b>Total</b>	<b>235</b>	<b>100</b>

**Source: Self compiled from Survey Questionnaire, (2020)**

Respondents were asked to identify the role of urban-rural linkages for local developments. As indicated in table 17 about 84(36%), 65(27.66), 47(20), 39(16.6) of respondents identified income and wealth generation, diversification economic activities, increase employment opportunities and improve wellbeing and livelihood respectively as the major roles of Urban Rural linkages for local developments in the study town and its surrounding rural areas.

For the purpose of this study, one expert in the *tow* thinks that linkages status is better in his town; it is better in his town compared to other town. But he cannot say it is enough. In spite of that, however, experts are hopeful to realize the goal of urban-rural linkages.” *What we need to do first is encourage mutual development of urban-rural linkage for local development. This linkage is very important and a lot of people get advantage from it. Such as Income and wealth generation, economic activities diversification, Increase employment opportunities”*

#### **4.18. Determinants of Urban Rural Linkages**

Before running a logit regression and concluding the result, econometric assumptions such as Multi-collinearity and contingency coefficients were computed in order to test the proposed model statistical good fit.

##### **4.18.1. Multi-collinearity Test**

There were four continuous and eight dummy variables that were included to fit the model. The

Continuous variables are age of the respondent, educational level of the respondents, income and family size. On the other hand, dummy variables are gender of the respondent, access to credit, market availability, infrastructure facility, land owned, distance, livestock and marital status. Variance inflation factor (VIF) and contingency coefficients were computed to check association between these continuous and discrete variables using STATA version 13. In case, VIF test result shows 1.01, which is much lower than the standard value of 10. Therefore, there is no multi-collinearity problem.

**Table 24: Multi-collinearity Test for Continuous Explanatory Variable**

Estat.VIF

Variable	VIF	1/Vif
Age	1.01	0.985673
fmly	1.01	0.986846
edu	1.01	0.995014
inc	1.00	995690
Mean VIF		1.01

**Source: own field survey, 2020.**

#### **4.18.2. Correlation Analysis**

The correlation analysis is aiming to see the extent of strength or weakness relationship among variables. A correlation approach to 1(-1) shows a strong correlation, and one approaches 0 shows a weak relationship. Correlation analysis could have three important advantages. First, it tells whether the relationship between the independent variable and the dependent variable is positive or negative. Second, it tells whether the relationship is strong or not. Third, it tells about whether there is a Multi-collinearity problem or not.

**Table 25: Contingency Coefficient for Dummy and Categorical Variables**

	EURL	Sex	mrt	land	lvst	infr	dist	crd	mrkt
EURL	1.0000								
Sex	0.094	1.0000							
mrt	-0.0201	0.0304	1.0000						
land	0.1241	0.0897	-0.0512	1.0000					
lvst	-0.1819	-0.0269	-0.0467	0.0989	1.0000				
infr	0.1238	0.0244	0.0106	0.0664	-0.014	1.0000			
dist	0.1675	-0.0165	-0.0486	0.0059	-0.0422	0.1015	1.0000		
crd	0.126	-0.0713	0.0515	0.1115	0.1921	-0.0566	0.0026	1.0000	
mrk	-0.1363	0.0468	-0.031	-0.0341	0.0477	0.0053	-0.0596	0.0958	1.0000

The above correlation table shows that there is a negative correlation between urban-rural linkages and livestock, marital status and market availability of the household head. Regarding the strength of the relationship between variables urban-rural linkage is positively highly correlated with sex, land, credit access, and distance from town and access to basic infrastructures.

#### **4.19. Econometric Results**

In this section, the relationship between the dependent variable and explanatory/determinant variables is briefly described. Logit regression models were used to identify the determinants of urban-rural linkages for local developments (both spatial and sectorial linkages). After fulfilling all of basic assumptions regression analysis is conducted. The using STATA version 13logit regression models results also revealed that among twelve explanatory variables considered, eight were statistically significant.

