



ARTICLE



<https://doi.org/10.1057/s41599-024-03344-3>

OPEN

Social structure and clan group networks of Afar pastorals along the Lower Awash Valley

Bisrat Teklesilassie Yazew ¹✉ & Getachew Kassa¹

The study examined how Afar society's clan structure and societal hierarchies were established. The links of customary law (maa'da) practices, traditional communication (dagu), and social networks (affehina) were found to be significant in the social structure for how members perform social interactions. A qualitative method was applied, which involved Key informant interviews, focused group discussions, and observation techniques as data-gathering tools. The data was interpreted using a thematic analysis technique. Accordingly, the study explored that the administrative and social structure of the society consisted of the sultanate, the clan, and youth social groups. Each social unit has its distinct functions. A clan is the highest and most territorially located social organization. In addition, it was identified that network ties would be more commonly used to depict member's interactions within the clan's network structure. However, the clan's territory (dinto) is not changeable as the season changes. The customary law applications are identified as a system of governing and controlling the social structure, social interactions, anti-social behaviours, and clan networks, with no change and differences in contents and practices in all clan groups. Furthermore, the expansion of small cities gradual change to urban centres, economic inequalities, and recurrent drought resulted in the decline of traditional norms and mutual social trusts. As a result, the study concluded that to sustain the traditional knowledge and social structure in facilitating clan vital networks, implementing visible policies will benefit the society, the government, and stakeholders to plan out effective mechanisms to preserve the sociocultural worth of the Afar pastoral societies in particular and other social groups in the country in general.

¹ College of Social Sciences and Humanities, Centre for African and Asian Studies, Addis Ababa University, Addis Ababa, Ethiopia. ✉email: bisrat.tsilassie@aau.edu.et

Introduction

Urbanization is a significant transformation in Africa, with cities doubling and a population of 500 million. These rapidly growing cities impact the country's economic, social, and political landscape and benefit rural areas. Over time, developing countries have experienced a more robust urbanization process than developed countries, leading to more significant urban population rates (ECA/AfDB, 2022, p.4). These are the potentials of small and mid-sized cities for job creation, productivity, and economic integration. It emphasizes the importance of considering thinly populated regions and the polarized spatial pattern of the global population (Balsa-Barreiro et al. 2021, p.1). It implies that the changes are not being observed in urban areas; relatively rural areas and small cities are the main places where the dynamics are prevalent.

Currently, cities' attractiveness and rapid urbanization have caused conflicts related to gentrification and polarization. In broad terms, the segregation between urban and rural spaces is increasing over time. The study of Balsa-Barreiro et al. (2021) indicated that this process is progressive while testing the spatial networks, with the most minor nodes (*small cities*) the first ones to disappear. The study reveals a gradual weakening of rural demographic structures, leading to a severe population decline. This pressure, exacerbated by forced land use changes, significantly impacts indigenous knowledge and economic and societal interaction mechanisms. At this juncture, protecting economic resources primarily controlled by a particular identity group under declining humans motivates inter-group conflicts and clashes. This contributes to the prevalence of potent identity-based factors among pastoral societies with broader perceptions of economic and social injustice (Markakis, 2011).

Modernizing African governments are transforming pastoral communities through sedentarization, mixed marriages, and political participation. However, most pastoral societies live on society's social, economic, and political peripheries. This made cultural, structural, and physical difficulties more likely to persist (Muauz, 2018). This is because the patterns of social cohesion and the strategies that groups use to coexist peacefully vary from case to case (Michael et al. 2004). At this point, as populations increase, excess people are forced to leave their permanent residences for many reasons. Population growth in Africa is causing vulnerability, destitution, social disintegration, and economic reciprocities in pastoral regions, impacting social cohesion and functioning (Markakis, 2011).

The spatial settlement patterns of pastoral societies in East Africa, in general, were influenced by internal and external factors, including government political interventions and forced migration (Bujra, 2002), colonial powers' expansion (Markakis, 2011), local conflicts, resource competition and social disintegration (Getachew, 2004). The colonial power interventions impacted land division, benefited some clan chiefs, and harmed the larger pastoral masses. Hence, the pastoral societies were divided into clan chiefs' interests, and conflicts began. Despite their relatively small numbers in Ethiopia, they are of some importance because of their location between the highlands and the Red Sea. The Afar people are divided into clans that serve as a core for administration and collaboration to conduct social activities (Abdulfetah, 2018).

