ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF PUBLIC ADMINISTRATION AND DEVELOPMENT MANAGEMENT

Analysis of Inter Organizational Relation in Urban Health Extension Program Implementation through Policy Network Analysis: The Case of Addis Ababa, Ethiopia.

By
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A thesis submitted to the Department of Public Administration and Development Management of Addis Ababa University in partial fulfillment of the requirements for the Degree of Masters in Public Management and Policy (MPMP)

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This is to certify that the thesis prepared by *Ephrem Weldeyes* entitled *"Analysis of Inter Organizational Relation in Urban Health Extension Program Implementation through Policy Network Analysis. The Case of Addis Ababa, Ethiopia."*, which is submitted in partial fulfillment of the requirements for the Degree of Masters in Public Management and Policy (MPMP), complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university and that all sources of materials used for the thesis have been duly acknowledged.

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Abstract

Ethiopia's Urban Health Extension Program (UHEP) is an innovative government plan to ensure health equity by creating demand for essential health services through the provision of health information at a household level and access to services through referrals to health facilities. The ministry of health has realized there is need for cross-sectorial support for urban health to achieve such an ambitions policy objective. Despite the substantial progress achieved in the UHEP, there have been considerable challenges such as unsatisfactory and inadequate collaboration among sector offices having important roles in implementing UHEP. By the aforementioned problems and the methodological gap the study sought to analyze inter organizational relations in UHEP implementation through policy network analysis. The study utilized social network approach to provide network structure and positon of actors in resource sharing, coordination and partnership networks with in UHEP implementation. The findings were based on 64 sample organizations and reveal that on average UHEP implementation network had resource sharing relationships with 2.9% (low density) and worked in coordination with 27.9% (lower density) and in partnership with 16.2% (low density) of the other UHEP implementers in the network. In the network of resource sharing the most central or influential actor were Woreda Health Office (WHO) and Health Center (HC). The Sub City Health Office (SCHO) has designed as the most central actor in the coordination network by other organizations. Regarding the partnership network, WHO was the most prominent actor in the network. The study conclude that More organizations worked independently towards similar goals while being aware of others work (coordination), than organizations working together as a formal team (partnership). The study also recommended some points to improve inter organizational relation in UHEP implementation such as policy maker should Create fluid boundaries and eliminate barriers for working across organizations, promote private health partnerships.

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Acronyms

AACA	Addis Ababa City Administration
BoH	Bureau of Health
CSA	Central Statistics Agency
HEP	Health Extension Program
HEWs	Health Extension Workers
HSDP	Health Sector Development Program
MDGs	Millennium Development Goals
FMoH	Federal Ministry Of Health
PHC	Primary Health Care
SNA	Social Network Analysis
UHEP	Urban Health Extension Program
UHE-Ps	Urban Health Extension Professionals
UHEWs	Urban Health Extension Workers

Chapter one

1. Introduction

1.1. Background of the study

Ethiopia is one of the sub-Saharan countries most affected by high disease burden, aggravated by a short age and imbalance of human resources, geographical distance, and socio-economic factors (Bilal, Herbst, & Zhao, 2010). In 2004, the government introduced the Health Extension Program (HEP), as primary health care delivery strategy, to address the challenges and achieve Millennium Development Goals (MDGs) within a context of limited resources (CSA, 2010).

Primary health care services are fundamental to improving health and health equity, particularly in the context of low and middle-income settings where resources are scarce (Bilal, Herbst, & Zhao, 2010). During the past decade, Ethiopia undertook an ambitious investment in primary health care known as the Ethiopian Health Extension Program that recorded impressive gains in several health outcomes (FMoH, Second generation health extension program, 2010).

When the program introduced under Health Sector Development Plan (HSDP II), the fundamental philosophy have been that if the right health knowledge and skill is transferred, households can take responsibility for producing and maintaining their own health. Substantial investments in human resources, health infrastructure, pharmaceutical supplies and operational costs have been made for the successful implementation of the program. HSDP III planned to cover all rural Kebeles with the HEP, aiming to achieve universal primary health care (PHC) coverage by 2008 through vigorous and incremental implementation of the program nationwide. From the very start, HEP was supported with the development of 16 different health intervention packages to be delivered by health extension workers (HEWs) at community level. These packages along with implementation guidelines were made available to implementers as well as to technical and vocational training institutions (FMoH, 2008). Ethiopia has made impressive gains in several health outcomes nationally and the HEP has been credited with greatly improving utilization of maternal and new born health services (FMoH, Second generation health extension program, 2010)

The Ethiopian government almost twelve years of experience in implementing the rural health extension program was adapted for the urban setting nearly eight years ago and is an explicit part of the current Health Sector Development Plan (HSDP) IV. Ethiopia's Urban Health Extension Program is an innovative government plan to ensure health equity by creating demand for essential health services through the provision of health information at a household level and access to services through referrals to health facilities (USAID, 2012).

In order to expand urban health in the country, 16 health packages along with implementation manual have been developed and distributed for implementation. The UHEP already in progress in Tigray, Amhara, Oromia, Harari, Dire Dawa, and Addis Ababa (FMoH, 2010). Addis Ababa is currently experiencing the fastest urban growth rates in the country. Regarding Addis Ababa city administration, there is a greater prevalence of HIV/AIDS in the urban setting, non-communicable, and there are significant issues in sanitation and waste management that affect urban health (USAID, 2012).

The packages of interventions are in four primary areas: Hygiene and Environmental Sanitation, Family Health Care, Prevention and Control of Communicable and Non-Communicable Diseases, and Injury Prevention, Control, First Aid, and Referral. While many interventions are similar to the rural program, some key differences from the rural setting include the prevention and control of non-communicable disease, mental health, and violence and injury prevention, as these are expected to affect urban populations more significantly. Unlike the rural setting, the government chose to use clinical professionals with three years of nursing education in private colleges as the primary outreach workers and provided them with an additional three months of training to develop their public health skills (USAID, 2012).

The design of the HEP/UHEP requires the support of various domestic stakeholders. The communities (model families) are expected to collaborate and disseminate health information and practices. The local village administration supports HEP by providing political leadership, mobilizing the communities, and monitoring the performance of HEWs based on an agreed plan. The Federal Ministry of Health (FMOH) provides the curriculum and guidance on the recruitment of HEWs and mobilizes resources from development partners for procurement and distribution of medical equipment and supplies for the health posts. The regional or city health bureaus and zonal health departments provide strategic leadership as

well as technical support to the districts in implementing the program. They also cover the stipend and salaries of HEWs during training and deployment, respectively (FMoH, Second generation health extension program, 2010).

For the urban health setting, particularly in regards to sanitation. Cities have organized an inter-sectorial task force, whose members include the urban beautification agency, water and sewage authority, education, the Bureau of Women, Youth and Children, the RHB, and the office for land administration under the leadership of the deputy city mayor. These task forces appeared to vary in their composition and effectiveness across areas (USAID, 2012).

The importance and need for studying the inter-organizational collaboration within public sector originates from the fact that an organization and the course of social life hinge on the complex system of operations run by multiple organizations. In addition, policy implementation inherently involves networks of multi-actors participating in policy programs (Klijn & Koppenjan, 2000). Inter-agency collaboration are thought to assist service providers in coordinating professional activities resulting in enhanced service to clients (ibid).

Policy network analysis became a useful way to indicate the patterns of relations that exist between interdependent actors involved in processes of public policy making particularly in policy implementation and make relationships visible. Once visible or identified network analysis can be used to develop and support network relationships as well as intentionally create them all for generating shared learning and meaning. Policy network analysis is important but underutilized method to examine different actors' relation in policymaking process (Jones & Thomas, 2007). Inter organizational collaboration due to improvement of efforts made, in the wake of consolidation of resources, goals and actions, play a significant role in the closing the gap. In this sense, this research attempted to describe the inter organizational relationship in policy implementation through policy network analysis.

1.2. Statement of the problems

The need for inter-agency collaboration and the problems of achieving it still haunt us (Jones & Thomas, 2007). As argued (Jones et al., 2004) there is a great deal of evidence that efforts to achieve collaboration often remain 'a self-interested process with organizations trying to maximize autonomy and minimize dependency' and that they have 'remained conceptually

elusive and perennially difficult to achieve'. The lack of inter-agency co-operation is an enduring theme in public policy (Jones & Thomas, 2007).

The FMoH realized the need for cross-sectorial support for urban health to facilitate the achievement of goals and successful implementation of UHEP and organized a task force. Despite, substantial progress has been achieved, there were considerable hindrances that have been challenge to the achievement of the program objectives. Unsatisfactory collaboration among sector offices having important roles in implementing UHEP, inadequate coordination mechanism for public private partnership are furthermost challenges among others (FMoH, 2016). The USAID (2012) further explain the challenges of unsatisfactory collaboration, the UHEP referral networks managed by the urban health extension professionals were not standardized and unidirectional, with no feedback returned on the outcome of referral. The urban health extension professionals' linkage to referral sites is limited to public health facilities and does not adequately consider the role of private health facilities in urban settings nor the role of other social service agencies.

Studies were conducted on the implementation of UHEP in Ethiopia but none of them attempt to look from the policy making process perspective because implementation is the one stage to policy making process, rather from public health issues and most of them were public health students and scholars. Tsedale (2014) assess factors affecting UHEP implementation. Mesafint (2015) also studied the attitude and Participation Level of Households towards UHEP. Mulugata (2012) researched the utilization of health extension program service. However, concerning the researcher's knowledge there are no researches have been conducted through policy network analysis for the inter-organizational relationship of urban health extension program implementation in Addis Ababa, Ethiopia. Therefore, this study would contribute to fill the methodological and literature gap in the area of study. In addition, pursued to describe the inter-organizational relation of urban health extension program implementation.

1.3.Objective of the study

1.3.1. Main objective of the study

The main objective of this study was to analyzing inter organizational relations of urban health extension program implementations through policy network analysis: the Case of Addis Ababa, Ethiopia.

1.3.2. Specific objectives

1. To describe the *whole network*[1] structural properties and identified the most *central/influential*[2] actor/s in coordination network in the program implementation.

2. To describe the whole network structural properties and identified the most central/ influential actor/s in partnership network in the program implementation.

3. To describe the whole network structural properties and identified the most central/ influential actor/s in resource sharing network in the program implementation.

1.4. Research questions

1. What are the whole network structural properties and who is the most central or influential actor in resource sharing network in the program implementation?

2. What are the whole network structural properties and who is the most central or influential actor in coordination network in the program implementation?

[1] Also called *full network/network census*, requires a single set of actors within a well-defined network boundary. The data includes the ties that are present among all actors; it may involve several different types of relational ties. In this study, the relational ties are coordination, partnership and resource sharing among actors.

[2] An actor said to be *central/influential* should have more ties with other actors. Because, they may have alternative ways to satisfy needs, access to, and be able to call on more of the resources of the network as a whole and hence are less dependent on other actors.

3. What are the whole network structural properties and who is the most central or influential actor in partnership network in the program implementation?

1.5. Scope of the study

The study enclosed by geographic boundary i.e. Addis Ketema sub-city, Addis Ababa. The investigation focus on AACA health extension program implementation. Further, the study area mainly concentrate on administrative part of the program implementation not concerned with technical and operational area of the program implementation. The study attempt to analyses the implementation of the UHEP from the inter-organizational perspective through policy network analysis. Therefore, the study sample regarded only those organizations, which are actors in the implementation of the program, have formal and informal relation and share resource.

1.6. Significance of the study

The finding and recommendation of this study would have a range of significance for policy makers in the area and literature contribution.

