

Ethiopian Practices in Urban-Urban and Urban-Rural Linkages from Road Transportation Perspectives in Hawassa City, Ethiopia

Gebrechristos Nuriye (Ph.D.)
Ethiopian Civil Service University
E-mail: gebrechristosn@yahoo.com

Abstract

Developing countries like Ethiopia has low level of urbanization and high rate of urban growth. In response to prevailing weak urban-urban and urban-rural linkages, Ethiopian government has formulated a policy that was aimed at strengthening urban-urban and urban-rural linkages. This policy response has a root to eradicate or if not to reduce poverty which can only be achieved through integrating urban resources with other urban and rural resources. Transportation is a key sector in revolutionizing the socio-economic environment from global to local perspectives. In urban history physically far areas were isolated from their counterparts due to distance decay. Advancement in transportation changed such situation and as a result physical distances have become less important to deter the interaction of far places. In the same manner transportation in Hawassa is playing key role in connecting isolated urban and rural areas within short span of time, compared to its performance during old ages. Transportation in Hawassa is playing the role better than previous times by way of connecting isolated centers to/from higher nodes in the region and outside. However the extent of the linkage is still weaker and disorganized compared to the expectations of the century in globalizing world. This paper evaluates urban-urban and urban-rural linkages from historical and theoretical perspectives and assesses the extent of urban-rural and urban-urban linkages in Hawassa City of Ethiopia focusing on road transport linkage. Data from secondary sources including different literature and from empirical studies are used to evaluate the ongoing situations in Hawassa City. Data of traffic flow survey was also in use to see the general trends.

Keywords: Road transportation, urban-urban linkage, urban-rural linkage, maxi buses

1.0. Introduction

1.1. Background

Hawassa is administrative capital for regional government of Southern Nations, Nationalities and People's State of Ethiopia. The city is located 275km from national capital, Addis Ababa to south. Astronomically the city is at 7°3' North Latitude and 38°28' East Longitude. According to estimates from Central Statistical Authority, the city is with 200,396 population in 2011. The city has some fifty five years history since it has been developed as urban center. Hawassa was developed as an urban center from grazing land around Lake Hawassa based on the site plans that had been designed before the inhabitants settled. Hawassa is the biggest city in the region and is a center for administration, manufacturing, service and culture. At its early stage the city exclusively inhabited by immigrants that has come from different areas across the country. Thus, from the outset, Hawassa enjoyed Urban-urban and urban-rural linkages.

2.0. Urban-Urban and Urban-Rural Linkages: Historical and Theoretical Perspectives

History of urbanization and urban civilization can be traced back to thousands of years before when urban settlements first emerged in Mesopotamia, followed by formation of urban centers around valley areas such as Indus Valley, Nile Valley, and Yellow River. Literature on the theories of origins of urbanization show that emergence of urban centers is clearly associated with certain favorable conditions around rural areas indicating the linkage from the very beginning. Among many factors behind development of urban centers some include their rural linkage in connection to agricultural surplus, hydrological factors, population pressures, trading requirements, defense needs and religious causes (Paul and Linda: 2012). All these express strong urban-urban and urban-rural linkages. Favorable location components such as perennial rivers, civilization and economic development played positive role for urbanization and urban growth in those areas. Consequently urbanization speeded up in other parts of Europe (e.g. Ancient Greece and Roman Empire), North America and Asia.

Development in transportation services, urbanization and urban growth further impacted each other. In more developed countries the main factors behind increased urban growth are associated with economic development as industrial revolution. Industrial development has given rise to labor migration from other urban and rural areas. Economic development led by industrial development served as pull factors so that agricultural surplus workers migrated from rural to urban areas. Urban planning aimed at regulating city development during 19th century in more developed countries considered rural areas as response to evils of industrialization. Earlier pioneers like Ebenezer Howard (1902: Garden cities of tomorrow), Patric Geddes (Cities in Evolution: a concept to plan for both town and country), Clarence Perry (the idea of neighborhood units), Lewis Mumford (1938: The Culture of Cities: a pioneer of regional planning movement), Patric Abercrombie (1879-1957: Key planner in

‘Greater London Plan of 1944’) ... etc worried about cities of their time and suggested urban areas planning should go along with their rural surroundings. This is because urban areas with other urban areas and rural areas cannot exist in isolation due to inevitable interaction between them by the way of multifaceted flows of people, information, goods and services. Joachim von Braun (2007:2) argued that the efficiency and effectiveness of infrastructure and market and non-market institutions are important in facilitating such inter-linkages.