In particular cases of Afar pastoralists, several empirical studies have been focused on traditional marriage practices (Awol, 1999), Afar ethnicity (Ali, 1997), economic adaptation and competition for scarce resources (Getachew, 2002), settlement patterns (Getachew, 2004), alternative dispute resolution (Kelemework, 2011), indigenous governance (Mohammed, 2011), Issa-Afar violence (Muauz, 2018), traditional law from modern law perspective (Abdulfetah, 2018), and regional stability and regional

dynamics (Yasin, 2010). However, these studies overlook the importance of social structure and clan network ties in enhancing social relationships in Afar society in the Lower Awash Valley. The region's resources, including fertile soils, rivers, and streams, contribute to the evolution of Afar pastorals. Most urban centres have begun to flourish. Awsi-Rasu, with a compact of many small cities, expansion of urbanization, population settlement, and various service facilities, is chosen as a significant study area.

Afar society consists of both administrative hierarchies and levels of social structure. Accordingly, in the former one, the sultan (*amoita or derder*) is at the top of the chain, next to the clan (*kedoo*) and following the youth age-based group (*fimma*). In the latter case, the nuclear family (*burra*), extended family (*dahala*), and the sub-clan group (*gulub*) are on the level. Afar's clan social organization superficially reflects masculine identity, male dominance, and matrilineal descent. However, the nature, traits, and changes in Afar society's social structure, relationships, and clan network ties have not received enough attention. It shows a need to develop tools to explore these nexus. Therefore, this study aimed to explore the continuity and changes in social relationships, clan network ties, and social structure among Afar pastorals residing along the Lower Awash Valley in Northeastern Ethiopia.

This research study identifies the primary link between the traditional communication system, cultural values and customary law practice, social networks, social behaviour, seasonal mobility, and resource use. The combinations of various research methodologies and components used to implement the study make it novel. It fills in the knowledge gaps left by earlier studies on the functions of social structure and clan group network in maintaining the social relationship process of the Afar society and refutes them. The social hierarchy plays a crucial role in micro-level society and social structure, facilitating, managing, and governing societal social networking activities. Thus, a prior study found that the Afar pastoral community's general social network and social structure functions varied from zone to zone. The parts, however, are consistent throughout all zones and settled clans. The customary law has been served by preventing crimes and governing the social structure and clan network ties. The previous study may have overlooked the methodology's application and preference for understanding pastoralists' interests. It is currently an important discovery that helps to reimage the misguided perceptions of the sociocultural practices of pastoral communities in the Afar from various angles.

Study significance

Most of the literature on social networks has concentrated on urban and social or organizational levels. However, the study shows how social networking is crucial for rural and small-scale societies, facilitating and perpetuating social interactions among community members at the individual and social groups within the social structure. The study's findings will, therefore, be used as additional inputs and sources of references for the literature that already exists in the fields of society, sociology, cultural studies, cultural anthropology, social work, community mobilization and cohesion, social interactions, traditional communications, and, above all, native knowledge studies. Therefore, this study will urge policymakers, the government, social groups, and other interested parties to reassess the sociocultural traits of the target society and suggest potential actions with new interventions that serve as a guide for successfully implementing in current situations the combination results of social networks, traditional communication systems, and clan networks assuring the sustainability of the functions of the social structure.

Methodology

Study area description. The Afar Regional State, located in the Northeast of Ethiopia, is structured into six zones (*Yangudi-Rassu* added recently) and 29 *Wereda* and 339 *kebele* (ANRS, 2022). Afar land stretches from the Middle Awash Valley in the South to the coastal depression of the Red Sea in the North. The Afar also lives in the Northern part of Djibouti and the coastal region in Eritrea, South of the *Bori peninsula*. The land is geographically confined to two gulfs. The first starts from *Gulf Kedula* (*Zula*) stretches to Tajoura (in Djibouti) and reaches up to Somali, and the second starts from the Red Sea and the Gulf of Aden to the central highlands of Ethiopia, specifically up to *Nemetle Fana* (Habib, 2019).

The first tip point of the triangle is in Southern Afraale or at *Gulf Annsely*, which passes through Tajoura and follows the Northern direction of the Djibouti border. The other tip point of the triangle follows the Djibouti railway to Addis Ababa, which mainly crosses most of the Afar internal lands up to *Namale Fana*. The triangle's third point starts from Awash town, passes through the *Gulf of Annsely*, and covers territorial adjustment areas of Showa, Wollo, and Tigray highlands. However, Afar land's Southern border has continuously changed because of the perpetual conflicts with the Issa-Somali clans (Jamaladin, 2015). Pastoralism is a traditional African way of life involving rainfall variability, livestock use, and strategic mobility. It relies on local information gathering, risk analysis, and formal governance systems. Clan groups influence social interactions and economic reciprocities (Abdu and Adem, 2021). The Afar regional state in Ethiopia, covering 8.4% of the country's land, is sparsely populated and home to 63.5% of Ethiopia's camels, cattle, sheep, goats, and donkeys. It is primarily pastoral and agro-pastoral,