For policy makers (Addis Ababa Health Bureau and Sub-City Health Office), the finding of the study could contribute to decision making to improve the collaboration effort among sector offices having important roles in implementing the program. Because, the study finding reveals the structure, pattern and strength of the inter-organizational relationships in implementing the program. Based on those results policy maker can develop or support network relationships as well as intentionally create them. In addition, relation can be avoided i.e. costly, time consuming and redundant. By identifying the central actor in the networks, the policy maker can also decides on centralization of the network. The isolated actor also can be identified and incorporate in the implementing the program.

1.7. Limitation of the study

Despite the strength of the study the researcher face some limitation while conducting the study. The main constraint were financial challenges that limit the study area to one of the ten sub-city i.e. Addis Ketema sub-city. In addition, lack of empirical studies in the urban health

extension program from inter organizational relation perspective using social network analysis approach limit the discussion of the study to compare and contrast with other locally available studies.

1.8.Organization of the study

The study organized in five chapters. It started with the introduction part, as seen above and comprises background of the study, statements of the problems, and objective of the study, research question, significance and scope the study. Followed by chapter two where relevant theoretical and empirical literature on urban health extension program and policy network analysis are reviewed. The research design and including research approach, description to the study area, sampling method, data analysis method and the ethical consideration were listed and described in detail in chapter three. Chapter four provide data interpretation and analyses the relational data based on the research question on the relationship among UHEP implementation actors. The last chapter concludes the study with presentation of the conclusion, some recommendation and policy implications.

Chapter two

2. Literature review

2.1. Introduction

This chapter segmented up to five sub chapters in which the literature review will present. In the first sub-chapter conceptual background will be presented about the studied program, which is UHEP. The second sub chapter provided with policy implementation approaches. The third sub-topic reveals how Policy network analysis utilized in studying policy implementation. The fourth sub-chapter comprises relevant literatures about theories and concepts of network analysis is deeply reviewed. Finally, the conceptual frameworks develop and present from the aforementioned theories and conceptual reviews.

2.2. Conceptual background to Ethiopian HEP

2.2.1. Health Extension Program

HEP is a community-based health service delivery program whose educational approach is based on the diffusion model in which community behavior is changed step by step; training early adopters first and moving to the next group that is ready to change. It focuses on the basic and essential promotive, preventive, and selected high impact curative health services targeting households. It was designed to improve the health status of families by employing the concept and principles of Primary Health Care (PHC). HEP requires full participation from each individual, family, governmental and non-governmental organizations and associations. In addition, both PHC and HEP have targeted at using local technologies as well as community skill and wisdom. The only and exceptional difference between the two is that HEP focuses on households at the community level and it involves fewer facility-based services (FMoH, 2008). Furthermore, HEP addresses the health need of each member of the household as individual and as a household unit. This is done considering a great deal of work on health promotion which can be done at home by parents who are informed on key health issues and supported with health promoting techniques and skills.

To implement this program more than 38,000 health extension workers were trained and deployed in country (FMoH, 2015), All HEWs are females except in some pastoral areas, with a minimum of 10th grade education and recruited from the kebeles where they are

assigned to work after one year training. These HEWs devote 75% of their allocated working hours to visiting families in their homes and performing outreach activities in the community. The house-to-house activity starts by identifying households to serve as role models. The model households are considered early adopters of health practices as trained by the HEWs in line with heath extension packages. They help diffuse health messages, leading to the adoption of the desired practices and behaviors by the rest of the community (Bilal, Herbst, & Zhao, 2010). The rest (25%) of their time is spent at the health post to provide preventive services such as immunizations and injectable contraceptives. In addition, HEWs provide basic curative services for selected common communicable diseases such as malaria, diarrhea, intestinal parasites and childhood pneumonia (FMoH, 2005).

2.2.2. Urban health extension program

In order to expand urban health in seven regions of the country, 15 health packages along with implementation manual have been developed and distributed for implementation. Training and development of urban HEWs has already in progress in Tigray, Amhara, Oromia, Harari, Dire Dawa, and Addis Ababa. Accordingly, these regions have trained and deployed a total of 2,319 UHEWs (FMoH, 2010).

Based on lessons from the successful implementation of the agrarian health extension program, the health extension expanded to urban and pastoral areas. The HEP is intended to transfer ownership and responsibility of maintaining health to individual households so that communities are empowered to produce their own health. The focus of the HEP is disease prevention and health promotion with limited curative care. It is the health care service delivery mechanism of the people by the people, and for the people by involving the community in the whole process of healthcare delivery and by encouraging them to maintain their own health. Ethiopia has come a long way in improving the health status of its people as evidence by the achievement of most health related millennium development goals (MDGs). The progress has been rapid after the inception of the HEP (Ibid).

The services provided under HEP include 16 essential health packages under four major program areas:

- Hygiene and environmental sanitation: (1) proper and safe excreta disposal system, (2) proper and safe solid and liquid waste management, (3) water supply safety

measures, (4) food hygiene and safety measures, (5) healthy home environment, (6) arthropods and rodent control, and (7) personal hygiene.

- Disease prevention and control: (1) HIV/AIDS prevention and control, (2) TB prevention and control, (3) malaria prevention and control, and (4) first aid.
- Family health services: (1) maternal and child health, (2) family planning, (3) immunization, (4) adolescent reproductive health, and (5) nutrition.
- Health Education and Communication: Cross cutting.

The 16 health extension Service packages and description of key elements (FMoH, 2016)

1. Collect, maintain, and utilize community health; Plan and prepare necessary materials for data collection, Collect data that need to be entered into the health database system, Collect vital events and surveillance data, Prepare and submit reports and Contribute to working with community to identify health need
2. Perform community mobilization and provide health education ; Participate in the determination of community health information needs, Participate in the preparation of health information, Provide health promotion and education services, Train model families, Perform advocacy of identified health issues and Promote community mobilization on the identified health issues
3. Promote and implement hygiene and environmental health; Promote and provide environmental and personal hygiene education, Establish and demonstrate community-appropriate sanitation technologies and Provide environmental health service
4. Prevent and control common communicable diseases; Educate the community on early detection and prevention of communicable diseases, Perform disease surveillance and Follow up cases
5. Prevent and control common non communicable diseases; Educate the community on healthy lifestyle and early detection of disease, Screen and refer clients requiring further investigation and management and Follow up cases and promote community-based rehabilitation
6. Promote community nutrition; Collect appropriate information for preparing nutrition education, Provide basic nutrition information/ education to the clients and Monitor client response to the information/education

7. Promote and provide antenatal care; Provide antenatal examination and information for pregnant women and Conduct home visit and refer pregnant women with health problems
8. Promote institutional delivery and provide delivery service; Support women during childbirth, Provide normal delivery and Provide immediate neonatal care
9. Promote and provide postnatal care; Provide services for lactating mothers on infant care, nutrition, and exclusive breastfeeding and Organize and follow up maternal health programs
10. Promote child survival, growth and development, and apply Integrated Community Case Management (ICCM); Promote child survival, and growth and development activities, Access and manage common childhood illness and Refer child requiring further care
11. Promote and implement immunization; Plan immunization programs and Conduct immunization programs
12. Promote and provide family planning service; Educate the community on family planning options and Educate adolescents on family planning and STIs
13. Promote and provide adolescent and youth reproductive health (RH); Plan adolescent and youth RH services; promote adolescent and youth RH services, Provide RH service package and Register and document RH records
14. Provide first aid; Assess and identify client's condition, Provide first aid service and Refer client requiring further care
15. Manage community health service; Follow organizational guidelines, understand health policy and service delivery system, Work ethically, Provide team leadership and assign responsibilities and Establish quality standards, assess and record quality of service delivery
16. Respond to emergency; Prepare for emergency situations; evaluate the emergency, act in an emergency and Apply essential first aid techniques

2.3. Actors and their role in implementation of HEP

Critical thought informed the design of HEP in terms of support required from various stakeholders. The communities (and model families) are expected to cooperate and disseminate health knowledge and practices. The local village administration supports HEP by providing political leadership, mobilizing the communities, and monitoring the performance of HEWs based on an agreed plan. The nearest health center provides technical

support to the HEWs, and serves as a logistic hub for HEWs and a referral center for HEW referred clients and patients. One HEP supervisor in each health center supervises the HEWs in the health center's catchment area (FMoH, 2010).

The district government collaborates with villagers to construct a health post for every 5,000 people. The health post is the locus of the HEWs' operation. The Federal Ministry of Health (FMoH) provides the curriculum and guidance on the recruitment of HEWs and mobilizes resources from development partners for procurement and distribution of medical equipment and supplies for the health posts. The regional health bureaus and zonal health departments provide strategic leadership as well as technical support to the districts in implementing HEP. They also cover the stipend and salaries of HEWs during training and deployment, respectively (ibid).

There is also a large group of donors, such as the U.S. agency for International development that provides both technical and logistical support (refresher training, distribution of supplies, etc.) to HEWs through the various implementing partners.

2.4. Policy implementation approaches

2.4.1. Top-down approach

Top-down theories started from the assumption that policy implementation starts with a decision made by central government. Top downers essentially followed a prescriptive approach that interpreted policy as input and implementation as output factors. Due to their emphasis on decisions of central policy makers, deLeon (2001) describes top-down approaches as a governing elite phenomenon. Pressman and Wildavsky (1973) started from the assumption that policy objectives are set out by central policy makers. In this view, implementation research was left with the task of analyzing the difficulties in achieving these objectives. Hence, they saw implementation as an interaction between the setting of goals and actions geared to achieve them (Pressman & Wildavsky, 1973). They underlined the linear relationship between agreed policy goals and their implementation. Implementation therefore implied the establishment of adequate bureaucratic procedures to ensure that policies are executed as accurately as possible. To this end, implementing agencies should have sufficient resources at their disposal, and there needs to be a system of clear responsibilities and hierarchical control to supervise the actions of implementers. (Sabatier & Mazmanian, 1979)

are among the core authors of the top-down approach. They started their analysis with a policy decision that was made by governmental representatives. Therefore, they assumed a clear separation of policy formation from policy implementation.

Their model lists six criteria for effective implementation: (1) policy objectives are clear and consistent, (2) the program is based on a valid causal theory, (3) the implementation process is structured adequately, (4) implementing officials are committed to the program‘s goals, (5) interest groups and (executive and legislative) sovereigns are supportive, and (6) there are no detrimental changes in the socioeconomic framework conditions. They acknowledged that perfect hierarchical control over the implementation process was hard to achieve in practice and that unfavorable conditions could cause implementation failure, they argued that policy makers could ensure effective implementation through adequate program design and a clever structuration of the implementation process.

2.4.2. Bottom-up approach

Bottom-up theories emerged as a critical response to the top down school. Several studies showed that political outcomes did not always sufficiently relate to original policy objectives and that the assumed causal link was thus questionable. Theorists suggested studying what was actually happening on the recipient level and analyzing the real causes that influence action on the ground. Studies belonging to this strand of research typically started from the bottom by identifying the networks of actors involved in actual policy delivery. They rejected the idea that policies are defined at the central level and that implementers need to stick to these objectives as neatly as possible. Instead, the availability of discretion at the stage of policy delivery appeared as a beneficial factor as local bureaucrats were seen to be much nearer to the real problems than central policy makers. Studies showed that top-down approaches failed to take into account that a hierarchical chain of command and well-defined policy objectives are not enough to guarantee successful implementation.

Therefore, they suggested that implementation analysis should start with the identification of networks of actors from all relevant agencies collaborating in implementation and then examine the way they try to solve their problems. According to (Sabatier & Mazmanian, 1979), this approach offers a useful tool to describe the implementation structures (Hjern & Porter, 1981) within which policy execution takes place.