Accordingly, genders of the respondent, land access, access to credit, infrastructure facility and distance from the town were found to have statistically a significant positive influence on enhanced urban rural linkages. On the other hand, family size of the respondents, market availability and livestock had a significant negative influence on enhanced urban rural linkages. The discussions of significant variables are as follows:

**Table 26: Regression Result**

Logistic regression

Number of obs = 235

LR chi2 = 41.88

Prop &gt; chi2 = 0.0000

Pseudo R2 = 0.1293

Log

likelihood=141.01102

EURL	Coef.	Std. Err	Z	P>  Z	{95% conf.	Interval }
Age	0.00439	0.008795	0.5	0.618	-0.01285	0.21628
Sex	0.669134	0.37356	1.79	0.073	-0.06303	1.401297
edu	-0.04233	0.051033	-0.83	0.407	-0.14236	0.576897
mrt	-0.19824	0.247216	-0.8	0.423	-0.68278	0.2862911
fmly	-0.11417	0.064252	-1.78	0.076	-0.2401	0.0117656
land	0.608384	0.380257	1.6	0.11	-0.13691	1.353674
lvst	-1.11755	0.321553	-3.48	0.001	-1.74778	-0.48732
infr	0.589372	0.343929	1.71	0.087	-847157	1.263459
dist	0.817141	0.399625	2.04	0.041	0.338894	1.600392
crd	1.007471	0.349523	2.88	0.004	0.322418	1.692524
mrkt	-1.30624	0.555531	-2.35	0.019	-2.39506	-0.21742
inc	5.93E-06	6.20E-06	0.96	0.339	-6.23E-06	0.0000181
-cons	-0.17225	1.317321	-0.13	0.896	-2.75415	2.409649

.mfx

Marginal effects after logit

Y = Pr ( EURL) (predict)

0.445727

Variable	dy/dx	Std. Err	Z	P>  Z
Age	0.001085	0.00217	0.5	0.618
Sex	0.15887	0.08368	1.9	.058*
edu	-0.01046	0.01261	-0.83	0.407
mrt	-0.04898	0.06107	-0.8	0.423
fmly	-0.02821	0.01586	-1.78	.075*
land	0.145242	0.08626	1.68	.092*
lvst	-0.27221	0.07465	-3.65	.000***
infr	0.141689	0.07939	1.78	.074*
dist	0.190874	0.08548	2.23	.026**
crd	0.235636	0.07499	3.14	.002***
mrkt	-0.30783	0.11221	-2.74	.006***
inc	1.46E-06	0.00000	0.95	0.034

.\*\*\*, \*\*,and \*indicate level of significance at 1%, 5% and 10% respectively

**Source: Model result, 2020**

**Sex of the respondents (sex):** This variable refers to gender of the respondents. Gender of household head being male was expected to have positive association with urban-rural linkages. However, the results had significant and positive relationship with both spatial and sectorial linkages which is significantly at 10% level of significance based on logit result. Therefore, keeping other factors remaining constant, as one household are headed by male, both spatial and sectorial linkages increased by 15.88% than female households headed. Thus, it can be inferred from the result that sex difference was one determinants of urban rural linkage in the study area.

In fact household heads that are male would have an opportunity to visit the town to search additional income, purchase different items or inputs, and the like. However, this finding similar with that of Akkoyunlu (2013) who states the women household heads may have lower linkages to market than the male household heads.

**Family size of respondents (fmly):** In this study the family size of a household head was associated with the determinant of urban-rural linkage negatively and significantly at 10% level of significance based on logit result. The negative sign shows that the probabilities that the household was urban-rural linkage decreased as the family size in adult equivalent increases. The inverse relationship between the family size and urban-rural linkage implies that, as increase in the family size by one member, decreases the urban-rural linkage by 2.82% based on both spatial and sectorial linkages. The household with larger family size consumes more of what is produced in the house and little would remain to be marketed. The underlying reason was the fact that as family size member increased with limited resources, increased the responsibility of households to low market linkage in the study area. The result was in conformity with the works of (Zelalem, 2014; Hussein and Janekarnkij, 2013; Asghar and Muhammad, 2013). In fact household heads that are small family size would have an opportunity to visit the town market to sold production, purchase different items or inputs, and the like.