contributing only 0.07% to grain production in 2019. The region has 1,812,002 people (CSA, 2016), with 19.1% in cities and 80.9% being pastoralists. Other means of livelihood, including nonfarm activities, sedentary farming, trade business, and wages from employment, are rarely practised. The highest population density is in remote desert areas, with most households in arid and semi-arid zones (EEA-SDARAGP, 2021, p.18–33) (Figs. 1, 2).

Research approach and design. The study used qualitative research to understand social interactions among Afar people, focusing on clan network ties and social structure. This study used social network theory to gather qualitative data. It assessed the impact of social relationships and cultural lessons on environmental, economic, and sociocultural values. Initial data was collected from network assumptions, geographic locations, social communication, and settlement patterns. This study applied a descriptive design to select clan groups, members, and other participants. This design is best to study and determine the prevalence of a phenomenon, situation, problem, attitude, or issue.

Sampling techniques. A purposive sampling technique was used to gather target sampling areas based on pre-selected criteria and sample size determined by resources and objectives. Major Afar clans and sub-clans were categorized along escarpments and grazing zones. Thus, Awsi-Rasu (zone 1) was selected based on clan groups' geographical proximity and settlement pattern to Lower Awash Valley, where *Afambo*, *Asayita*, *Dubti*, *Elidar*, *Mille*, and *Samara-Logia* were the major research areas (Fig. 3).

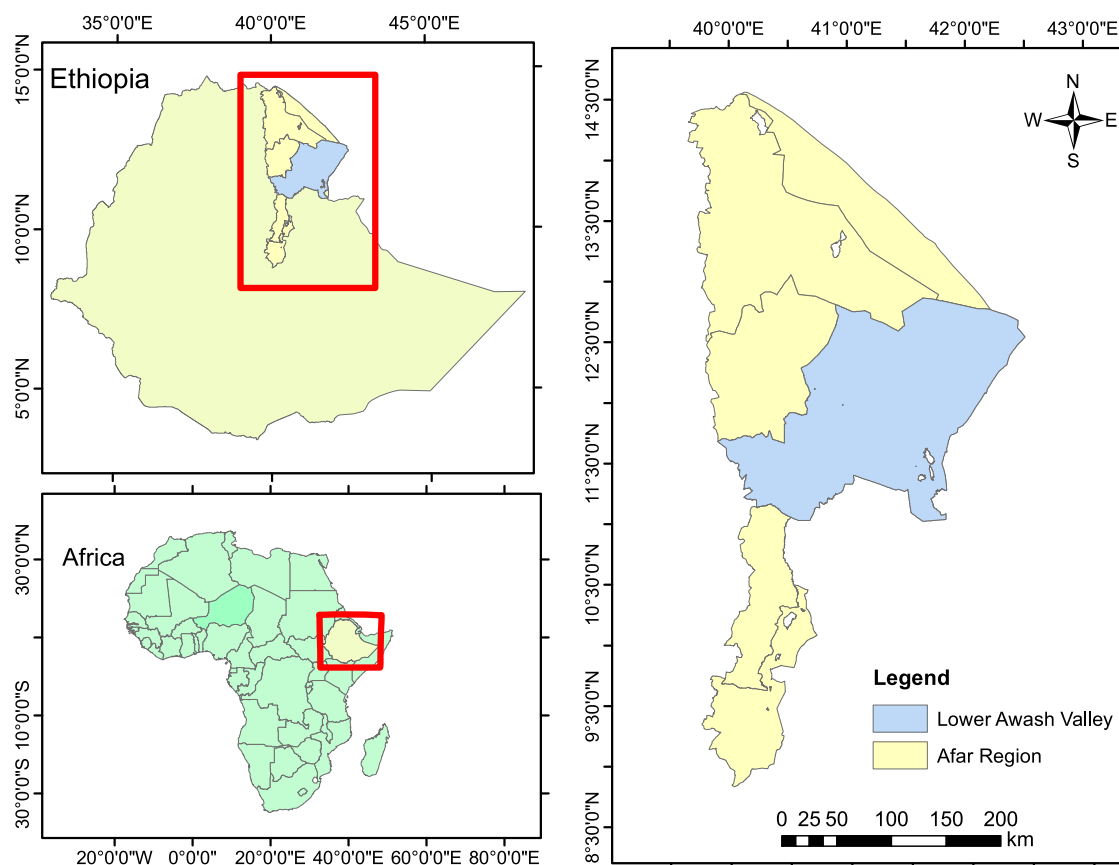


Fig. 1 The location of the study area. The figure indicates the location of the study area, Lower Awash Valley, from East Africa and Ethiopian regional and geographical location perspective.