2.4.3. Hybrid approach

The new models presented by Elmore (1985) were combined elements of both sides in order to avoid the conceptual weaknesses of top-down and bottom-up approaches. Taking the top downers‘ concern with effective policy execution as their starting point, they blended several elements of the bottom-up perspective and of other theories into their models. They tried to bridge the gap between top-down and bottom-up approaches. Like top-downers, they continued to accept the perspective of a centrally defined policy decision to be implemented by lower-level actors. Their goal of developing a general theory of implementation on the basis of rigorous methods also owes much to the top-down perspective. However, their conception of the implementation process embraced the fact that implementers are political actors in their own right and that the outcome of this endeavor entailed complicated negotiation processes between implementers and central authorities (Scharpf, 1978) was one of the earliest writers who tried to reconcile the idea of political steering by central governments with the argument of bottom-up scholars that the transformation of policy goals into action depends upon the interaction of a multitude of actors with separate interests and strategies. Introducing the concept of policy networks to implementation research, he suggested giving more weight to processes of coordination and collaboration among separate but mutually dependent actors.

The concept of policy networks later became a major approach to the study of policy change as a whole. (Ripley & Franklin, 1982) distinguish between distributive, regulatory, and redistributive policies, arguing that each of these policy types involves different groups of stakeholders as well as different types and levels of conflict in implementation. Windhoff-Héritier makes a similar argument. She distinguishes between distributive and redistributive policies. This distinction includes regulatory policy, which can fall into either of the two categories depending on whether or not a regulatory program involves clearly identifiable winners and losers. Her book reveals that distributive policies may be implemented in any implementation structure, while redistributive policies need a hierarchical implementation structure to be executed effectively (Windhoff-Héritier, 1980).

In sum, the approaches summarized under the heading of ―hybrid theories brought two important innovations to implementation theory. First, they tried to overcome the conceptual weaknesses of the polarized debate between bottom-up and top-down scholars. Leaving aside the normative aspects of the controversy, they focused instead on empirical arguments about

the proper conceptualization of the implementation processes and pragmatically blended the extreme arguments of both sides into models that embraced both central steering and local autonomy. Second, some of the hybrid theorists pointed to important factors that had hitherto received little attention.

2.4.4. Network approach

Klijn and Koppenjan observe "the use of the network concept in policy science dates back to the early 1970s." They contend that in policy implementation studies, especially in what has become known as the " bottom-up" approach to policy making and implementation (as opposed to the traditional bureaucratic "top-down" approach to policy making and implementation), as well as in the literature on inter-organizational relations literature, the concept has been used to map inter-organizational relations and to assess the influence of these patterns on policy processes (Klijn & Koppenjan, 2000).

The term "policy network" has conjured up several understandings, depending on the contexts from which it has emanated. As conceived by (Raab & Kenis, Heading Toward a Society of Networks: Empirical Developments and Theoretical Challenges, 2009), a policy network is an amalgamated group of organizations glued together by their shared resource dependencies, and is intentionally formed groups of more than two interdependent organizations whose aim is to attain a shared interest and as a unit yield results. Not see policy networks should, however, as completely separate from the state but rather as, due to their formal and informal formation, governmental and non-governmental connections and other stakeholders pivoted around a common belief to which no single agency is superior to the other. The mutuality of relationships animated by trust among members whether state or non-state spells out their dependency on each other for the sake of effecting public policies and their potential implementation (Bodin, Crona, & Ernstson, 2009).

Policy networks in general may be understood as "structural elements of collaborative networks, documenting such components as reciprocity, equality, and representation" deLeon (2001) suggesting that no definite leader is in control of its functioning. Both as a tool for and a structure of public policy implementation, policy networks assume such attributes as exchanges of resources, interdependence among stakeholders that can be formal or informal. Its composition arises from a realization that single bureaucratic governments are ineffective hence the need to mutually benefit, share information, gain support and legitimacy through correlation with other agencies (deLeon, 2001).

From these definitions, the concept of policy networks revolves around one central element of interdependence. These definitions portray policy networks as networks of public, semipublic and private actors participating in policy programs and it indicates the patterns of relations that exist between interdependent actors involved in processes of public policy making. Therefore, due to the confluence of many participants in policy networks such as the public, private and indeed citizens who affect policy implementation, it is proper to ascertain that by its structure and nature, governments (although this is dependent on different contexts) cannot exercise enough power to handle complex issues on its own hence, the emergence of policy network as a standpoint to governance or managing public policy.

In the modern context, Dahan *et al* (2006:23) argue that a policy network constitutes "a self-organizing group that coordinates a growing number of public (decision-makers) and private (interest groups) actors for the purpose of formulating and implementing public policies." Policy network is a concept that can be understood basically in two perspectives: the network as a type of organization and the network as a perspective on organizing, but it can also be understood as a sub-category of inter-organizational networks, most often defined in terms of their structural characteristics and functions. Van der Krogt (2003) thinks of the network organization as a mirror that is client-friendly where the process of decision-making is devolved horizontally for a smooth flow of information among its members as opposed to the traditional hierarchical, bureaucratic and rigid form of governance. Van der Krogt (2003) is of the opinion that because this alternative form of networked governance is flexible, open and integrated - policy networks serve as a model for future organizations that will confront highly changeable environments.

The policy network as a perspective on organizing recognizes that "the concept of the network can be employed as a frame of reference that can be used to analyze any type of organization. In this case, the concept refers to such characteristics as the interaction pattern, the exchange of information, and inter-organizational relationships. This particular understanding of the network concept assumes that policy networks are made up of strategically operating actors; that every organization is a social network; that the environment of the organization is a network; and that network structures come about as a result of the actors" actions even if the structures influence those actors. The uniqueness of policy networks is that, unlike other forms of governance, they function to formulate and implement public policies in a collaborative cross-sectoral manner.

According to Klijn & Koppenjan (2000) policy is a result of complex interactive processes between a large numbers of actors, which takes place within networks of actors. These actors are mutually interdependent so policy can only be realized on the basis of cooperation. In this way, policy network theory is seen as a framework for the explanation, evaluation and improvement of public policy and public management. In recent years, scholars have considered ways to analyze inter-organizational policy networks in order to explain how relationships surface, are sustained, and create value for the participants and, in return for society.

Bardach has argued that policy networks are useful as a way to describe a certain kind of communications capacity (a set of relations among actors' agencies or individuals) that facilitates efficient communication among them for some particular purpose-delivering services to citizens, organizing for political advocacy, socializing with individuals of similar status and taste, seeking out partners with complementary assets for completing a production value chain from product discovery to marketplace (Bardach, 1998). A policy network has complexity of relationships among actors as one of its defining features. Therefore, through the communications capacity, actors can easily identify other participants in the policy network whose creative capacities would likely be valuable to them; and actors who want their aptitude to be revealed, make use of the networks to have them unearthed.

Policy networks have many facets and can be looked at from the context in which it intends to execute its purpose. According to Law & Hassard (1999) entities take their form and acquire their attributes because of their relations with other entities (semiotics of materiality). This means that they are performed in, by, and through those relations (performativity). Conceiving of network theory in the former provides a dualistic view of networks in which entities have no inherent qualities but exist between before and after; knowledge and power; context and content; and materiality and sociality. The latter concerns itself with an effort to understand how it is that durability is achieved in these policy networks, or how it is that things get performed into relations that are relatively stable and stay in place. (Law & Hassard, 1999) conclude that the two go together.

In the views of Cai (2005) and Yu and Liang (2006) cited in (Zheng, 2010) policy networks provide "a way for the government to set up a platform for selecting and optimizing the use of policy instruments by generating various alternatives developed and put forward by the various policy actors…; strongly connected to deliberative democracy, where free and equal

citizens can communicate with each other as well as select the best policy solutions together and improve the capacity to govern through policy learning respectively". In this sense, policy network theory is envisioned to promote performance, interactive co-operation, dialogue, and policy learning among different policy actors, including government. This usually takes place during the policy process whereby public and private organizations form formal and informal relations because of resource interdependency and the wish to solve policy problems and interact in multi-centric rather than centralized ways.

From a resource dependence perspective, Börzel (1998) conceives of policy networks as "a set of relatively stable relationships which are of a non-hierarchical and interdependent nature linking a variety of actors, (who share common interests with regard to a policy and who exchange resources) to pursue these shared interests acknowledging that cooperation is the best way to achieve common goals." As such, Börzel identifies facets of policy networks where some relations revolve around interest groups and the state in which resources are exchanged and an analysis that interprets a specific form of public-private partnerships in public policy governance that is less hierarchical and based on coordination. Compston (2009) concludes that "public policy is largely determined by resource exchange involving actors and their resources, preferences, strategies and perceptions of problems and solutions, plus policy network-specific rules and norms."

Due to the structure and nature of policy networks that is uncertain, ambiguous, complex, and wicked, its formation presents a dilemma. To clarify this dilemma, some scholars argued for both formal and informal perspectives of policy networks. Raab & Kenis (2009) noted that "most often, these networks as aggregates of dyadic relations were not consciously designed but were emergent social systems consisting of individual or corporate actors and their social bilateral interactions." The corresponding effects of formal and informal relationships have the potential to boost policy effectiveness more cheaply than the authority based structural changes arrived at through formal organization. This means that networks come in various forms and shapes, are governed quite differently, and despite being different from hierarchies nonetheless need a control function to be effective.

However, not all scholars in this field share this line of thought. Dowding (1995) cited in deLeon (2001) for instance, argues that the only value of policy network emanates from a formal structure in which properties of the network are explained, but nothing more. For these scholars, the time for policy network to have a feasible analysis capacity is not ripe

because it is inadequate in its theoretical scaffold; such things as a set of guiding principles by which to test the theory of collaborative policy networks over time. When multisector parties are blended together, they may fail because of the wide array of values, norms, power, trust, and experience might clash and produce undesirable conflict and tension. Undeniably, collaborative policy networks do not result explicitly in improved policy outcomes, especially when one considers the intricacies in stirring collaboration over time and assessing its outcomes. Therefore, policy networks may deter, rather than enhance effectiveness and efficiency.

Kickert and his friends emphasize the relationship between policy networks, public policy making and governance. For them, the concept policy network "connects public policies with their strategic and institutionalized context: the network of public, semipublic, and private actors participating in certain policy fields" (Kickert, Klijn, & Koppenjan, 1997). Kickert *et al* (1997) regard the policy network model as an alternative approach to governance. They define policy networks as "more or less stable patterns of social relations between interdependent actors, which take shape around policy problems and/or policy programs."

2.5. Policy network analysis to study policy implementation.

The work of Social network analysis (SNA) is a tool that examines relationships - between individuals, organizations, and individuals within and between organizations (Wasserman & Faust, 1994). Because policy implementation inherently involves individuals and organization in social networks, SNA is an important but underutilized method to examine the role of people under the framework of complexity theory (Börzel, 1998). Explicitly, SNA provides a way "to express relationally defined theoretical concepts by providing formal definitions, measures and descriptions, to evaluate models and theories in which key concepts and propositions are expressed as relational processes or structural outcomes, or to provide statistical analysis of multidimensional systems" (Wasserman & Faust, 1994). Ultimately, social network analysis becomes a useful way of making relationships visible, once visible or identified, network analysis can be used to develop and support network relationships as well as intentionally create them, all for the purposes of generating shared learning or shared meaning (Introcaso, 2006).