Though urban-urban and urban-rural interactions exhibited themselves much earlier, the evolution of theoretical thinking on spatial allocation of economic activity first discussed by German Geographer named Von Thunen in 1826 using a model of agricultural land use. He showed how land use is a function of transport costs to markets and the farmer’s land rent. His model generated concentric rings of agricultural activity around a central city, with dairy and intensive farming closest to the city (Joachim von Braun 2007:3). Another important figure in this regard was Walter Christaller (1933) who achieved a breakthrough when he developed the central place theory to explain how urban settlements are formed and spaced out relative to each other. His conceptual model showed not only urban-rural linkages but also urban-urban linkages. Though such model is important, the prototype of cities described by the model were not found in actual world because assumptions cannot be satisfied in the real world.

2.1. Urban-Urban and Urban-Rural Linkages in Developing countries

Experiences from Asian countries show that the attempts made to strengthen urban-urban and urban-rural linkages have lots of lessons to extract. Nepal designed a national level program known as “The rural-urban partnership program (RUPP)” a program that involved 13 municipalities and 33 rural market centers. Nepal considered a program as a tool to its regional development through strong and mutually supportive rural-urban interactions (Ramesh B. et al 2005:6). The program identified market zones considering municipalities as the center of gravity. The process of urbanization intensified socio-economic interactions stimulating urban growth and rural transformations creating forward and backward linkages between urban and rural economies. Ramesh B. (2005:16) argues that sustainable urban development needs proper mobilization of human, economic, social and financial resources at local level. Active participation and the partnership with private sector is required for rural-urban interactions. Karan discussed about the role of civil society for rural-urban linkage in such a way that successful mobilization of civil society and their appropriate utilization in implementing program activities helped to strengthen rural-urban linkages.

Philippines had also a successful experience by strengthening rural-urban linkages. Their experiences show that a physical border to delimit urban from rural has been removed by bringing together Naga City and 14 surrounding municipalities (one city and fourteen municipalities) into one administrative entity. The attempt was done through cluster planning of local government units, resource pooling and better access to opportunities for capacity building. According to Ramesh, the presence of various commercial establishments, service outlets, professional offices, hospitals, schools, churches and recreational facilities make the City a busy area in the daytime causing daytime population to double (Ramesh B. 2005:39-49). According to experiences from Indonesia, Partnership for local economic development was seen to bridge regional economic disparities. Ramesh B. (2005:72-73) pointed out that growth and equality of interpersonal and interregional incomes were the critical issues in Indonesia’s regional development so that the linkages, at the macro level, are in the form of circular/seasonal migration, remittance, food provision and administrative connections facilitated, or hampered, by the conditions of transportation infrastructure, market and transit/storage facilities, and market information.

To sum up experiences from Asian countries namely Nepal, Philippines and Indonesia show that the links were intensified by socio-economic interactions and infrastructural development. These incorporate transport and communications, migration, cultural exchanges between urban and rural, urban economic activities in the rural areas for instance industrialization in rural areas and rural economic activities in the urban areas such as urban agriculture. Besides, access roads, transportation facilities, job opportunities, health and education services have served as connectors.