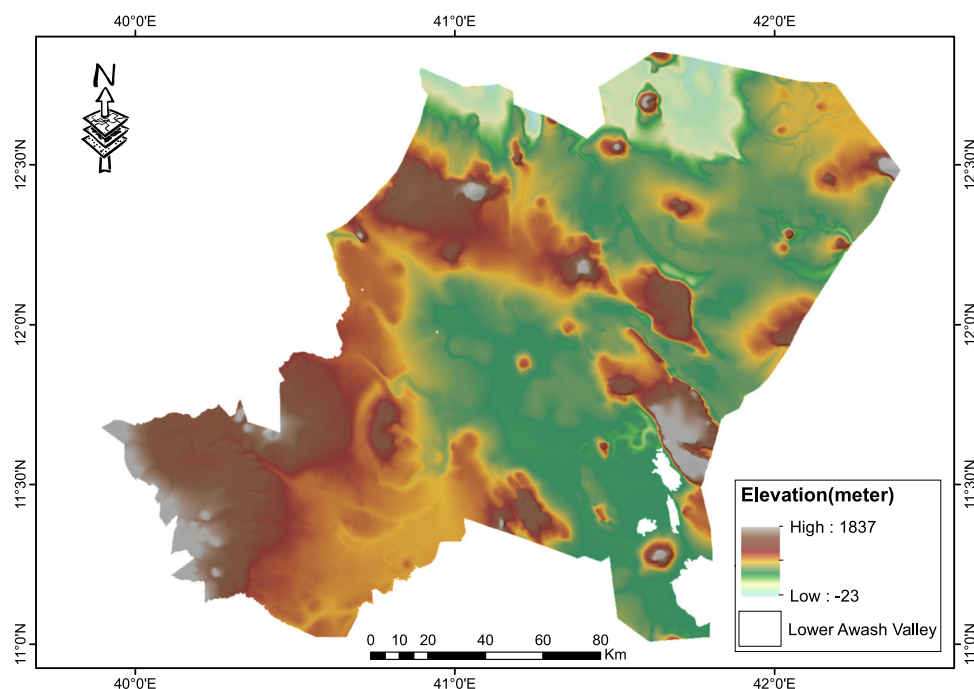


Fig. 2 Physical map of the study area. The figure reveals the physical map of the study area, where low and high elevations are located in the Lower Awash Valley zone.