SNA provides a language and methodology to examine relationships in order to facilitate the achievement of goals, such as implementing policy, or to identify roadblocks to successful implementation. Relationships affecting the interactions within a system are constantly

coevolving with and within the fitness land scape, and there for must be re-examined over time in order for SNA to provide a useful description of the CAS. Because social network data are relational, the survey instruments used to collect the data are formatted quite differently from traditional surveys. Respondents are asked to indicate either from a pre-populated list or a list generated on their own, who they would select for with respect to various relationships. What results is a socio matrix that can be analyzed for network properties such as density, centrality, and reachability, or can be converted into a sociogram with specialized SNA Software (Borgatti & Everett, 2013).

Using this survey format, one can collect data on connectivity and interdependence within a network by asking respondents to identify the following: the individuals with whom they have communicated; the frequency of that communication; and the individuals upon whom the outcome of their work is dependent. If one considers the key elements of policy implementation, it becomes imperative to know how the social networks within an organization or inter organizational collaboration are affecting the sense making, knowledge creation and decision-making processes. In order to determine how information is shared to these ends, network members can be asked to identify: who they talk to in order to understand policy changes; who is most influential when it comes to understanding their within the organization or network; who is most influential when it comes to understanding the goal(s) of their organization or network; who they have shared specific information with; who they have received specific information from; who they have gone to when they needed help making a decision; and who has come to them for help in making a decision. These types of questions can be used to understand how knowledge develops and who the knowledge keepers are within an organization or network. Additionally, information feedback can be discerned by determining the extent to which relationships are reciprocal or constitute information.

While SNA can determine how agents are interacting within a system, one also needs to understand other elements of the fitness landscape which are influencing patterns of behavior. Within an organization, training, written policies and procedures, and performance evaluations affect the fitness landscape by creating hills, valleys and paths within the landscape. When a policy is being implemented by several organizations the local political, economic and social environments comprise the fitness landscape (Robins, 2015).

Although SNA can't help us predict which rules or behaviors will emerge, it can help us understand the social networks that influence the development of the rules and behaviors. For instance, by examining the social networks for each relationship, researchers are prompted to ask why certain individuals, groups of individuals, or organizations choose certain individuals, groups of individuals, or organizations but not others. Traditional attribute data can be added to the analysis to determine whether or not the existence of a relationship is conditional on role within an organization, gender, or level of education, for example. Networks can also be examined for structural holes, boundary spanners, or bottlenecks(ibid).

Furthermore, if SNA is utilized to collect data over time, researchers can determine the impact that changes to the fitness landscape - be they external policy changes, internal procedural changes, the introduction of new technology, or structural changes- have had on how organizational members interact, share information and create new knowledge (Raab & Kenis, 2009).

Because of sensitivity to initial conditions and positive feedback loops, small changes, carefully considered, can have large effects within organizations. McMillan (2004) claims that this "butterfly effect" can explain why relatively small changes, such as the addition of an energetic new leader, can have such a large impact on organizations. When they understand the social networks at play within their organization or inter organizational network. The routines that emerge from and consequently guide patterns of behavior, and important elements of the fitness landscape, leaders of organizations and networks can influence the sense making, knowledge creation and decision making processes, confront routines that may be obstacles to successful implementation, and alter the fitness landscape so that network members are drawn toward peaks that maximize organizational/network goals as well as personal goals (McMillan, 2004).

2.6. Theories and concepts of network analysis

2.6.1. Network theory

Social network theory is the study of how the social structure of relationships around the person, group, or organization affects beliefs or behavior. Network analysis is a set of methods for detecting and measuring the magnitude of the pressures. The axiom of every network approach is that reality should be primarily conceived and investigated from the view of the properties of relations between and within units instead of the properties of these

units themselves (Borgatti & Everett, 2013). It is a relational approach. In social and communication science, these units are social units: individual, groups/organizations and societies. The theory views social relationships in terms of nodes and ties. Nodes are the individual actors within the networks, and ties are the relationships between the actors. There can be many kinds of ties between the nodes. In its most simple format, a social network is a map of all of the relevant ties between the nodes being studied. Social network theory produces an alternate view, where the attribute of individual actor are less important than their relationships and ties with others actors within the network (Carrington, Scott, & Wasserman, 2005).

2.6.2. Social capital theory

According to Coleman (1990), a network characterized by closure has a high level of interconnectedness. The actors are linked directly by many and strong relations or indirectly through a single contact (Burt R. , 2000). The basic proposition is that closure facilitates the interactions because of an enhanced communication among the participators. Given the many information channels, rich and accurate information is available throughout the network. Within a well-connected network, information flows freely, promoting the creation of common norms and common values, so vital for a culture of joint action to evolve (Coleman, 1990). Trust and reciprocity are keywords, and collaboration is further facilitated since the connectedness allows for the use of sanctions to prevent and restrain opportunistic behavior (Burt 2000; Coleman 1990). An individual embedded in this type of structure is regarded as rich in social capital. Networks with high levels of network closure have more social capital and are, accordingly, more successful in achieving collective action than others.

As stated in the work of Bouzdine & Bourakova-Lorgnier (2004) the structural holes argument, based on the idea of the need in brokerage, or bridging certain misconnected parts of a network, accents the role of entrepreneurs - those actors, who connect and provide flexible information flow between the network parts (Burt R. , 2000). Structural holes are defined as the absence of connections or as the presence of weaker connections within networks. Metaphorically, they are holes in the social net. “Holes are buffers, like an insulator in an electric circuit. People on either side of a structural hole circulate in different flows of information”. The actors in position to bridge these holes have a strategic advantage as structural holes offer “an opportunity to broker the flow of information between people,

and control the projects that bring together people from opposite sides of the hole" (Burt R. , 2000).

2.6.3. Centrality and influence in network

Perhaps most importantly, the network approach emphasizes that power is inherently relational. An individual does not have power in the abstract, they have power because they can dominate others - ego's power is alter's dependence, and vice versa. Because power is a consequence of patterns of relations, the amount of power in social structures can vary (Hanneman & Riddle, 2005).

Network analysts are more likely to describe their approaches as descriptions of centrality than of power. Each of the three approaches (degree, closeness, betweenness) describe the locations of individuals in terms of how close they are to the "center" of the action in a network – though the definitions of what it means to be at the center differ. It is more correct to describe network approaches this way (measures of centrality) than as measures of power (Hanneman & Riddle, 2005).

As mentioned in Borgatti (2005) Centrality is one of the most studied concepts in social network analysis. Numerous measures have been developed, including degree centrality, closeness, betweenness, eigenvector centrality, information centrality, flow betweenness.

2.6.3.1 Different measure of centralities in networks

The concept of centrality captures a kind of prominence of a node in a network. The economic and sociological literature offers several such concepts. Measures of centrality can be categorized into the following main groups:

Degree centrality; the degree centrality indicates how well a node is connected in terms of direct connections, i.e., it keeps track of the degree of the node. This measure can be seen as an index of the node's communication activity.

Closeness centrality; as defined by Freeman (1979), a node's closeness centrality is the sum of graph-theoretic distances from all other nodes, where the distance from a node to another is defined as the length (in links) of the shortest path from one to the other.

Betweenness centrality; the betweenness centrality is based on how important a node is in terms of connecting other nodes. It is useful as an index of the potential of a node for control of communication.

Prestige- and eigenvector-related centrality; there exist other measures of centrality that take into account a richer range of direct and indirect influences in networks. The measures developed are based on the idea that a node's importance is determined by the importance of its neighbors.

2.6.4. Structural position and roles of the actors in the network

As stated in the article of Huang, Zhang, Yang, & Zheng (2014) social network analysis is concerned not only with evaluating the importance of a node, but also with identifying the function or position of an important node in a network. As (Scott, 1991) stated, it has been one of the key issues of social network analysis to identify the role of a node.

According to Borgatti & Everett (2013) defined the position as a "well-defined place" in a social structure. Position is usually related to some kind of similarity: attitudes, mental health, production of scientific knowledge etc. Two actors occupy the same position if they are connected to the rest of the network in the same way.

Although various kinds of roles could be defined from different perspectives, two kinds are widely accepted. The first kind of role bonds a group of nodes together, and has great influence on other nodes. A node that plays the bonding role usually takes up the central position of the group, thus it is named as a central/influential in this paper. In previous studies, this kind of role has also been termed as a leader, a star, a hub etc. the second kind of role provides connections between other nodes. A node that plays this role looks like a bridge and shows its importance in exchanging information and resources between others (Burt R. , 1992).

However, there are still many arguments about the precise definitions of the core and the bridge. Therefore, instead of pursuing the precise definition of a role, researchers have proposed many different indicators to assess different topological features of a node, such as

degree, betweenness centrality, eigenvector centrality etc. In addition, researchers have usually agreed that the degree of a core and the betweenness centrality of a bridge should be great.

Positions and roles form together a social system that generates social relations. The roles result in specific behaviors and interactions, which can be observed (e.g., giving order, sending emails, etc.). According to these definitions, actors with similar roles will share common features and common patterns of relations, even if they do not share any direct relationship (Huang, Zhang, Yang, & Zheng, 2014).

2.7. Conceptual framework

The study sought to analyze the structural properties of whole networks of coordination, partnership and resource flow network in urban UHEP execution. To do so, network density, degree centralization and betweenness centralization score were calculated.

Network density, analyzes the connectedness of the network, which is also known as network closure (Sandstro & Rova, 2010). The higher the network density, the more potential there is for collective action (Olsson, Folke, & Berkes, 2004). Bodin, Crona, & Ernstson (2009) argue that less dense networks have clearly distinguishable subgroups, which could have negative effects on the capacity for collaborative processes among subgroups. However, a very high network density may decrease the groups' effectiveness in collective action (Olsson, Folke, & Berkes, 2004) because this can lead to homogenization of knowledge, which decreases the capacity for solving problems (Bodin, Crona, & Ernstson, 2009).

The degree centralization expresses how tightly the graph is organized around its most central point (Scott, 1991). A low degree centralization value indicates that many actors have spatially centralized positions in the network, which can refer to clearly distinguishable subgroups and a low level of network cohesion (Bodin, Crona, & Ernstson, 2009). A high degree of centralization indicates that one or a few actors (when the highest degree centrality is the same for more organizations) are central actors in a network.

Betweenness centralization expresses the degree to which a few organizations have control over the relationships of other organizations in the network. A higher betweenness

centralization score indicates greater centralization and a smaller number of gatekeepers that dominate the network.

The researcher utilized Valente et al. (2015) "Goldilocks Principle" as a guide for interpreting network density, degree centralization and betweenness centralization scores. Specifically, scores below 0.30 were deemed as low, levels between 0.30 and 0.50 as moderate, and levels above 0.50 as too high.

To identify the most central or influential and the isolated actor in coordination, partnership and resource flow network of UHEP implementation, the study calculate degree centrality and betweenness centrality scores. What constitutes a 'high' or 'low' score is relative to networks and measures. Betweennes centrality Scores for this measure are standardized as a percentage of maximum possible betweenness between 0 and 100 percent and degree centralization Scores for this measure are standardized as a percentage of maximum possible out-going and in-coming ties between 0 and 100 percent.

Degree centrality is the number of ties an organization has (In-Degree, Out-Degree or reciprocal ties) has been shown to have a positive effect on that organization's influence (Bodin, Crona, & Ernstson, 2009), but does not give information on the quality or frequency of the connection (Hanneman & Riddle, 2005). A high number of Out-degree ties can indicate a high degree of dependence on other organization, a high number of In-degree ties can indicate a high degree of dependence by other organizations on the organization, and a high degree of reciprocal ties can indicate a high degree of interdependence.