**Land owned (land):** is the total size of land households own or acquire (through rent or share cropping system). Size of land owned put to cultivation has a positive relation with urban-rural linkage for local developments. Each additional hectare of land increases the probabilities of household's linkage by 14.52%, with a p-value of 0.092%, given all variable in the model are held constant. This implies that the more households have land own cultivation; they have increased chance to urban-rural linkages.

**Total livestock holding (TLU):** In line with what was hypothesized at the outset of this study, TLU determined the urban-rural linkage negatively. In this study, the livestock ownership of the household head is associated with urban-rural linkages of the household head negatively and significantly at 1% of significant level. As increase household TLU by one unit, decreases the urban-rural linkage of that household by 27.22%. This finding is inconsistent with other studies. Therefore, the income earned from livestock and/or livestock product could be reinvested in

other agricultural and non-farm activities that would have an insignificant influence in strengthening the urban-rural linkage. Those who have more oxen spend more time on their farms than their matching part and those who have small oxen ownership of oxen forced to participate non-farm activities (like daily labor, petty trade, hand craft, fire wood sale etc.) This situation led to the small oxen farmers to visit the town search for additional income.

**Access to infrastructure facility (infstr):** This variable was positively expected with urban-rural linkages for local developments. As expected, it was statistically and positively significant at 10% level of significance with urban-rural linkages for local development. Accordingly, as the availability of the infrastructure facility increased by 1%, the urban-rural linkage was increased by 14.17%, holding other factors constant. Effective and efficient urban-rural linkage is important for precondition of enhancing and increasing production of rural households and also access agricultural output in both spatial areas. There should be infrastructural development that involves town and rural communities. The greater access to the information technology, better road and education are among the other things need to be enhanced the linkages between urban-rural in the study areas. Between two areas facilitates the other dimension of urban-rural linkages like economic and service delivery linkages. The results indicate that a poor infrastructure is possible to weak urban-rural linkages. This finding is confirmed with the previous studies of Adugna (2013), Kazeemet, al. (2012) and Siraj (2014).

**Distance from the town (dist):** Greater physical access to urban-rural linkage improves farm and non-farm earnings opportunities. Therefore, closer distance to longest to the town expected positively affects the rural-urban linkage due to low transaction and transport costs as well as access to market information. As expected, the result had significant and positive relationship with the urban rural linkages which is significantly at 5% level of significance based on logit result. Therefore, keeping other factors remaining constant, as distance closer to the urban center by 1 km, the level of linkage from the urban-rural linkage of a household increased by 19.087%. Therefore households closer to the town were more advantageous in getting income from different activities than distant households from the town.

**Access to Credit (crd):** Another important finding of this study was predicted sign positive association between access to credit services and household of urban-rural linkages in the study area. Access to credit services was statistically and positively significant at 1% level of

significance based on logit result model. The result of the regression coefficient indicated that, keeping other factors constant, as access to credit services increases by 1% for households the urban-rural linkage of that household increases by 23.56%. This represents that, the households' who have access to credit services stands higher percentage of being more urban-rural linkage than those without access to credit services. It is fact the availability of credit for rural households' in turn helped them to purchase farm inputs which increased production and promote urban-rural linkages. The study is confirmed with the previous studies by (Zelalem, 2014, Indris, 2012).