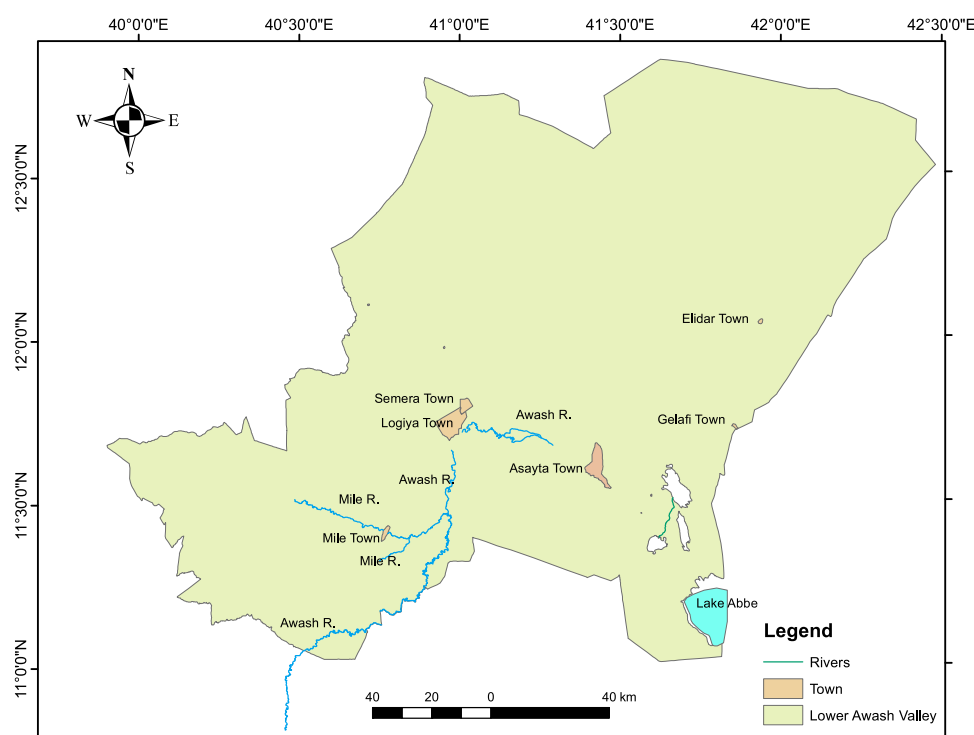


Fig. 3 Research areas, specific rivers, and settlements. The figure indicates the research areas, rivers, and the patterns of towns established following the drainage systems of rivers and streams within the lower Awash Valley region.

Similarly, the purposive sampling technique was used to identify key informants and focused group discussion (FGD) participants based on pre-selected criteria such as duration, proximity, acceptance, communication skills, participation levels, managerial ability, and working experiences. Of course, while selecting, there is always the danger of bias entering this sampling

technique (Cresswell, 2014). However, in this case, enormous care was being taken to avoid bias and make the results obtained from analyzing a deliberately selected sample tolerably reliable. The study involved Key informant interviews (KII) with various stakeholders, including district officials, youths, women, religious leaders, social experts, and community members from the Awsi-

Table 1 Fimma group age category and function.

Age category	Main members	Functions
Under the age of 18.	Membership nomination to begin training.	Provide limited activities, such as serving, helping and cooperating with other members.
Between 18 40 years old.	Confines trained and qualified members.	Providing and maintaining peace and security for local and national military issues, development works, community mobilization [public holidays and events, upholding customs], protection and preserving the environment, preventing crime, helping the less fortunate, maintaining social security, and other duties.
Above 40 years old.	Members in this category cordially share their irreplaceable duties for the coming generations of youth.	This category supports the main Fimma groups (18–40 age groups) by delivering different consultations, teaching, and providing back-side support.

Source: own survey.

Rasu settlement and grazing zone. Three field visits were conducted, involving 96 participants over three rounds.

Data collection tools. KII, FGD, and situational observation approaches were used to collect primary data. Furthermore, the nature of this research was exploratory and open-ended, and it needed qualitative research that “is much more subjective than quantitative research and uses very different methods of collecting information, mainly individual, in-depth interviews and focus groups” (Donilee and Spencer, 2007, p.419).

Focus group discussions create a space for participants to clarify their views and understandings from different perspectives on social relations, customary law practices, and cultural values and norms (Cresswell, 2014). In Lower Awash Valley, one FGD section discussed in each of the six areas purposively chosen in agreement with clan leaders, experts, community members, youth leaders, and administration workers to indicate the status of social interactions, the practices of cultural values, and the functions of the social structure. A small number of female, but mostly male, participants aged greater than 23 years were in the research setting. Purposive sampling was again applied to choose FGD participants. The participant number in a group was managed within a range of 8–12. This meets the ideal size for the exploitation of mature and multiple discussions (Aspers, 2009). Discussion item lists were primarily structured in English and transcribed into the local languages of Amharic and Afar (*Afar af*). The principal researcher and the support of an interpreter held the FGDs. Except for two remote areas in Asaita and Afambo, which were discussed only in *Afar af* language with the interpreter changed the ideas into Amharic to support the researcher to continue further discussion coming from the participants, the discussions were conducted both in *Afar af* and Amharic local languages. All discussions in the six research sites were voice-recorded and later changed following each section. The research was conducted in communal open spaces and volunteer home compounds, with individual interviews being the best method for data collection. Focused group discussions were challenging due to the community’s harsh climate and mobile nature. However, this challenge was overcome by conducting the session at night when the air condition became relatively suitable for the target discussion.

KIIs facilitate the acquisition of primary data sources, give an in-depth understanding of the notion, and settle in-depth explanations that secure the research’s validity, reliability, and generalizability by applying various methods through examining and articulating individual concerns (Cresswell, 2014). Thus, this study utilized open-ended interviews to enable the respondents to be more flexible while explaining their feelings, knowledge and experiences. Gender, pastoral livelihoods, social affairs, justice

experts, clan members, clan heads, and district administrators were key informants. Eight community and clan members and the other two experts were females; the rest were male KI participants. Informants were selected purposely based on such pre-selected criteria as their experience and knowledge of social relationships, cultural values and customary rules and regulations practices, social ties, acceptance, and public participation. Well-informed, experienced, and knowledgeable informants were accessed using the purposive sampling technique. All key informants were communicated in Amharic language and even assisted the researcher in explaining issues in comparison with *Afar af* language to avoid missing the meanings and concepts of raised issues in detail. Accordingly, 22 interviews, three informants for each research site except six for logya-samara and four for Asaita, were conducted. Arranging the key informant guides to articulate the discussion, sixteen interviews took place in the key informant’s respective villages (home compounds) and the rest of the regional and district bureaus. All interviews were voice-recorded and interpreted from Amharic and *Afar af* to English.