Betweenness centrality is Probability of an actor being on the shortest path between any two organizations in the network. The actor could act as a bridge between other actors who are not connected otherwise, which allows the actor to influence the information flows and act as a gatekeeper or mediator (Bodin, Crona, & Ernstson, 2009). These bridging organizations can play an important role in facilitating cross-scale interactions (Rathwell & Peterson, 2012).

Integration level was assessed with a scale adapted from established network analytic methods (Harris, Luke, Burke, & Mueller, 2008). Participants were asked to select the response that best describes the current relationship with each of the people or organizations on the roster. Response options ranged from not linked (do not work together), communication (share information only), cooperation (work together informally to achieve common goals), collaboration (work together as a formal team with specific responsibilities e.g. an MOU or other formal agreement), and fully linked (work together as a formal team;

mutually plan and share staff or resources to accomplish goals). A network tie was defined as cooperation or higher. Any partner or organization that was identified as ‘not linked’ was removed from further network questions.

Chapter three

3. Methodology

3.1. Introduction

This chapter raises the entire methodological issues that the whole study will be guided and comprises about eight sub topics concerned about the research design, research approach, the sampling method, the data collection method and tools, the data collection procedures, the data analysis method.

3.2. Research design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. The research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data.

Research design gives an overall view of the method chosen and the reason for that choice. This study used *descriptive research design*, which used to identify and obtain information related to features of research problem and to interpret *what is*. It aims to describe the state of affairs as it is. The basis for selecting this type of research design is that the study has no control on the variables; rather it describes the patterns of relations and structural properties of network actors in UHEP implementation.

Using a network perspective, the broad majority of social network studies use either "whole-network" or "egocentric"[3] designs (Carrington, Scott, & Wasserman, 2005). Whole-network studies also called a *full network* study, requires a single set of actors within a well-defined network boundary. The data includes the ties that are present among all actors, sometimes referred to as a *network census.* It may involve several different types of relational ties. With good measurement and a sensible network boundary, a whole network design is obviously superior to egonet designs in handling network connectivity. Enable to draw conclusions about the entire social system (within the boundary) (Robins, 2015).

[3] An *egocentric* network (*egonet),* or *personal network,* only includes the ties that a focal actor (called *ego)* has to network partners (called *alters)* as well as the ties among alters.

3.3. Research approach

The study heavily relied on quantitative approach to provide a comprehensive analysis of research problems. Quantitatively driven policy network analysis generates numerical data on social relations by using quantitative methods like surveys, and map and measure the structural properties of policy networks using sophisticated quantitative techniques by simplifying social relations in to numerical data, where tis are either absent or present. Recent mathematical development and user-friendly computers programmes for visualizing and measuring networks have led to significant advancement in quantitative policy network analysis (Carrington, Scott, & Wasserman, 2005).

3.4. Study area of the research

Addis Ketema is one of the 10 sub cities in Addis Ababa city administration. It is situated in the center of Addis Ababa, bounded from southeast by Lideta, from West by Kolfe Keranyo, from Northeast by Arada and Gulale sub cities. At present, the sub city divided into 10 woredas & 28 sub woredas, 84 Sefers and 302 blocks.

Fig 3.1. Map of Addis Ababa city administration
(Source: Addis Ababa City Administration Integrated Land Information Center)

Regarding the distribution of education in Addis Ketema sub-city, there are 44 kindergartens out of which 16 belonged to the government and 28 to private and other institutions (Source: Addis Ababa City Education Bureau, 2017). Besides, there are 40 Primary Schools and only 7 secondary schools in the sub-city. However, the sub-city has five preparatory schools, which accounts to about 3.7% of the total education distribution in Addis Ababa (Ibid.)

Addis Ketema sub-city social services that promote the well-being of community such as parking, street cleanings, sanitation, housing, water supply, power supply, health care planning and zoning fire and ambulance services and other related public works are on being accomplished. In addition, in Addis Ketema Sub-city there are 10 Health Centers, 35 Medium Clinics, 16 higher Clinics,2 Hospitals and 33 pharmacies (Source: Addis Ketema Sub-city Health Office).

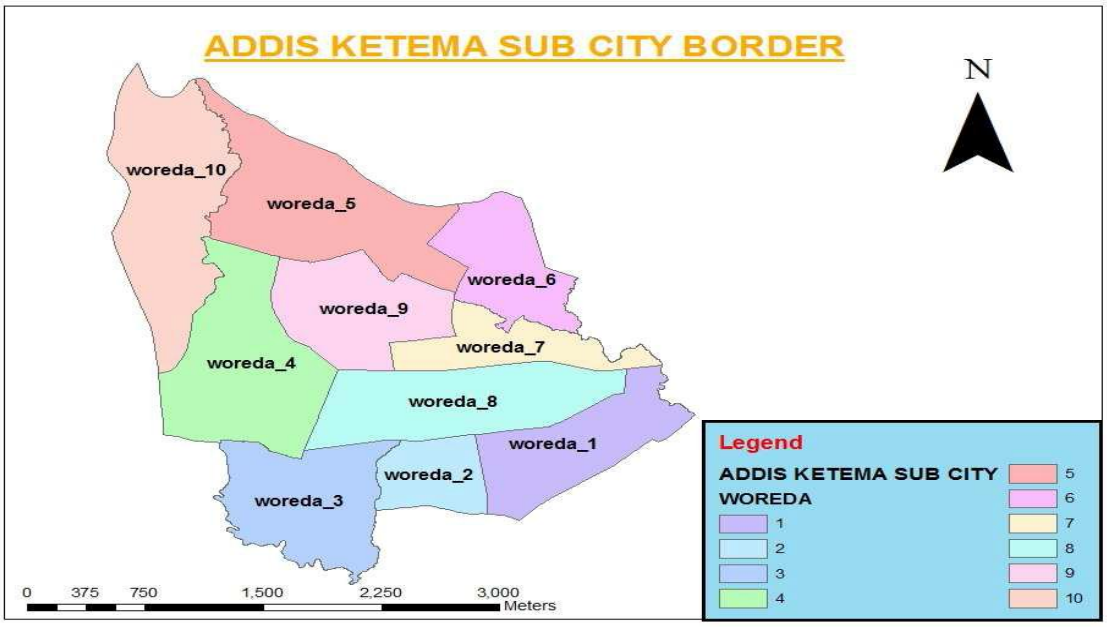

Fig 3.2. Map of Addis Ketema Sub-city
(Source: Addis Ababa City Administration Integrated Land Information Center)

3.5. Sampling method

Researchers usually draw conclusions about large groups by taking a sample. Ideally, the sample should be representative and allow the researcher to make accurate estimates of the thoughts and behavior of the larger population (Leedy and Ormrod, 2005).

The study utilized purposive sampling (also known as judgement, selective or subjective sampling) is a sampling technique in which researcher relies on his/her own judgement when choosing members in the study. Purposive sampling is non-probability sampling method and it occurs when elements selected for the sample are chosen by the judgment of the researcher. Researcher often believe that they can obtain a representative sample by using a sound judgement, which will result in saving time and money(Dawson, 2002).

3.6. Data collection method and tools

To solve the research problem under the study, both primary and secondary data was collected using several methods. The methods that were used are described below. The *primary data* are those, which are collected afresh and for the first time and thus happen to be original in character. The *secondary data*, on the other hand, are those which have already been collected by someone else and which have already been passed through the statistical process (Kotheri, 2004).

3.6.1. Primary data

The researcher used the following methods of collecting primary data:

3.6.1.1. Interview

In this study, the researcher while holding discussion with first step snowball sampling applied Semi-structured interviewing method. In this type of interview, the researcher wants to know specific information, which can be compared and contrasted with information gained in other interviews. To do this, the same questions need to be asked in each inter-view. However, the researcher also wants the interview to remain flexible so that other important information can still arise (Catherine, 2002). In this method the researcher is allowed much greater freedom to ask, in case of need supplementary questions or at times he may omit certain questions if the situation so required (Neuman, 2004).

3.6.1.2. Questionnaire

This research relies heavily on structured questionnaires and takes the form of closed ended questionnaires. Much network data is gleaned from human informants via survey instruments. As far as the general form of a questionnaire is concerned, the most common instrument used in the field is of two basic types: prompted recall or 'Roster' instrument and free list or 'Name generator'.

Name generator; consists of a questions, which asks the subjects to produce from memory a list of nodes generally those with whom the subject has some relationship. Roster; this instrument typically consists of a stem questions following a list of names. Subjects are instructed to mark the names of those with whom they have the indicated relation leaving the other blank (Brewer, 2000).

3.6.2. Secondary data

Secondary data means data that are already available i.e. they refer to the data which have already been collected and analyzed by someone else. Secondary data may be either published data or unpublished data (Kotheri, 2004).

This study also rely on published secondary data and the source was various publications of the central, state are local governments; reports prepared by research scholars, universities, economists, etc. in different fields; public records and statistics, various publications of foreign governments or of international bodies and their subsidiary organizations; public policy and other social science journals and articles. The data from all available sources utilized during the research process and are integrated and collected, to conclude the data collection stage.

3.7. Data collection procedure

First the director of AACA health bureau and officer of Sub City Health Office interviewed to identify actors with whom they worked in urban health extension program implementation, and also give name generator to produce list of actors those with whom they has relationship.

For each actors those are found from health bureau and sub city health office a key informant was identified as the representative of most familiar with the UHEP work in their organization and was given roster with name generator instrument to get the complementary advantages from both instrument. In this case, the informant asked to mark the names of

those with whom they have the indicated relation and leaving the other blanks. For those actors who are not listed their name in the name generator but have the indicated relation with the informants or informants' organization, the informants asked to add in space provided in the instrument.

3.8. Data analysis method

The study applied social network analysis for analyzing relation of actors in urban health extension program implementation. Social network analysis (SNA) is a set of theories, tools, and processes for understanding the relationships and structures of a network.

Social network analysis (SNA) is a tool that examines relationships - between individuals, organizations, and individuals within and between organizations (Agranoff, 2003). Because policy implementation inherently involves individuals and organization in social networks. Policy network analysis practitioners collect network data, analyze the data (e.g., with special purpose SNA software), and often produce maps or pictures that display the patterns of connections between the nodes of the network. The maps in this study created using Netdraw computer programs by Bra (Borgatti S. , 2002) and (Brandes & Wagner, 2004).

Descriptive statistics utilized to show whole networks' structural properties and pattern of relations among urban health extension program implementing actors with measuring network density, degree centralization and betweenness centralization measurement. In addition, descriptive statistics were utilized to identify the most central and isolated actor in the program implementation through calculating degree centrality and betweenness centrality. Those descriptive statistics were analyzed using Ucinet software version 6.5 specialized software to measure relations and Netdraw computer program to visualize the relations. The output of Ucinet data were presented in table form and the output of Netdarw data were also presented in network graph.

3.9. Ethical consideration

The researcher considered the following ethical values and approaches while collecting both primary and secondary data for conducting this thesis as presented below:

Informed consent: Cover letters explain the purpose of the questionnaire and the right to accept or refuse to participate in any time of the research activities told and given choices to the respondents of this study while collecting data. The researcher was also explaining the

purpose of the study and clearly stating in the introduction of each questionnaires. In addition, the researcher told that the respondents are not written their name or any form of their identity about it.

Confidentiality: The researcher was assured that the respondents were not be confused and that their response will remain confidential and used for only academic purpose.

Chapter four

4. Data presentation and analysis

4.1. Introduction

This chapter segmented based on the research questions and comprises up to four sub chapters in which the data presentation, analysis and the interpretation will present. In the first subchapter, the respondents' organizations will be presented. In the second sub chapter the studied area will present, then the network relation would be presented in the third subchapter about the resource flow, coordination and partnership networks. Finally, brief discussion had be conducted based on the finding and with other related literature.