2.2. Ethiopian Experiences and Policy Framework

Ethiopian government has strong stand to eradicate poverty in the nation by taking different developmental actions. Poverty is labeled as the main and the only enemy in Ethiopian context. Since level of urbanization in Ethiopia is still less than 20 per cent, urban development fully depends on the level of interactions to its rural economy. Labor, food, information, etc come from rural areas whereas inputs for agriculture, high hierarchy services such as higher education and specialized health treatments are provided by urban locations. This is why urban-urban and urban-rural linkages are one of strategy pillars for urban development in Ethiopia. One of the areas Ethiopia looks to realize urban development is to foster urban-urban and urban-rural linkages. Development of secondary cities and other small towns supported by planning and mapping is among actions to be taken to foster the link. Development of secondary cities and other small towns is important because such small towns usually emerge from rural market places or other service centers like church, school, flour mill and

so on. Their development facilitates the link by the way of playing the role of serving as places to purchase inputs and to sell final products at local markets. This contributes for linking rural producers to the national and global market in large. Besides higher level services such as big money transactions, specialized health and education services depend on urban areas. The role of transportation is at the center of such interactions via transport infrastructure (e.g. road access) and services (supply of efficient fleets).

Infrastructure connecting urban with other urban and rural areas widens an area of influence. Rural productions are transported, information is exchanged, and people to people communications is enhanced. Getnet and Mehrab (2010:6) highlighted rural-urban linkage in Ethiopia is manifested in four different ways which are:

- **Flow of goods:** rural areas provide food, labor, and raw materials for demands of population and economic activities.
- **Flow of information:** involves information to urban areas about productions, raw materials, markets and prices in rural areas. Information is also about manufacturing and processing industries in urban centers including markets and prices indicating importance of information link between urban-urban and urban-rural.
- **Flow of capital:** involves remittances from migrants to relatives and communities, urban-based investments in rural areas, and credit from urban-based financial institutions to rural areas.
- **Flow of people:** takes place in the form of migrations that involves movement of people from urban to other urban areas or from urban to rural areas.

Ethiopian government is working hard and striving to foster linkage between rural and urban by way of infrastructure development and strengthening social services. Up until recent years, Ethiopian urban centers are not sufficiently supportive enough for the rural areas due to many interrelated urbanization problems. The important argument in this regard is that Ethiopian urbanization is characterized by low level of urbanism, high urban growth rates, unplanned development, poor urban-rural linkages, spatial variation in size (few urban centers are accommodating majority of urban population), high primacy (violating rank size rule), low infrastructure, mixed style of life (many small towns have partly rural manifestations), informality, and pronounced poverty. In response to such urban problems, government incorporated urban issues in its consecutive terms of plans. The first three years term plans was “Sustainable Development and Poverty Reduction Program” (2002/03-2004/05) (SDPRP) guided by development strategy known as “Agricultural Development Led Industrialization (ADLI) fostering urban-rural linkage. The second five years plan was “A Plan for Accelerated and Sustained Development to End Poverty (2005/06-2009/10) (PASDEP). In regard to urban development, PASDEP was guided by two packages. These were urban development and urban good governance packages each having its own intervention areas. Some of interventions include expansion of micro and small enterprises, integrated housing development program, land and infrastructure provision, provisions of social services, and urban planning. Interventions were aimed at achieving millinuum development goals, reducing urban poverty and strengthening rural-urban and urban urban linkages.

Urban-urban and urban-rural linkage in PASDEP was designed to be achieved through

- a. Implementing a small town’s development program,
- b. Satellite imagery to provide digital mapping to a large number of cities,
- c. Preparing and providing management support services for provision of basic services,
- d. Market infrastructure and service development.

The third five years term plan is “Growth and Transformation Plan” (2010/11-2014/15) (GTP). This is currently ongoing plan with huge proposals that include mega projects in areas of energy supply, infrastructure development (railways, dry ports, highways, telecommunications) and construction of huge factories. These developmental efforts are assumed the role of facilitating urban-urban and urban-rural linkages (GTP document:83). GTP targeted to achieve road network from 48,800km in 2009/10 to 64, 500km in 2014/15 and to increase road density (km/1000 sq. km) from 44.5 to 123.7 and road density (km/1000 population) 0.64 to 1.54. GTP has also targeted to reduce number of places further than 5km from all weather roads from 64 per cent to 29 per cent. In the planning history of Federal Road Authority, there was no formal plan to connect rural kebeles (the lowest administrative units within the administrative hierarchy). However the Growth and Transportation Plan has targeted to construct 71,523 kms new all weather roads that connect all rural kebeles with main roads through the program called Universal Rural Road Access Program (URRAP). These empirical evidences tell us efforts of government to foster urban-urban and urban-rural linkages.