In situational observation sessions, the researcher observed and participated in cultural practices such as weddings, condolences, markets, socioeconomic reciprocity events, and keeping animals in pasture areas. Besides, a non-participant observation was conducted on the overall situations that appeared in the research sites for about six months. As a result, this non-participant observation was notably beneficial in gathering information about clan and kinship-based ties and identifying social and economic support networks that affected the incidence of social interactions and clan network ties. Eventually, secondary sources were consulted as well (Table 1).

Data analysis method. The qualitative method of data analysis was established on primary sources to triangulate the arguments provided in the discussion. This study applied a thematic interpretation approach for analyzing voice-recorded audio files, texts, and different valuable materials obtained from FGDs, KII, and researchers’ situational observations, as well as field visit minutes and notices. “Qualitative research is collecting, analyzing, and interpreting data by observing what people do and say” (Trochim, 2005, p.123). Then, meanings from participants’ responses were thematically interpreted, triangulated, and analyzed based on the themes that were prepared in groups and sub-groups.

Results

A clan group: structure, features, and characteristics

Social and administrative hierarchy in the social structure

Clan territorial and settlement patterns: A clan is the highest and most territorially localized social organization that comprises

several other clans (i.e., sub-clans). Afar lands are divided into the clan (*Kedoo*) territories, i.e., *dinto*. According to one interviewee, and based on the gathered information, clan territory is not changeable in connection. Instead, when the season changes, the pastoralists duly migrate or move to other areas for water and pasture. After staying for some months, they re-settled in their original places (*guubb*). It implies that a clan is not only obliged to live in its territory (*dinto*) but can also move to another clan's territory and share the available resources. As far as this case, one of the research participants from the pastoral livelihood office stated the following:

Territorial claims reside among clan groups, but the usage and sharing of natural resources sustainably take the highest position of agreements. Seasonal mobility to other clans' territory may or may not include all clan members and families (*burra*), and migrants must tell the reason from which clan, why they want to settle, and other cases to those clans' representatives or *kedoo abba* or *baroo eidola*. Such a procedure prevents intense conflicts. If permission is given, migrants will settle and communicate, live, and perform socioeconomic reciprocities with those nearby clan members. [KI9, male-4, 59 years old, Logya-Semera area]

Although clan groups' names and settlement locations differ, most Afar believe they are the same in their land and share similar living styles and characteristics. Clan groups are distinct in economic resources, membership size, acceptance, age, and participation levels but remain connected and communicate. According to the recently gathered data from different sources, this explanation is deficient in representing and differentiating what *kedoo* and *meela* mean because, as one of the key informants remarked:

"Kedoo" is a clan (as "Kee'eido" in the plural form). So, *kedoo* has sub-clans and is the primary social institution of the Afar people. Most socioeconomic relationships and interactions have a direct connection with this institution. A *kedoo* leads or determines members' pasture, resources, marriage, and administrative and decision-making processes. Similarly, "meela" means "kedoo." The Afar people use the two words alternately because, in some areas, a clan is called "kedoo," while in other areas within the territory; some call it "meela." Hence, there are no fundamental differences in their functions, communication structures and administration systems. [KI17, male-1, 65 years old, Eli'dar area]

The clan lifetime and social structure: This study found the information gathered through in-depth interviews with pastoral livelihood experts. The chances of Afar clan groups being dissolved are low due to the marriage practice of *absuma* and females' status of giving birth. Therefore, a clan's dissolution change is insignificant unless the members' size decreases. It implies that some clan (or sub-clans) groups with few female members might face such opportunities. Still, the probability will be less likely, as most focused group participants firmly stated. One of the participants about the levels of the social structure remarked:

The clan group consists of lower-level families and extended families. The same is true for the sub-clan group. In the social structure, each social group has a leader called 'Abba.' At this point, each unit's decision-making is based on the social levels, each with unique traits and obligations. Thus, the authority names family head (*burra abba*), extended family head (*dahala abba*), sub-clan head (*gulub*

abba), and clan group head (*kedoo/meela abba*) are each social level's appointed leaders. The lineage *gulub* is a sub-clan of *kedoo/meela*, which is made up of it. It is descended from a male grandfather and has absolute power over the other individuals. The smallest social unit, the *burra*, is a nuclear family with a wife, a household, and their children at the base of the social structure. Each plays a significant role in resolving internal and external problems, preserving community cohesiveness, and controlling socioeconomic reciprocities. [FGD3, male-6, 48 years old, Logya-samara area]

The study discovered that loyalty to clan leaders should be upheld at all costs because this burden may cause proposals for clan leaders to be rejected, as the justice officer and elders outlined.