**Market availability (mrkt):** Market availability of household was expected to have positive association with urban rural linkages. However the market availability of the household head is associated with urban-rural linkages negatively and significantly at 1% of significant level. The negative sign shows that the probabilities that the household was urban-rural linkage decreased as the market availability increases. The inverse relationship between the market and urban-rural linkage implies that, an increase in the market availability decreases the probability of that household's becoming an urban-rural linkage by 30.78%. The efficiency and effectiveness of markets in linking rural and urban areas are very important to economic growth and development. The underlying reason was the fact that markets across urban-rural space integrated only partially or in extreme cases, not at all. Therefore transfer costs can become significant obstacles to market integration and include: information asymmetry, transaction costs, transport and communication costs, policy-induced barriers, and social and noneconomic barriers [Enke 1951, Samuelson 1964, Taka Yama and Judge 1964]). The result was show that market is negatively affect, because information asymmetry between Tulu Bolo town and the surrounding rural areas. In fact the availability of accurate, timely and appropriate information can enable producers to make better decisions regarding what and how much to produce, where to sell and call for urban-rural linkages. To sum up this result that, the study found that sex of the respondent, land owned of the respondent, access to credit, accessibility of infrastructure and distance from the town were significantly and positively associated with urban-rural linkages for local development while, family size of the respondent, livestock and market availability was significantly and negatively related with urban-rural linkages for local developments. On the other hand, variable such as age, marital status, education and income statistically insignificant to explain the dependent variable during the study period

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

#### **5.1. Summary and Conclusion**

The major objective of this study was to examine determinants of urban-rural linkages for local developments in the case of Tulu Bolo Town and surrounding rural areas. To fulfill this objective, the researcher have reviewed theoretical explanations and empirical literature regarding to the main determinants of urban-rural linkages in the context of world wide, Sub-Saharan Africa, Ethiopia, and also the study have evaluated various reports. In addition to the theoretical and empirical literature, the empirical analysis that is conducted by using econometrics technique identifies the determinants factors in the study area. The major findings that are obtained through empirical analysis can be concluded as follows:

Descriptive study carried out to examine the different form of linkages that exist in the study area. The result of the descriptive statistics shows that most of the linkages that exist in the study area are spatial linkages and sectorial linkages. A spatial linkage in the study area consists of flow goods, money, and technology and information linkages. In fact sectorial linages are the interaction between agriculture (crop production, livestock production) and manufacturing (use of agricultural inputs such as fertilizer, improved seeds, herbicides and pesticides). In addition marketing linkages (flow of crop production, livestock and vegetable/fruits), services delivery linkages (agriculture tools, telecommunication, market, education and health) are show existing linkage between Tulu Bolo towns and surrounding rural areas. These linkages are challenged by factors related to infrastructure, subsistence nature of production, lack of market information, lack of guideline and organized planning, and low purchasing power of most of the residents.

With respect to role of urban-rural linkages for local developments, urban rural linkages are energetic for local development in terms of income and wealth generation, economic activities diversification, increase opportunities for employment, improve wellbeing and livelihood, balanced development and sustainable rural and urban growth of the study area.

Econometric analysis was then carried out to examine the factors that significantly determine urban-rural linkages for local developments. The results from logit regression model indicated that the variables sex of the respondent, land owned of the respondent, access to credit, accessibility of infrastructure and distance from the town were significantly and positively associated with urban-rural linkages for local development and variable family size of the respondent, livestock and market availability was significantly and negatively related with urban-rural linkages for local developments based on the logit model. On the other hand, variable such as marital status and education level had a negative association while age and income positive effect on urban-rural linkages for local developments but not significantly.

## **5.2. Recommendations.**

For the understanding of mutual development, strong linkage between urban-rural areas and to strengthen urban-rural linkages between Tulu Bolo town and its surrounding rural areas, the following recommendations were forwarded by the researcher.

- ❖ Important factor positively related to urban-rural linkages for local development was gender of the households. The finding revealed that women household heads may have lower linkages to market than the male household heads. Therefore, interventions intended to encourage households have to give priority to female households. Furthermore, strengthening capacity of females through educate about urban-rural linkages should be an integral part of the intervention.
- ❖ Livestock holding, market availability and family size had negatively associated with household's enhanced urban-rural linkages. Therefore the income earned from livestock and/or livestock product could be reinvested in other agricultural and non-farm activities. Market should be accurate, timely and appropriate information can enable producers to make better decisions regarding what and how much to produce, where to sell and call for urban-rural linkages. Households' should also be educated on the need to adopt the family planning techniques.