Adaa dairy cooperative is another Ethiopian experience to extract valuable lessons. The study results show that rural-urban linkage is through the value chain of milk production. The link is manifested by exchange of resources between urban and rural. Milk and other dairy products produced by cooperatives are supplied to urban areas. Azage, etal pointed out that some fresh milk was sold directly to hotels and restaurants in Addis Ababa, Debre Zeit, Dukem and Nazareth towns. Conversely, medical services to caws and market services are supplied by urban areas showing mandatory link between urban and rural areas.

2.3. Urban-Urban and Urban-Rural Linkages in Hawassa

Urban areas in Ethiopia are dependent on rural resources for their livelihood, goods and services. However they provide limited services for their rural surroundings in which case Hawassa is not exceptional. Exchange of goods and services between urban and rural areas is facilitated by transportation and communication infrastructure that creates access to urban and rural markets. The interaction on the bases of give and take principle. Thus rural areas give raw materials and labor to urban areas and in turn take finished industrial products and services from urban centers fostering urban-urban interaction usually in a way that small urban centers receive high order services from bigger centers. Direct transportation service catchment area from Hawassa extends nearly to 300kms in different directions. Currently 37 destinations from Hawassa are served by public transport where the shortest inter-urban distance is 13kms between Hawassa and Tula. Long distances are 287, 280 and 273kms between Hawassa and Sawula, Arbaminch and Addis Ababa respectively. Main roads that connect inter cities transverse in all directions from the city and serve as distributors and collectors. Development in telecommunication infrastructure is also contributing to high level of urban-urban and urban-rural linkages. Universities and private colleges are of greater values in strengthening urban-urban and urban-rural linkages. Hawassa being administrative center for the region, Sidama Zone and Hawassa City Administration attracts many flows of people, goods and services across the region and outside.

Hawassa City shares borders with Oromia Region (the biggest regional state in Ethiopia) and surrounding woredas. This presumably connects Hawassa City with other urban and rural areas within the region and outside the region showing intensive urban-urban and urban-rural linkages. Hawassa represents higher order settlement within 200km radius creating strong socio-economic interactions adding to the linkages. Interventions of both federal and regional governments by way of infrastructure development has been creating conducive environment for market access, supply of social services, strong decentralization and strengthen capacity of local governance. Such efforts are playing key roles in fostering linkages between Hawassa City and other urban and rural areas. The migration link is also important though migration pattern in Ethiopia is usually from low urban centers to high urban centers and from rural to urban areas not because of pull factors in urban areas but mainly because of push factors in rural areas adding to already prevailing urban poverty.