4.2. Sample organizations

The findings are based on the response of 64 organizations out of possible 73 organizations, which were identified from the purposive sampling method. In theory, network analysis needs near 100% response for the most accurate results (Brandes & Wagner, 2004). However, in application it is rare to reach such a high response rate from a survey-based methodology. Therefore, the response rate will be 87.67%. The purpose of the purposive sampling was to generate a complete set of organizational relationships (network) in Addis Ketema Sub City. A complete set of organization relationships is a requirement for the socio-metric approach to the data analysis (square matrices) used in this study. The step-1 interviews involved the Addis Ababa Health Bureau (AAHB) and Addis Ketema sub city Health Office (AKSHO). The list of organizations generated from step-1 interviews was used to identify the respondent organizations for step-2 data collections. Senior staff member in respondent organizations were interviewed and fill the roster survey instrument after securing their informed consent and permission from the organization.

Table 4.1 Sample organizations

Organizations	Frequency	Percentage (%)
Addis Ababa Health Bureau	1	1.56
Sub City Health Office	1	1.56
Food, Medicine Health Administration	10	15.62
'Denb Maskeber'	8	12.5
Women and Children Office	10	15.62
Water and Sanitation Bureau	1	1.56
Beautifications Office	8	12.5
Youth and Sports office	10	15.62
Women's Development Groups	7	10.93
Employees and Social Affairs Office	8	12.5
Total	64	100

Source; Questionnaire and Interview

Network analysis was completed in UCINET version 6.52. First, the resource sharing, coordination, and partnership matrices were symmetrized. Specifically, discrepancies were consolidated by using the highest value response, assuming that the organization reporting the closer relationship had more information about the organization's resource sharing and level integration with other organizations.

4.3. Resource Sharing Network

Each organization reported the existence and direction of resource flow (response options included: send, receive, both send and receive, neither send or receive, don't know, not applicable) with every other organization. These relationships are depicted in the funding network map. For the network analysis, the funding responses were dichotomized as having a resource share relationship (send and/or receive) or no funding relationship.

Table 4.2 Resource sharing network

Network	Network density		Degree centralization				Betweeness centralization			
	Score (%)	**No. ties**	**Actors with high score**	**Out degree**	**Actors with high score**	**In degree**	**Index (%)**	**Mean**	**Actors with high score**	**score**
Resource flow network	0.029	8	AAHB,SCHO	4.00(.25)	WHO, HC	2.0(.125)	0.83	0.118	SCHO	2.0(.833)
					SCHO,FMHA, WCO,SCH	1.0(.063)				
Degree centrality index				0.234	0.1016					

Source; researchers' computation and Ucinet 6.52

Note: Betweenness centralization is presented as the Network Centralization Index. AAHB =Addis Ababa Health Bureau, SCHO= Sub City Health Office, WHO= Wereda Health Office, FMHA= Food Medicine Health Administration, "DMA" ='Denb maskeber', WCO =Women and Children's Office, WS =Water and Sanitation, YS= Youth and Sport, SCH= Schools, PRIVCLI =Private Clinics, WDA= Women's Development Association, ESAO= Employees and Social Affaire Office, HC= Health Centers, BO =Beautification Office, TIE =Trade and Industries Office, SMEO =Small and Micro Enterprise Offices, PCs =Policy Communities.

The resource sharing network results are presented in table 4.2 and depicted in Fig.1. The network density score of .029 indicates a low inter connectedness of resource sharing relationships. The results from the resource flow network analysis, degree centralization was 23.44% and 10.16% indicating the network was lower and not centralized around a small group of organizations in out-degree and in-degree centralization respectively. The betweenness centralization score of 8.3% indicates a low degree of centralization, and a network that is not centered on a small number of gatekeepers. On average, the organizations shared resource with two other organizations, and the number of relationships ranged from zero to four across the network. AAHB and SCHO had the largest number of ties (four ties) in out-degree network. On the other hand, in-degree network on average the organizations coordinated with one other organizations and the number of relationships ranged from zero to

two across the in-degree network. In addition, actors who have usually high out-degree are actors who are able to exchange with many others, or make many others aware of their views. Actors who display high out-degree centrality are often said to be influential actors (Hanneman & Riddle, 2005). Regarding the resource flow network AAHB and SCHO each had four ties and there out-degree score was 0.25 each.

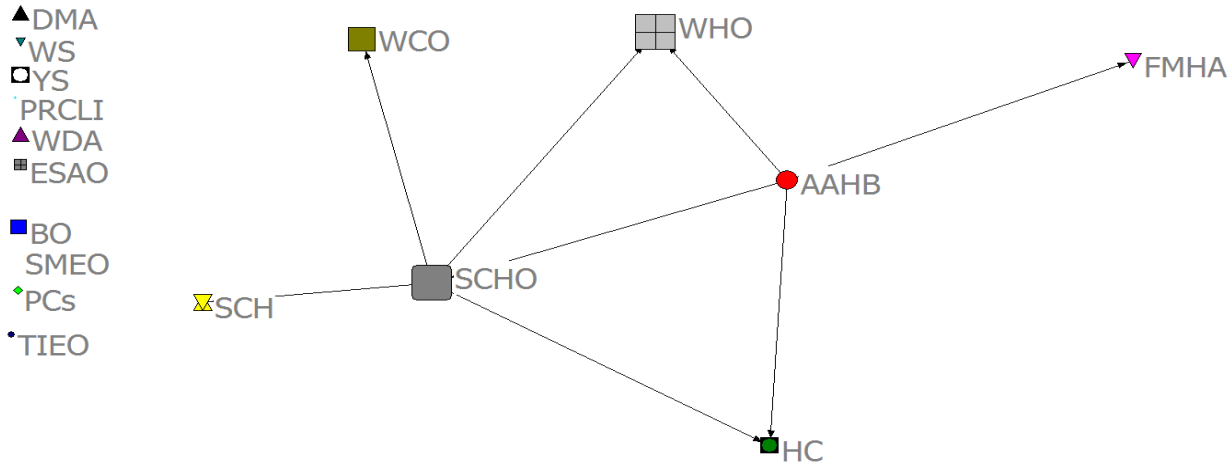

Fig. 4.2 Network map of resource sharing in Addis Ketema Sub City in UHEP implementation

4.4 Level of Integration

Actors that reported they never had contact with an organization were assumed to have a *not linked* relationship with that organization. While the scale used by (Harris, Luke, Burke, & Mueller, 2008) was dichotomized as "Not Linked" and "Linked" with a cutoff between cooperation and coordination, the study found the methods to create network boundaries meant that all of our network relationships were linked using this definition. Therefore, the study focus on dichotomizing the network relationships as partnerships (i.e., work together as a formal team with specified responsibilities to achieve common goals) and coordination (i.e., work side by side as separate organizations to achieve common program goals) relationships. The coordination network reflected coordinated relationships (or a higher level of integration) and non-coordinated relationships between UHEP implementers. The partnership network reflected partnership relationships (or a higher level of integration) and non-partnership relationships.

4.4.1 Coordination Network

Inter-organizational coordination involved two organizations working side by side to achieve common goals (Harris, Luke, Burke, & Mueller, 2008). The results from the coordination network analysis are presented in above Table 4.4 and below Fig. 2. The coordination network reflected coordinated relationships (or a higher level of integration) and non-coordinated relationships between UHEP implementers.

Table 4.3, Defining the Level of Inter-organizational Integration

Level of integrations	Definitions
Fully integrated	We mutually plan, share staff or funding resources and evaluate activities to accomplish our common goals.
Partnership	We work together as a formal team with specified responsibilities to achieve common program goals (note: responsibility for each organization is usually outlined in a Memorandum of Understanding or other agreement)
Collaboration	We work side-by-side and actively pursue opportunities to work together as an informal team (i.e., do not establish a formal agreement; work together "in the spirit of collaboration").
Coordination	We work side-by-side as separate organizations to achieve common program goals (i.e., efforts are organized to prevent overlap, but tasks are performed as separate organizations).
Cooperation	We share information and work together when any opportunity arises.
Communication	We share information only when it is advantageous to either or both programs.
Not integrated	We do not work together at all and have separate program goals.

Table 4.3 coordination network

network	Network density		Degree centralization				Betweeness centralization			
	Score (%)	**No. ties**	**Actors with high score**	**Out degree**	**Actors with high score**	**In degree**	**index**	**Mean**	**Actors with high score**	**score**
coordination network	0.279	38	HC	5.00(.313)	SCHO	11.0(.125)	1.31%	0.88(.36)	SCHO,WHO	3.83(1.59)
			YS,SCH,WDA,BO	4.00(.25)	WHO	10.0(.62)			DMA,WHO	3.0(1.25)
					AAHB,WCO,	6.00(.37)				
Degree centrality index				**0.1836**	**0.5820**					

Source; researchers' computation and Ucinet 6.52

Note: Betweenness centralization is presented as the Network Centralization Index. AAHB =Addis Ababa Health Bureau, SCHO= Sub City Health Office, WHO= Wereda Health Office, FMHA= Food Medicine Health Administration, "DMA" ='Denb maskeber', WCO =Women and Children's Office, WS =Water and Sanitation, YS= Youth and Sport, SCH= Schools, PRIVCLI =Private Clinics, WDA= Women's Development Association, ESAO= Employees and Social Affaire Office, HC= Health Centers, BO =Beautification Office, TIE =Trade and Industries Office, SMEO =Small and Micro Enterprise Offices, PCs =Policy Communities.

The coordination network density score was the highest (27.9%) of the three networks but concerning the 'Gold lock principles', this score is considered a lower level of density. Degree centralization was 18.36% and 58.20% indicating the coordination network was lower and highly centralized around a small group of organizations in out-degree and in-degree centralization respectively.

The betweenness centralization score of 1.31% indicates a low degree of centralization, and a network that is not centered on a small number of gatekeepers. On average, the organizations coordinated with two other organizations, and the number of coordinated relationships ranged from zero to five across the out-degree network. HC had the largest number of coordination ties (five ties) in the network, followed by YS, SCH, WDA, BO (four ties). On the other hand, in-degree network on average the organizations coordinated with six other organizations and the number of coordinated relationships ranged from zero to 11 across the

in-degree network. SCHO had the largest number of coordination ties (eleven ties) in the network, followed by WHO (ten ties) and AAHB, WCO connected with six other organization each. This implied that Addis Ababa Health Bureau and Women's and Children Office having a favored position means that an actor may extract better bargains in exchanges, have greater influence, and that the actor will be a focus for deference and attention from those in less favored positions. This autonomy make them less dependent on any specific other actor, and can make opportunities to accelerate knowledge f*lows* across functional and organizational boundaries.