Functions, purpose, and duties of clan heads: KII and FGDs were examined to determine how being a clan member benefited the members within the functions of the social structure and how their social interactions were necessary for their daily lives. Results suggest that a clan is essential for member's social and economic reciprocity. For instance, one of the FGD participants noted his views that:

The Afar people's social structure functions, traditional desert environment coping mechanisms, and seasonal change-based mobility are based on clan group activities relying on social networking procedures. These groups share language, religion, tradition, culture, decision-making authority, and customary law, but their settlement patterns vary. Clans serve as a core for administration, collaboration, and social interactions, even with strong clan kinship. [FGD3, male-6, 48 years old, Logya-samara area]

The study explored that the dispute resolution and social turmoil controlling mechanism of the Afar people are known for involving elders to solve minor disputes in the context of customary law, i.e., *maa'da*. It is an unwritten law and governed by a leader *maa'da abba*. At each level, consultation allows the agreement to cooperate, prevail, and avoid threats resulting in division and violence. Similarly, *makabantu* (in plural form *meekaaben*) is the other higher official's collective authority name for collaborative clan leaders; who work to administer the *maa'da*. Accordingly, the respondents believed that clan leaders' skills in the social networking process increased a clan member's sense of purpose and duty. This view is explained by one of the key informants as follows:

Different clans are represented by advisers, community leaders or elders, and practitioners of customary law, in addition to *kedoo abba*, *reesi barroh*, and *eiddaltu* (known in the plural as *barroh-eddola* or *barroh-eiddete*). Nowadays, *barroh-eddola* consists of elders who are regarded or acknowledged as having more expertise in administering the customary law under *kedoo abobti* and the sultan. Their primary responsibilities include talking with and advising *kedoo Abobti* and the Sultan, handling matters so that *kedoo abba* and the Sultan may judge them, and even acting as a judge to resolve disputes. They can therefore be thought of as the judges. If the two clans involved in the dispute cannot agree, a third party, an independent clan, known as an 'eissie' shall see the case. [KI15, male-2, 61 years old, Mille area]

Power transformation and decision-making process: This study found that a clan's leader authority transformation occurs

through family lineage (*hereditary*). Thus, the authoritative power is not always out of the family lineage. For this, there are three reasons; the first one is that for functioning and administering the leadership status, the procedures continue from early periods from great grandfathers (*inherited*); the second is that the society at large believes that the clan family lineage, through administering the group, acquire better administrative skills, experience, practising customary law and coordinating the members within that family lineage and it works in continuity functioning and fulfilling various responsibilities since early periods of each clan history; there is a belief that if the power of clan head authority becomes out of family line, it may results conflict. the decisions of *kedoo Council* (like a parliament) members are crucially important in deciding, drafting, and implementing principles from every social, economic and political perspective. For instance, a *kedoo council* consists of members like *kedoo abba* or *makabantu* (main clan head), *dalah-abobti* (sub-clan heads), and *barroh-(reesi) eidola* (clan's elder and community leaders). As a witness, one of the interviewees remarked on the process of power transfer as follows:

Power transfer through hereditary lines cannot affect the administrative and hierarchical division of tasks within the clan social structure. This is why managing court levels and administering processes are always accomplished with the collective accountability of all clan members. Even the works have been done in collaboration with baroh-eidola (those considered and accepted as knowledgeable and experienced elders). Furthermore, clan power accessibility through family lineage is already confirmed by customary law practices (as a constitutional monarchy). [KI20, male-1, 69 years old, Dubti area]

In any phenomenon, more than one clan leader would gather, consult, and pass decisions accordingly. It should be clear that the council members are knowledgeable, experienced, and more familiar with the livelihood conditions of the people and even have decided, in many cases, based on *maa'da* customary law practices. Participant clan heads stated that there are no situations out of their control. Therefore, they can list and prepare principles according to the phenomenon's time, place, and conditions. For details of the controlling process, one of the key informants firmly stated the various phenomena as follows:

For this, the council consults issues about able-waynu (a phenomenon not previously seen), abwee-waynu (a phenomenon not previously heard), and akee-waynu (a phenomenon not previously done or occurred). Then, in this regard, the council members try to have in-depth discussions and find solutions for any problems. Then, after reaching a certain common point, they may prepare principles and rules cordially. If a clan head does not participate in a given clan council meeting, he must respect, accept, and practice the ratified decisions. [KI22, male-3, 52 years old, Dubti area]

As a result, working in such an authoritative power-holding system may have many benefits, such as keeping the cultural values and norms of the larger social groups and helping to strengthen their ties. Thus, *kedoo's* internal hierarchies and administration systems portrayed the social connections and network ties of the Afar society.