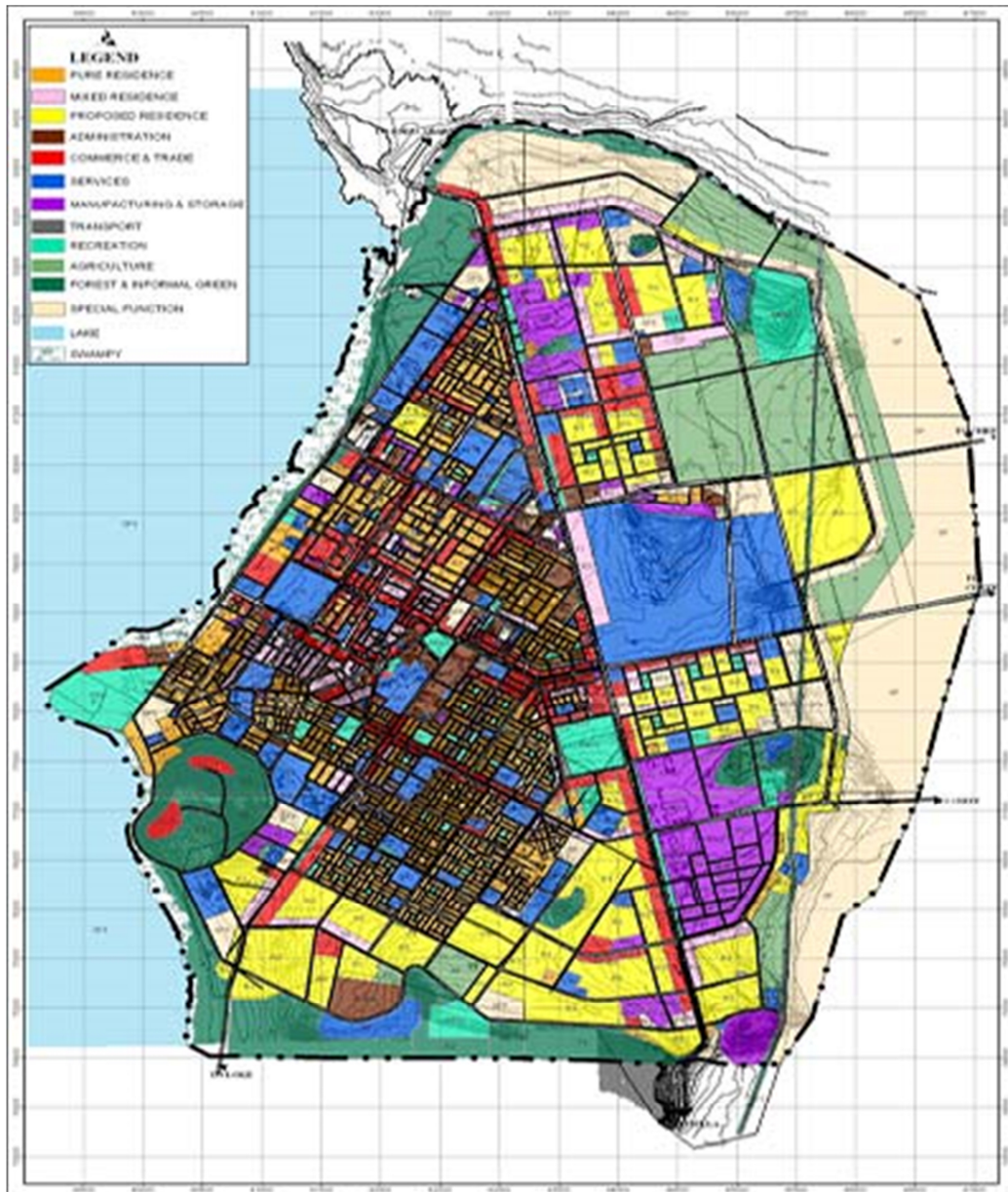


Figure 1. Land use and road network of Hawassa City, 2013
Source: Hawassa City Administration, 2013

The following table shows that Hawassa was connecting only limited major destinations with limited number of vehicles transporting few passengers indicating low urban-urban and low urban-rural linkages eleven years ago. The highest flow was to and from Yirgalem town followed by Shashemene town having 170 (both ways) and 124 (both ways) respectively. The total daily flow was only 424 vehicles in 2003. Of which Hawassa used to send only one maxi bus to Addis Ababa and receive the same during 2003 transporting less than 130 passengers both ways. From this data we can understand that eleven years before, transport situation in Hawassa was not well performing clearly indicating very low urban-urban and urban-rural linkages.

Table 1 Daily Flow Pattern of Public Transport from Hawassa to Other Major Destinations

Origin	Destinations	Distance from Hawassa	Number of vehicles per day from Hawassa	Number of vehicles per day to Hawassa	Number of total vehicles per day from and to Hawassa
Hawassa	Shashemene	22	62	62	124
	Yirgalem	54	85	85	170
	Wondo Genet	40	4	4	8
	Yirba	30	10	10	20
	Tula	42	10	10	20
	Kuyera	36	30	30	60
	Leku	24	10	10	20
	Addis Ababa	275	1	1	2
			212		424

Source:- Sidama Zone Trade Tourism and Transport Department (2003), Hawassa.

Data shown in appendix is statistics for fifteen days flow survey comprising days from December 10-24, 2013. Public transport situation in Hawassa has shown dramatic changes within eleven years time. Huge differences between statistics in table 1 and 2 is observed. After eleven years, based on fifteen days data of December, 2013 (Appendix), only one way daily average from Hawassa to different destinations has become more than 1000 fleets of all categories. This is big change that shows the city is transporting more than 180,000 passengers and covering more than 60,000kms which is incomparably higher than that of 2003 performance in public transport sector showing highly strengthened urban-urban and urban-rural linkages by means of transportation and road infrastructures. Data in table 2 is derived from appendix.