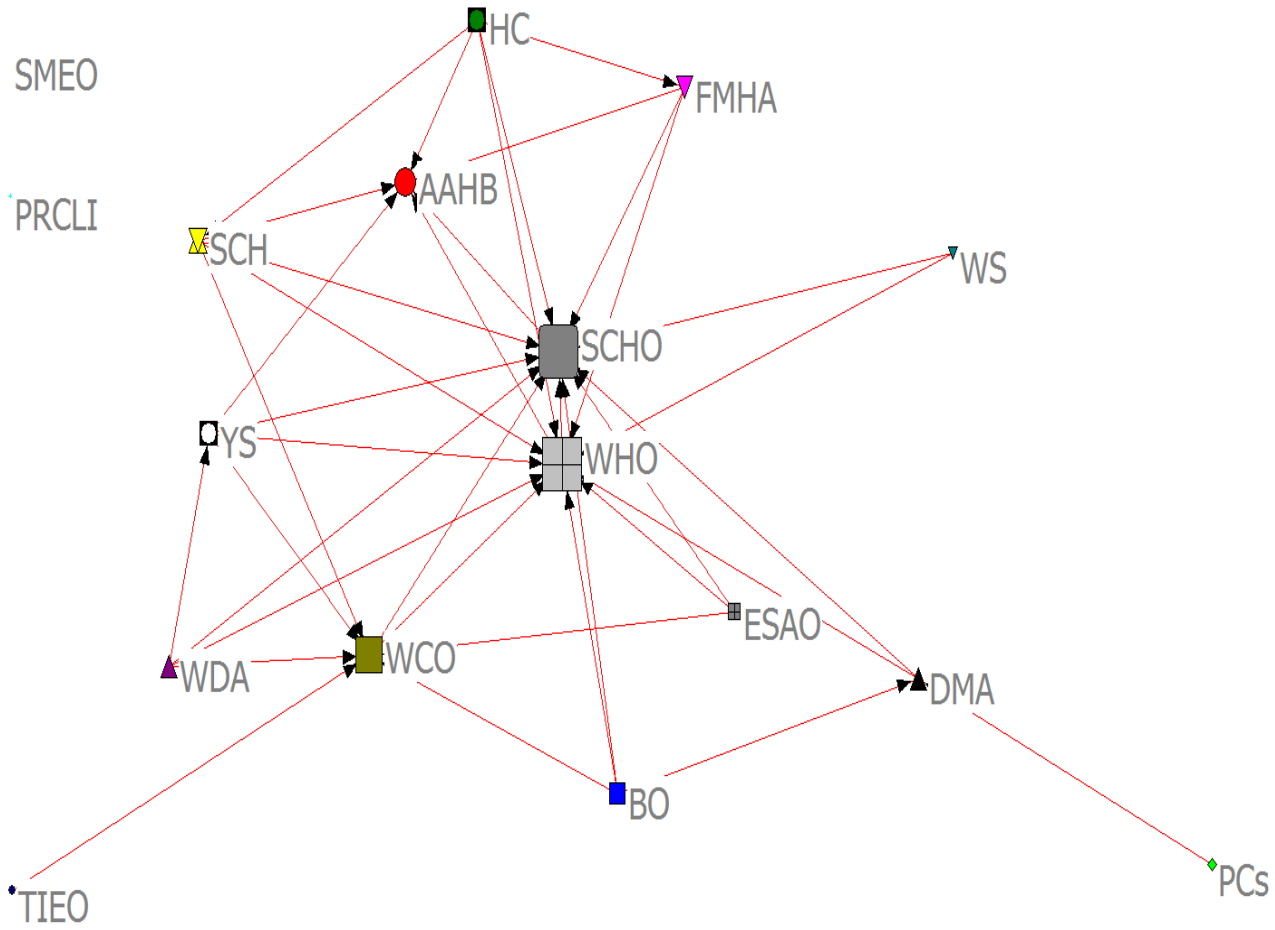

Fig. 4.3. Network map of coordination in Addis Ketema Sub City in UHEP implementation

4.4.2 Partnership Network

Partnerships involved two or more organizations formally working together with specified responsibilities to achieve a common goal (Harris, Luke, Burke, & Mueller, 2008). The partnership network reflected partnership relationships (or a higher level of integration) and non-partnership relationships.

Table 4.4 Partnership Network

network	Network density		Degree centralization				Betweeness centralization			
	Score (%)	**No. ties**	**Actors with high score**	**Out degree**	**Actors with high score**	**In degree**	**index**	**Mean**	**Actors with high score**	**score**
partnership network	0.162	22	HC	5.0(.313)	WHO	6.0(.375)	4.38%	1.118(.466)	WHO	11.0(4.58)
			YS,WDA	3.00(.188)	SCHO,WCO	5.0(.313)			WCO	6.00(2.50)
Degree centrality index				**0.2461**	**0.3125**					

Source; researchers' computation and Ucinet 6.52

Note: Betweenness centralization is presented as the Network Centralization Index. AAHB =Addis Ababa Health Bureau, SCHO= Sub City Health Office, WHO= Wereda Health Office, FMHA= Food Medicine Health Administration, "DMA" ='Denb maskeber', WCO =Women and Children's Office, WS =Water and Sanitation, YS= Youth and Sport, SCH= Schools, PRIVCLI =Private Clinics, WDA= Women's Development Association, ESAO= Employees and Social Affaire Office, HC= Health Centers, BO =Beautification Office, TIE =Trade and Industries Office, SMEO =Small and Micro Enterprise Offices, PCs =Policy Communities.

Results from the network analysis are presented in Table 4.5 and depicted Fig. 3. The partnership network was loosely connected with a low network density score 1.62%. Degree centralization was 24.61% and 31.25%, for in-degree centralization and out-degree centralization respectively, which indicates that the in-degree was the lower centralization and out- degree centralization was

the modest level of centralization, which implies the network was not highly dominated by a few organizations. According to the betweenness centralization score 4.38%, this network included a lower level of gatekeeper organizations. In addition, the number of partnership connections ranged from zero to five. HC was the key gatekeeper in the partnership network (5 ties), followed by YS and WDA (three ties). Health Centers having a favored position means that an actor may extract better bargains in exchanges, have greater influence, and that the actor will be a focus for deference and attention from those in less favored positions. This autonomy make them less dependent on any specific other actor, and can make opportunities to accelerate knowledge f*lows* across functional and organizational boundaries.

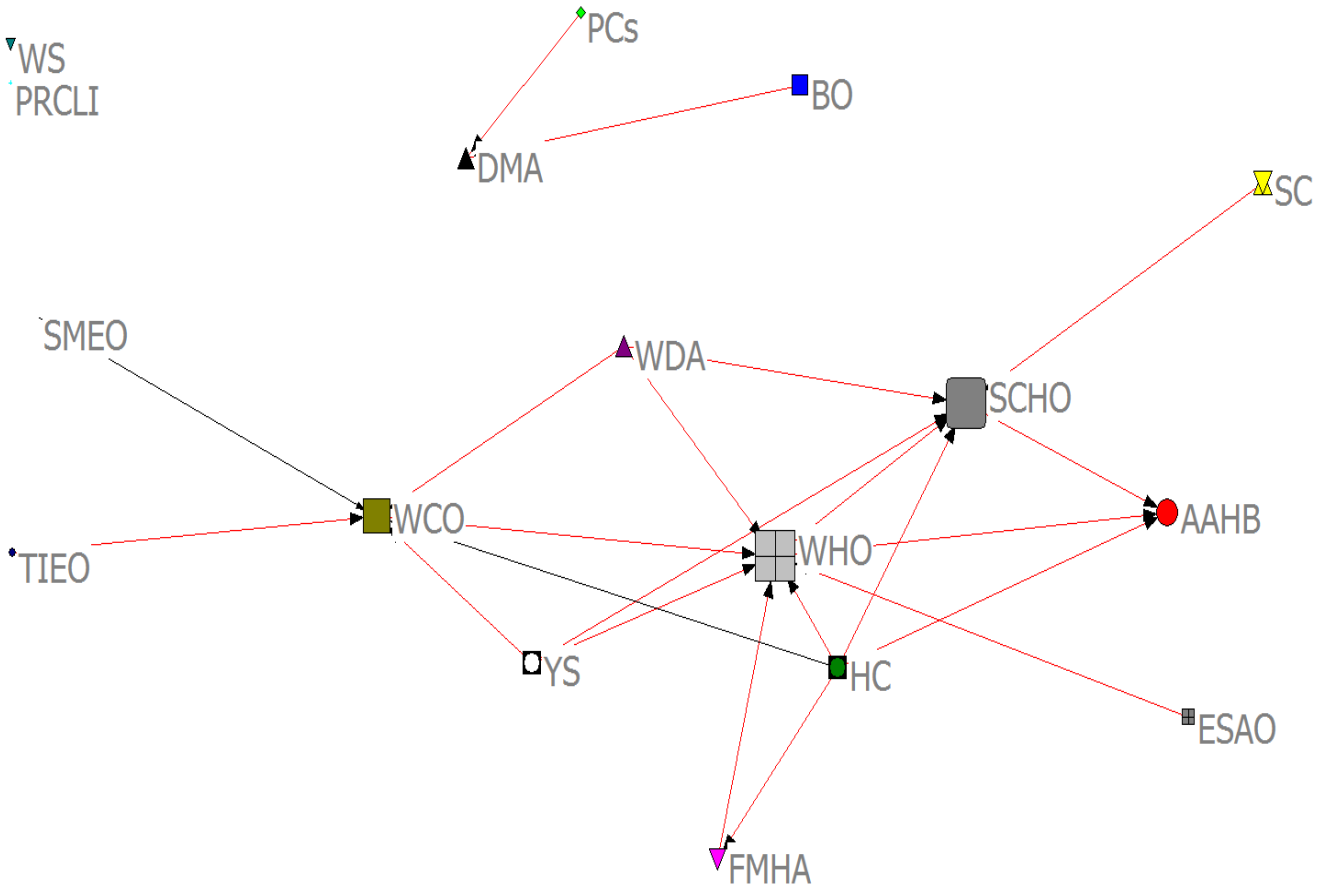

Fig. 4.4. Network map of partnership in Addis Ketema Sub City on UHEP implementation

4.6 Discussion of the Finding

Density and centralization were used to assess inter organizational structure of the UHEP implementation network of resource flow, coordination, partnership networks.

4.6.1 Structural properties of whole networks

Table 4.6, Summery of Whole network structural properties

Network	Network density		Degree centralization%		Betweeness centralization%	
	score	No. ties	Out degree	In degree	Index	Mean score
Resource flow network	0.029	8	0.2344	0.1016	0.83%	0.118
Coordination network	0.279	38	0.1836	0.5820	1.31%	0.88(.36)
Partnership network	0.162	22	0.2461	0.3125	4.38%	1.118(.466)

Source; Ucinet out put

Density provided information on the level of inter-organizational connectedness in the network. More organizations worked independently towards similar goals while being aware of others work, than organizations working together as a formal team. Specifically, on average UHEP implementation network had resource sharing relationships with 2.9% (low density) and worked in coordination with 27.9% (lower density) and in partnership with 16.2% (low density) of the other UHEP in the network. There are both advantages and drawbacks to working in a partnership network (Provan, Veazie, & Staten, 2005). Some benefits of such a network include regular ongoing communication between organizations, more plans that are integrated and actions towards a common vision and greater access to pooled resources (e.g., funding, human resources). Potential drawbacks to a partnership include the relatively large amount of time required to maintain relationships, make decisions and formalize agreements, plans and processes. Additionally, groupthink may constrain the development of innovative or unique projects. Furthermore, the vision of the network of collaborating organizations may not fit the vision, mission or role of each organization. These variations among organizations may be a

barrier to devoting resources towards the partnership. Therefore, though increasing the partnership connections in the network could help increase the capacity of the network, some disadvantages may exist for an overly connected network. Obtaining the optimal amount and degree of integration of organizations within the network is an ongoing challenge for organizations involved in these networks. This is further complicated given the dynamic nature of these network connections which and may change in terms of amount and degree over time.

The magnitude to which the network dominated by a small group of organizations assessed by degree and betweenness centralization (Knoke & Yang, 2008). Networks with a high degree of centralization are connected by a small group of organizations that are well positioned to develop strong inter-organizational relationships built on trust, and thus, are able to quickly disseminate information to the network (Yessis, Riley, & Stockton, 2013). Whereas networks with a low degree of centralization have a similar amount of ties across the network, and are better at generating new information and building on diversity (Borgatti & Everett, 2013).