- ❖ In addition, accesses to credit services were statistically and positively related with household's enhanced urban-rural linkages. Therefore, Provision of awareness creation on better utilization of such resources as credit should also be emphasized besides expansion of access to credit in rural areas. As a result, rural households' purchase farm inputs which increased production and promote urban-rural linkages
- ❖ Effective and efficient urban-rural linkage is important for precondition of enhancing and increasing production of rural households and also access agricultural output in both spatial areas. There should be infrastructural development that involves town and rural communities. The greater access to the information technology, better road and education are among the other things need to be enhanced the linkages between urban-rural areas. Between two areas facilitates the other dimension of urban and rural linkages like economic and service delivery linkages. Thus regional state, town and rural administration priority should be given to road as it helps to take resource from rural areas and commodities to rural areas.
- ❖ Besides, land owned was found to have positive effect on enhanced urban-rural linkages of the households'. To increase rural households' production and productivity, necessary efforts should be made to provide access to land owned and distributions of modern input technologies to increase the production and productivity of rural households' that ensures the linkage of their production and market output linkage.
- ❖ The Town administration should have to create favorable environment that may initiate an existing linkage of urban and rural areas to join the development that results in the long run to urban and rural households. Similarly, close follow up by the town and rural administration on those linkages that are sectorial and spatial linkages help to boost households on the existing linkages.
- ❖ The regional state together with the town and rural administration revisit urban-rural linkages given to encourage role of urban-rural linkages for local development and take corrective measures accordingly to motivate actual local development. Therefore, to

promote role of urban-rural linkages, government should formulate appropriate strategy and strengthen the supportive activity such as economic activities diversification for household of the study area.

### **Directions for Future research**

- Tools and options for increasing willingness and commitments of local governments for creating enabling situation for mutual development of urban-rural linkages.
- Mechanisms and tools for identifying key factor and strengthening URLs for local economic development.
- Alternative corporations for integrated local development of urban and rural areas for better interaction.

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## **APPENDIXES**

**Addis Ababa University**

**College of Development Studies**

**Center for Regional and Local Development**

### **Appendix 1: Questionnaires Rural Households.**

#### **Part I- Individual Respondent Questionnaire**

I am Milkesa Lemma a student at Addis Ababa University in College of Development Study. I am currently undertaking my research plan as a requirement for award of the degree of Masters of Arts in Urban Development and Livelihood. The study is on Determinants of urban-rural linkage for local developments. The findings and recommendations of the study will contribute to the knowledge base in the rural and urban development sectors. Therefore, I would like to collect data that will assist in achieving the objectives of this study. Kindly answer the questions by ticking [, ], Witting and/or explaining. Your contribution will be much appreciated and the information provided will be treated with greatest confidentiality. Kindly answer the Questions in this questionnaire.

Thank you in advance for you cooperation



Fruits (kg)						
Honey (kg)						
Livestock (no)						
Other						

6.2.2. If your answer question number “6.2” is “B”, what type of service linkages you have? Please fill service linkages in the following table whether you got the following services, if not from where you got them?

Service type	Alternatives		If you said ‘no’ from where you get them?
	Yes	No	
Farm extension service			
Agricultural tools			
Repair agricultural tools			
Veterinary services			
Storage agricultural product			
Schooling			
Health services			
Market			
Telecommunication services			

6.2.3. If your answer is question to number “6” is “C” what type of manufacturing (input) and commercial fertilizers linkages you have? Please fill input type in the following table.

Inputs	Quantity (kg/ No /Ltr	Spend it use (Birr)	Source	Place of Purchase
Improved seeds				
Fertilizers				
Herbicides				
Insecticides				
Other				



**II. Livestock.**

1. Did you have own livestock? 1. Yess 2. No
2. If your answer to question number “1” is “1” (yess) how many livestock did you have? Please write in the given table.