Table 2 Executive Summary Statistics computed from the appendix table

Statistics	Number of outgoing buses per day				Passengers transported per day				Distances covered per day			
	Mini buses	Midi buses	Maxi buses	Total	Mini buses	Midi buses	Maxi buses	Total	Mini buses	Midi buses	Maxi buses	Total
Minimum	695	182	13	890	8340	6186	702	15236	32665	15652	3562	51879
Maximum	794	294	17	1105	9528	9996	918	20442	37318	25284	4658	67260
Average	757	241	15	1013	9078	8432	824	18334	35557	21328	4181	61066
Per cent	75	24	1	100	50	46	4	100	58	35	7	100

Source: Computed from Appendix (Daily Public Transport Flow Survey from Hawassa to all Destinations by Fleet Category between December 10-24, 2013)

The executive summary table 2 shows that 75 per cent of mini buses transported 50 per cent of passengers and cover 58 per cent of distance where as 24 per cent of midi buses transported 46 per cent of passengers and cover 35 per cent of total distances. When we sum up current situations, both mini and midi buses make up 95 per cent of total fleets, carrying 96 per cent of passengers and covering 93 per cent of total distances. The results in the table also show that the existing connectivity level of high occupancy buses are minimal in all dimensions except connecting far places widening catchment area of Hawassa City. One per cent of high occupancy buses transported 4 per cent of passengers and covered 7 per cent of total distances. Among 37 destinations connected by Hawassa road transport, some places like Addis Ababa, Arbaminich and Sawula are more than 270kms apart from Hawassa which are usually connected by Maxi buses. Among three categories, midi buses are most efficient because though they constitute only 24 per cent of the total fleet, they carry nearly 50 per cent of passengers and cover not less than 35 per cent of total distances. Mini and midi buses travel within 300kms range and their role in urban-urban and urban-rural linkages is tremendous not only because they travel short to medium distances but also because of their higher frequency within the range.

Transport development and services policy should encourage high occupancy transport modes to make the transport system more efficient and effective. In this regard maxi buses should get attention and be encouraged, hence few fleets can carry many passengers and cover long distances compared to both mini and midi buses. Hierarchical difference has also contributed to high level of connectivity for Hawassa City because many customers flow from different places to Hawassa to get administrative services including taking part in multiples conferences. Better social services such as improved medical serves, education and presences of higher order goods in the shop also attract many to Hawassa further strengthening urban-urban and urban-rural linkages. This empirical evidence is in compliance with theoretical models that established possible relations between different urban centers. In view of Christaller's Central Place Theory, Hawassa represents high order settlement supplying high order goods and services for low order urban settlements and rural areas in its surroundings.

Among many agents that is facilitating the linkages, transportation is at the center of all sorts of urban-urban and urban-rural linkages by satisfying accessibility requirement within physical and socio-economic interactions.

3.0. Conclusions

Historical and theoretical components show that transportation has been playing greater role in urban-urban and urban-rural linkages by creating access and promoting interactions. Earlier planners indicated that urban planning efforts that did not take their rural surroundings into consideration were not workable so that they clearly suggested and introduced the necessity of considering rural areas and other urban areas while planning for a certain urban center. With this understanding certain developing countries such as Nepal, Philippines and Indonesia designed a program that take care of the linkages and they were found to be successful in improving the level of overall socio-economic developments. These countries strengthened the linkage by socio-economic interactions and infrastructural development.