Therefore, a moderate level of centralization is ideal (i.e., between .30 and .50) (Valente et al., 2015). However, it is important to take the type of network tie and context into consideration. Degree centralization of the UHEP implementation networks were in the low range (coordination = 0.279, partnership = .162, resource sharing = 0.382). The betweenness centralization (i.e., the degree to which a few organizations had control over the relationships between other organizations in the network) scores in our study were in the low to moderate range (coordination = 1.31%, partnership = 4.38%, resource sharing = 83%). Thus, overall the degree and betweenness centralization scores in the UHEP implementation are good.

The study identified SCHO and WHO equally as the gatekeeper in all networks, connecting several organizations that would not otherwise be connected. When the number of connections were considered (i.e., degree centrality), SCHO had a substantially larger number of resource sharing and coordination connections compared to the other organizations, however other organizations had also large number of coordination and connections. Thus, SCHO is an ideal organization for knowledge dissemination

Coordinated inter-organizational relationships support knowledge exchange informing organizational planning and practices. For example, inter-organizational knowledge sharing within the network can: facilitate the introduction of new organization or organizational leaders

to others in the network, assist in the navigation of organizational roles by considering work to fill knowledge or service gaps and avoid duplication, and support other organizations initiatives (Provan, Veazie, & Staten, 2005). A network supporting coordinated and collaborative inter-organizational relationships helps organizations find a niche where they can specialize and contribute to the body of network activities, rather than attempt to be the expert across populations, locations and fields. Thus, taking steps to purposefully, strategically increase the quantity of coordination and partnership relationships within the UHEP implementation network may improve the efficiency and effectiveness of current health promotion efforts, reaching a broader target audience, and increasing access to resources and individuals with specialized skill sets (Agranoff, 2003).

4.6.2 Central or influential

The most central actors in resource flow, coordination and partnership networks have been determined based on their number of ties i.e. is degree centrality and the amount of incoming ties (in-degree centrality).

According to Hanneman & Riddle (2005), actors who have more ties to other actors may be at advantaged positions. Because they have many ties, they may have alternative ways to satisfy needs, and hence are less dependent on other individuals. Because they have many ties, they may have access to, and be able to call on more of the resources of the network as a whole. Because they have many ties, they are often third- parties and deal makers in exchanges among others, and are able to benefit from this brokerage. Therefore, a very simple, but often very effective measure of an actor's centrality and power potential is their degree.

In the network of resource sharing the most central or influential actor were WHO and HC with having two incoming tie each. Followed by SCHO, FMHA, WCO, SCH and each actor has one incoming ties. The in-degree score shows the recognition of collaborative actors by others only.

On the other hand, the Sub City Health Office has designed as the most central actor in the coordination network by other organizations (in-degree value) it has eleven in coming ties. Followed by WHO with ten incoming ties and the third the position held by AAHB and WCO with 6 ties each. Regarding the partnership network, WHO was the most prominent actor in the

network with the six incoming ties and followed by SCHO and WCO each has five in-degree centrality values.

Chapter five

5. Conclusion and recommendations

5.1 Conclusion

The study was attempted to describe the inter-organizational relationship among the urban health extension programs implementers from the policy network analysis approach. The study was motivated by the methodological gap and with some coordination problems among the stakeholders who had the key role in the UHEP implementation. The study guided by the research question of what are the whole network structural properties and who is the most central or influential actor in resource sharing network in the UHEP implementation?, what are the whole network structural properties and who is the most central or influential actor in coordination network in the UHEP implementation?, what are the whole network structural properties and who is the most central or influential actor in partnership network in the UHEP implementation?. In order to answer the above research questions, the researcher collected relational data from 64 organizations that had found in the Addis Ketema sub-city of Addis Ababa, Ethiopia. After intensive data analysis using Ucinet 6.52 the researcher come up with the following conclusions.

The network of resource sharing has low inter connectedness of resource sharing relationships (network density = 0.029) and few organizations had not control over the relationships between other organizations in the resource sharing (betweenness centralization=0.83%). In addition, all actors in the network have a similar amount of ties across the network, and are better at generating new information and building on diversity (degree centralization= 0.168). The most central or influential actors in resource sharing network were Woreda Health Office and Health Centers (In-degree centrality=0.125).

Regarding network of coordination, the network has not well inter connected or has lower relationships among actors (network density = 0.279) while the relationship between among actors not dominated by few actor (betweenness centralization=1.31%). Again, all actors in the network have a similar amount of ties across the network (degree centralization= 0.382). In addition, the Sub City Health Office has designed as the central actor in the coordination network by other organizations (in-degree centrality=0.125). SCHO and WHO equally as the influential

in the coordination networks, connecting several organizations that would not otherwise be connected (betweenness centrality=1.59).

Concerning the network of partnership degree of inter-organizational connectedness was lower (network density = 0.162). According to the betweenness centralization score 4.38%, the network was not highly dominated by a few organizations. Again, all actors in the network have a moderate amount of ties across the network (degree centralization= 0.279). In addition, the Sub City Health Office has designed as the central actor in the coordination network by other organizations (in-degree centrality=0.125). WHO was the influential in the coordination networks, connecting several organizations that would not otherwise be connected (betweenness centrality=4.58). Thus, WHO is an ideal organization for knowledge dissemination.

Finally, network density and centralization were used to analyze the inter organizational relation structure of the UHEP implementation network of resource sharing, coordination and partnership networks. Density provided information on the level of inter-organizational connectedness in the network. More organizations worked independently towards similar goals while being aware of others work (coordination), than organizations working together as a formal team (partnership). The organizations are used to working and managing within hierarchies rather than across them, which may leading to problems and challenges that limit the potential of networks. The rise of networks as a form of inter organizational collaboration to alleviate pressing public health problems requires professionals to rethink traditional methods of managing relationships.

5.2 Recommendations

Exploring the relationships between organizations can provide insight into the inter-organizational relation. Network analysis is one method of gathering information to examine the structural relationships among Urban Health Extension Program implementers. Based on the network analysis finding the study also come up with some recommendations to boost coordination and partnership among the actors.

- Public health administrators should come up with techniques that address structural aspects of networks that may in turn facilitate collaborative processes.
- Create fluid boundaries and eliminate barriers for working across organizations; barriers to enter into collaboration may exist, because most organizations working in hierarchies

rather than across them, leading to problems and challenges that limit the potential of networks.

- Private health facility should incorporate for urban health extension program, because private clinics are the most isolated and may have potential resource and expertise in the area.
- Some organizations are central (Sub City Health Office and Woreda Health Office) to the network and may provide opportunity for leveraging the rest of the network as well as providing opportunity for strategic information and channeling of resources to the rest of the members
- Hold follow-up discussions with organizations and groups working in urban governance, including municipal offices, urban development agencies, and social welfare bureaus, and universities to identify possible areas of coordination and synergy with respect to urban health issues.

5.3 Future research recommendations

The present study results based on quantitative approach. User-friendly computer programs and mathematical development for measuring and visualizing network had led to significant advances in quantitative Social Network Analysis. In This approach, Peay (1980) as cited by (Edwards, 2010) the mapping and measuring of social relations necessarily reduces to binary categories i.e. ties are either present or absent, and questions as to the quality and/or strength of relations cannot be adequately captured by adding extra numerical details (like, for instance, recording the frequency of contacts in data matrices). On the other hand, the qualitative approach give an insight about the relations, the lived experiences of the social networks, what pass through networks, the spatial embedding of network ties and the consequences of network dynamics for different structure. Therefore, the future researcher can combine the two approach (mixed approach) to study the inter organizational relation in the urban health extension program implementation. And can come up with better insight to the inter organizational relations strength of the network, what flows through networks and does the content of the flow important to network members, on what base member organization relation based is that truest..

The other recommendation to future research area Ibarra (1993) as cited by Burton and Wu (2010) is based on the theoretical foundation of performance is based on the idea that the

structure of social interactions enhances or constrains access to valued resources. Resources exchanged through informal networks have substantial value, including work-related resources of task advice and strategic formation. This resource exchange is likely to be positively related to job performance (ibid). For the member of networks social capital are a valuable source for information and knowledge that can substantially influence their performance. Based on this, one can study performance of member organizations in Urban Health Extension Program implementation in relation to their structural position in the networks. In addition, can identify and advocate the informal relation between the member organizations in the program implementations because based on the finding of this study, most organization work and have hierarchical relation

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Appendence

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Part I. Introduction

The purpose of this study is to assess the implementation of UHEP in inter-organizational relations that exist in the implementation of Urban Health Extension Program. I would like you to list those organizations with whom you collaborates in the implementation of urban health extension program. Partners include those organizations with which you have formal or informal relationship, those with whom you have joint programs, and those with whom you share resource, such as information, beneficiaries, materials, meeting space, money/budget, and staff. Please include governmental, non-governmental, and private organizations, but, for the purpose of this study, please only include organizations operating in Addis Ababa city. For each organization, I will be then asked you a serious of additional questions regarding your relation.

Ephrem Weldeyes, for any questions and opinion you can contact me
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Part II. Questions to identify resource sharing and directions

	Name of the organization	Yes			No	I don't know
		Receive	Send	Receive and send		
1		1, information 2, physical space 3, clients 4,staff 5, materials 6, money/budget 7,other	1,information 2, physical space 3, clients 4,staff 5, materials 6, money/budget 7,other	1, information 2, physical space 3, clients 4,staff 5, materials 6, money/budget 7,other		
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

Have you share resource with those organizations that you have the identified relations?

Part III. Questions to identify level of integration

Here there are definitions for the level of integrations, please kindly select your level of integration with those organizations that you have the identified relation.

Level of integration	Definitions
Not linked	We did not work together at all and have separate program goals.
Communication	We shared information only when it is advantageous to either or both programs.
Cooperation	We shared information and worked together when an opportunity arose.
Coordination	We worked side-by-side as separate organizations to achieve common program goals; efforts were coordinated to prevent overlap.
Collaboration	We worked side-by-side and actively pursued opportunities to work together, but did not establish a formal agreement.
Partnership	We worked together as a formal team with specified responsibilities to achieve common goals (had a Memorandum of Understanding (MOU) or other formal agreement).
Fully linked	We mutually planned and shared staff and/or resources to accomplish common goals.

	Organizations names	Not linked	Communication	Cooperation	Coordination	Collaboration	Partnership	Fully linked
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								

Glossary

Betweeness; The extent to which a node lies between other nodes in the network. This measure takes into account the connectivity of the node's neighbors, giving a higher value for nodes which bridge clusters. The measure reflects the number of people who a person is connecting indirectly through their direct links.

Centrality; this measure gives a rough indication of the social power of a node based on how well they "connect" the network. "Betweenness", "Closeness", and "Degree" are all measures of centrality.

Centralization; The difference between the number of links for each node divided by maximum possible sum of differences. A centralized network will have many of its links dispersed around one or a few nodes, while a decentralized network is one in which there is little variation between the number of links each node possesses.

Density; Number of ties in the network divided by the maximum number ties possible (Borgatti et al. 2013)

Degree centralization; The degree centralization expresses how tightly the graph is organized around its most central point (Scott,1991)

Degree centrality; Number of ties of an actor, often distinguishing between reciprocal ties, incoming ties (in-degree) and outgoing ties (out-degree) (Hanneman and Riddle, 2005)

Betweeness centrality; Probability of an actor being on the shortest path between any two organizations in the network.

Betweenness centralization; expresses the degree to which a few organizations have control over the relationships of other organizations in the network. A higher betweenness centralization score indicates greater centralization and a smaller number of gatekeepers that dominate the network.