No.	Livestock species	Number in 2020
1	Oxen	
2	Cows	
3	Bulls	
4	Sheep	
5	Goat	
6	Horses	
7	Mule	
8	Donkey	
9	Chicken	
10	others	

**III. Infrastructure facility.**

1. Did you have access to infrastructure facility? 1. Yes 0. No
2. If your answer to question number “1” is “1” (yess) please write type of infrastructure you have?
  1. Road
  2. Water.
  3. Health
  4. Telecommunications.
  5. Electrical energy.
  6. School
  7. Others\_\_\_\_\_

**IV. Distance from the town.**

1. Distance from the town. 1. Near. 2. Far.
2. Weather you far or near from the town, please indicate your mode of transport, distance and time you take to travel from your home to the town.

Mode of transport	Time needed to travel	Distance in (km)	Reason to use
On Foot			
Animal back			
Vehicles			
Others (specify)			

### V. Credit.

- Did you have access to credit?      1. Yes                      0. No
- From where did you get the credit?                      1. Rural                      2. Urban                      3. Both
- What is your reason for the credit? \_\_\_\_\_

### VI. Market Availability.

- Is there any challenge that affects urban-rural marketing linkages?
  - Yes
  - No
- If “yes” what are the main problem of urban-rural marketing linkages?
  - Poor road network
  - Inadequate information
  - Subsistence agriculture
  - Lack of agro-processing industries
  - Weak local government.
  - Distance
  - Inflation
  - Tenure insecurity
  - Shortage of land
  - Lack of market facilities.
  - Price fluctuation.
  - Natural resources degradation
  - Limited agricultural input
- Annual expenditure on construction materials and from where you purchase?

No	Item	Did you buy?		Cost(birr)	Place of purchase	
		Yes=1	No=2		Urban=1	Rural=2
1	Corrugated I.S.					
2	Nails					

3	Wood					
4	Cement					
5	Glass					
6	Other					

4. Monthly expenditure on durable goods and sources of purchases?

No	Item	Did you buy?		Cost(birr)	Place of purchase	
		Yes=1	No=2		Urban=1	Rural=2
1	Radio/Tape					
2	Watch					
3	HH Furniture					
4	Bed					
5	House					
6	Jewelry					
7	other					

5. Monthly expenditure on non-durable goods and sources of purchases?

No	Item	Did you buy?		Expenditure(birr)	Place of purchase	
		Yes=1	No=2		Urban=1	Rural=2
1	Soap/Omo					
2	Sugar/Tea					
3	Match/Batteries					
4	Coffee					
5	Oil					
6	Pepper/Spices					
7	Salt					
8	Kerosene					
9	Cloth					
10	Shoes					
11	Medicament					
12	Other					

**Addis Ababa University**  
**College of Development Studies**  
**Center for Regional and Local Development**

**Appendix II: Questionnaires Urban Households.**

**Part II: Individual Respondents Questionnaire**

I am Milkesa Lemma a student at Addis Ababa University in College of Development Study. I am currently undertaking my research plan as a requirement for award of the degree of Masters of Arts in Urban Development and Livelihood. The study is on Determinants of urban-rural linkage for local developments. The findings and recommendations of the study will contribute to the knowledge base in the rural and urban development sectors. Therefore, I would like to collect data that will assist in achieving the objectives of this study. Kindly answer the questions by ticking [, ], Witting and/or explaining. Your contribution will be much appreciated and the information provided will be treated with greatest confidentiality. Kindly answer the Questions in this questionnaire.

Thank you in advance for you cooperation

## Identification

Name of enumerator \_\_\_\_\_

Date of enumeration \_\_\_\_\_ Code \_\_\_\_\_

### I. Background of respondents.

1. Age of the household head \_\_\_\_\_
2. Sex of the household head is: 1. Male 0. Female
3. Educational level of household head completed year \_\_\_\_\_.
4. Marital status of household head: 1. single 2. Married 3. Widowed 4. Divorced
5. Total number of family size is \_\_\_\_\_
6. How many years did you live in this town \_\_\_\_\_