Urban-rural linkage in Ethiopia is not a choice but a necessity, hence more than 80 per cent of its total population lives in rural so that it is not possible to bring development and make resource share fair by ignoring rural areas. Poverty eradication efforts cannot work without proper establishment of the linkage. Ethiopian government has a long sighted vision to bring a nation into middle income nations' level by reducing and eventually eradicating poverty from a nation. This attempt cannot be achieved without fostering urban-urban and urban-rural linkages. With this understanding, current Ethiopian government showed commitments to strengthen the linkages in all its consecutive plans. The first three years term plan focused on implementation of Agricultural Development Led Industrialization which was aimed at increasing agricultural productivity, market access and export oriented productions serving as a milestone for industrial development which realizes the link in the due processes. The second five years term plan officially announced urban-urban and urban-rural linkages as one of the four strategy pillars in the urban development sector. The third and currently on its way for wrap up five years term plan showed the commitment through implementing mega projects such as railways, standard highways, intensification of agricultural and non-agricultural industries, and implementation of a program for universal rural road access and so on. Ethiopian experiences show that urban-urban and urban-rural linkages take place in the form of flow of people/migration, flow of information, flow of goods and services that are facilitated by means of transportation and infrastructure developments. Consequently Hawassa is experiencing high level of connectivity through transportation infrastructure and services. Thirty seven areas ranging from 13kms to nearly 300kms are currently connected via public transportation. Urban-urban and urban-rural linkage in Hawassa is in the form of administrative services, migration, exchange of goods and services including specialized services such as referral hospital and universities.

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Appendix: Daily Public Transport Flow Pattern from Hawassa to all Destinations by Fleet Category between December 10-24, 2013.

Dates in Dec, 2013	Outgoing buses per day								Passengers transported per day								Distance covered per day							
	Mini		Midi		Maxi		Total		Mini		Midi		Maxi		Total		Mini		Midi		Maxi		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
10	785	75	245	23	15	2	1045	100	9420	51	8330	45	810	4	18560	100	36895	59	21070	34	4110	7	62075	100
11	790	79	198	20	13	1	1001	100	9480	56	6732	40	702	4	16914	100	37130	64	17028	30	3562	6	57720	100
12	792	73	275	26	14	1	1081	100	9504	48	9350	48	756	4	19610	100	37224	57	23650	37	3836	6	64710	100
13	762	73	264	25	16	2	1042	100	9144	48	8976	47	864	5	18984	100	35814	57	22704	36	4348	7	62866	100
14	697	72	258	27	14	1	969	100	8364	47	8772	49	756	4	17892	100	32759	56	22188	38	3836	6	58783	100
15	785	79	186	19	17	2	988	100	9420	47	9724	48	918	5	20062	100	36895	56	24596	37	4658	7	66149	100
16	758	78	198	20	15	2	971	100	9096	55	6732	40	810	5	16638	100	35626	65	17028	30	4110	7	56764	100
17	784	75	254	24	16	1	1064	100	9528	50	8636	45	864	5	19028	100	37318	59	21844	34	4384	7	63546	100
18	695	71	268	27	16	2	979	100	8340	45	9111	50	864	5	18315	100	32665	54	23048	38	4384	7	60097	100
19	748	72	273	26	17	2	1038	100	8976	47	9282	48	918	5	19176	100	35156	56	23478	37	4658	7	63292	100
20	752	71	294	28	14	1	1060	100	9024	45	9996	51	756	4	19776	100	35344	55	25284	39	3836	6	64464	100
21	695	70	282	28	15	2	992	100	8340	45	9588	51	810	4	18738	100	32665	53	24252	40	4110	7	61027	100
22	775	78	198	20	17	2	990	100	9300	55	6732	40	918	5	16950	100	36425	63	17028	29	4658	8	58111	100
23	762	80	182	19	14	1	958	100	9144	57	6186	38	756	5	16086	100	35814	65	15652	28	3836	7	55302	100
24	758	74	245	24	16	2	1019	100	9096	50	8330	45	864	5	18290	100	35626	58	21070	35	4384	7	61080	100
Total	11348	75	3620	24	229	1	15197	100	136176	50	126477	46	12366	4	275019	100	533356	58	319920	35	62710	7	915986	100

Source: Hawassa City Administration Transportation Office, January, 2014

Note: **Mini buses are buses with low occupancy capacity ranging from 12 to 23 seats.**
Midi buses are buses with medium occupancy capacity between 24 and 45 seats.
Maxi buses are buses with high occupancy capacity between 46 and 62 seat

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