### II. General Survey

1. What is your main occupation in the town? 1. Civil Service 2. Agriculture  
3. Artisan 4. Soldier 5. Merchant 6. Wage labor  
7. Tailor 8. NGO 9. Pension
2. Do you involved in any income generating activity at the rural areas?  
1. Yes 2. No
3. Did you or any of your family members involved in agricultural activities in 2019?  
1. Yes 2. No
4. If 'Yes' for question number '2'. Why?  
1. To earn money 2. For self-consumption 3. Other (specify) \_\_\_\_\_
5. Did you permanently live in this town?  
1. Yes 2. No
6. If no on the question no. 5, from where did you come?  
1. from other town outsides the Woreda. 2. from rural areas in the Woreda  
3. From rural areas outside the Woreda 4. If other specify \_\_\_\_\_
7. If you came from another area, why did you come to this town?  
1. To get alternative job opportunities 2. For education  
3. Due to marriage 4. For better life  
5. Other (specify) \_\_\_\_\_
8. Did you visit your relatives in the rural area frequently? 1. Yes 0. No
9. Did you get any support from rural relatives? 1. Yes 0. No

10. If get any support in what form do you get it?

1. Agricultural production.

2. Non agriculture material.

### III. Market availability.

1. Did you have market availability? 1. Yes 0. No

2. If your answer to question number “1” is yes, did you purchase any agricultural produce this year (2019)? 1. Yes 2. No

3. If yes, how do you evaluate the supply of agricultural produces by the surrounding farmers?  
Please fill the following table.

Types of agricultural produces	Supply situation			Remark
	Unsatisfactory	Satisfactory	Excess	
Crop production				
Fruits and Vegetables				
Livestock				
Livestock and other animal products				
Hen/Egg				
Honey				
Forest/ forest product				

2. If you said ‘Yes’ for question number ‘1’. Please indicate the amount and types of agricultural produce you have purchased per month.

Types of crops	Monthly Expenditure		Place of purchase
	Average amount (Kg)	Average amount (Birr)	

4. Did you purchase any animal and animal products this year (2019E.C)?

A. Yes

B. No

5. If you said ‘yes’ for question number.‘4’, please indicate where the animal and animal products have been purchased and consumed by you and your families with in the last six months?

Types of animal or animal Products	Monthly Expenditure		Place of purchase	From whom you purchase
	Average amount (Kg)	Average amount (Birr)		
Goat/sheep				
Ox/cow meat				
Poultry				
Egg				
Butter				
Honey				
Other				

## **Addis Ababa University**

### **College of Development Studies**

#### **Center for Regional and Local Development**

##### **Part III- Interview Guide for key informant.**

I am Milkesa Lemma a student at Addis Ababa University in College of Development Study. I am currently undertaking my research plan as a requirement for award of the degree of Masters of Urban Development and Livelihood. The study is on Determinants of urban-rural linkage for local developments. The findings and recommendations of the study will contribute to the knowledge base in the rural and urban development sectors. Therefore, I would like to collect data that will assist in accomplishing the objectives of this study. Kindly answer the questions by explaining. Your contribution will be much appreciated and the Information provided will be treated with utmost confidentiality. Kindly answer the Questions in this questionnaire.

1. What do you think are the other important factors to strength urban-rural linkages?
2. What strategies in place to ensure strong urban-rural linkages?
3. What is contribution of the urban-rural linkages in your livelihoods?
4. Do you have access to transport system/road?
5. Have you got easy access to health center and school?
6. Have you got conventional fertilizer in reasonable price and alternative?
7. Do you want to live in urban center? Why?
8. Do you have financial problem for your agricultural activity?
9. What is the main source of your income and livelihood basis?
10. Are you interested to stay in agricultural economic activity?
11. Where do you get agricultural inputs?
12. What can be the constraints for farmer-industrialist linkages?
13. Is there any government law or institution that is a barrier for agriculture?
14. From where do you purchase the products you sale?
15. What are the main marketing problems associated with the town?
16. How many your annual income\_\_\_\_\_ birr

### Appendix 3: Correlation Matrix.

```
. correlate EURL sex mrt land lvst infr dist crd mrkt
(obs=235)
```

	EURL	sex	mrt	land	lvst	infr	dist	crd	mrkt
EURL	1.0000								
sex	0.0940	1.0000							
mrt	-0.0201	0.0304	1.0000						
land	0.1241	0.0897	-0.0512	1.0000					
lvst	-0.1819	-0.0269	-0.0467	0.0989	1.0000				
infr	0.1238	0.0244	0.0106	0.0664	-0.0140	1.0000			
dist	0.1675	-0.0165	-0.0486	0.0059	-0.0422	0.1015	1.0000		
crd	0.1260	-0.0713	0.0515	0.1115	0.1921	-0.0566	0.0026	1.0000	
mrkt	-0.1363	0.0468	-0.0310	-0.0341	0.0477	0.0053	-0.0596	0.0958	1.0000

```
. estat vif
```

Variable	VIF	1/VIF
fmly	1.01	0.985673
age	1.01	0.986846
edu	1.01	0.995014
inc	1.00	0.995690
Mean VIF	1.01	

## Appendix 4: Regression results

```
. logit EURL age sex edu mrt fmly land lvst infr dist crd mrkt inc
```

```
Iteration 0: log likelihood = -161.95004
Iteration 1: log likelihood = -141.16038
Iteration 2: log likelihood = -141.0117
Iteration 3: log likelihood = -141.01102
Iteration 4: log likelihood = -141.01102
```

```
Logistic regression                Number of obs   =       235
                                   LR chi2(12)        =       41.88
                                   Prob > chi2         =       0.0000
Log likelihood = -141.01102        Pseudo R2       =       0.1293
```

EURL	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
age	.0043899	.0087951	0.50	0.618	-.0128483 .021628
sex	.6691338	.3735596	1.79	0.073	-.0630296 1.401297
edu	-.042333	.0510329	-0.83	0.407	-.1423556 .0576897
mrt	-.1982432	.2472159	-0.80	0.423	-.6827775 .2862911
fmly	-.114165	.0642515	-1.78	0.076	-.2400956 .0117656
land	.6083842	.380257	1.60	0.110	-.1369058 1.353674
lvst	-1.117552	.3215528	-3.48	0.001	-1.747784 -.4873204
infr	.5893719	.3439285	1.71	0.087	-.0847157 1.263459
dist	.8171405	.3996252	2.04	0.041	.0338894 1.600392
crd	1.007471	.3495233	2.88	0.004	.322418 1.692524
mrkt	-1.306242	.5555313	-2.35	0.019	-2.395063 -.2174203
inc	5.93e-06	6.20e-06	0.96	0.339	-6.23e-06 .0000181
_cons	-.1722521	1.317321	-0.13	0.896	-2.754153 2.409649

Marginal effects after logit

```
y = Pr(EURL) (predict)
= .44572687
```

variable	dy/dx	Std. Err.	z	P> z	[ 95% C.I. ]	X
age	.0010845	.00217	0.50	0.618	-.003174 .005344	56.3149
sex*	.1588695	.08368	1.90	0.058	-.005142 .322881	.8
edu	-.0104586	.01261	-0.83	0.407	-.035172 .014255	9.06383
mrt	-.0489769	.06107	-0.80	0.423	-.168678 .070724	2.14468
fmly	-.028205	.01586	-1.78	0.075	-.059291 .002882	7.16596
land*	.1452422	.08626	1.68	0.092	-.023831 .314316	.795745
lvst*	-.2722146	.07465	-3.65	0.000	-.418533 -.125896	.655319
infr*	.1416894	.07939	1.78	0.074	-.013916 .297295	.744681
dist*	.1908743	.08548	2.23	0.026	.023327 .358422	.817021
crd*	.2356362	.07499	3.14	0.002	.088649 .382623	.723404
mrkt*	-.3078317	.11221	-2.74	0.006	-.527767 -.087896	.919149
inc	1.46e-06	.00000	0.95	0.340	-1.5e-06 4.5e-06	69548.9

(\*) dy/dx is for discrete change of dummy variable from 0 to 1