However, different writers wrote about adverse clan functions and aimed to exacerbate narrow thinking and marginalize other social groups. Town residents mostly disregard the parts of the clan. This emanates from different perspectives, such as misunderstanding in society resulting from collective clan groups and not understanding cooperative agreement resulting in collective acceptance. Even government and

stakeholder interventions seem very insignificant and thereby miss creating possible links with the clan's contribution to the nation-state building process, except for using clan as political instruments. On the other hand, among FGD participants, one expressed the importance of clan-based social process in detail as follows:

Clans established widely and broadly to strengthen collective accountability and, on the other hand, contribute more to socioeconomic reciprocities and proximate the social interactions among members. To solve problems collectively and create opportunities to utilize different resources through mutual assistance, thereby increasing the dissemination of information from place to place through effective communication (*dagu*) based on agreement. Thus, the functions of these clan-based social institutions have been serving for many centuries. [FGD3, male-6, 48 years old, Logya-Samara area]

Fiimma administrative hierarchy

Youth group functions: KIIs, FGDs, and situational observations were examined to determine how being a member of the age-bounded youth group benefited the members and the society within the functions of the social structure and how their functions were essential for their daily lives. Hence, the study discovered that *Fiimma* is the other administrative structure. *Fiimma* group members are *age-based generation* and transition activity-sharing institutions. *Fiimma* is a philosophy of "*one for all, all for one*" interdependence that reflects all responsibilities and shares with a generation. It is formed by participating in different games, and the chosen play category can support future *Fiimma* group members. Age group is one of the main criteria used to nominate *Fiimma* members in different age categories. Playing games is the best stage for *Fiimma* leaders to select or nominate strong and active youths.

The *Fiimma* group has its institutions, such as *burra-merra*, the first school within the community to begin to teach kids and youths. Neighbourhoods, villages, communities, and societies also teach lessons to young people. Supporting this, one of the participants stated how children and youth acquire learning through the socialization process as follows:

Children and young people learn from society without recognizing it, and they learn and educate themselves. Afar society believes people can learn and study from the socialization process without even involving themselves in formal education. [FGD4, male-8, 42 years old, Mille area]

Gender roles: This study discovered that *Miisila* is the other *Fiimma* institution that teaches and socializes youths about power, authority, dominance, society status, maturity, social belongingness, and social well-being. About the overall issues the institution teaches to youth, one of the participants elaborated the following:

It involves myths concerning people who break customary law and cultural norms, create issues and insecurity, establish and engage in ethical manners and discussions, whistleblowers, self-determination, decision-making skills, promises, gender-based views, etc. Therefore, such a community-based learning system improves members' interpersonal ties, communication skills and cooperation capabilities. [KI22, male-3, 52 years old, Dubti area]

Gender-based Fiimma groups are available to consider, respect, and connect natural gender behaviours, sociocultural work divisions, and responsibilities and are expected to train members while they grow. *Fiimma* group members are *age-based*

generation and transition activity-sharing institutions that contribute to society through military service, developmental endeavours, public holidays and events, upholding customs, maintaining peace and security, preventing crime, helping the less fortunate, maintaining social protection, and other duties. All Afar pastoralists' social relationships, cultural values, customary law, and other interactions closely connect with Muslim religious doctrine. Most pastoralists choose Fimma groupings due to their compatibility with their religious dogma. At this juncture, the overall responsibilities are accomplished with *volunteerism*. This view is supported by another participant who stated:

Thus, all duties are accomplished through volunteerism and open participation. In short, when travelling long distances in searching for pasture lands and water for livestock, all clan members are not expected to move; instead, some are arranged for this purpose (mainly Fimma groups). The groups are nominated by elders in a spirit of trust and accountability. If security problems appear, some groups fulfil this duty of defending and protecting. The volunteers are selected based on family trust, elders' choices, and religious leaders' approvals. Work divisions are the major categories in fulfilling responsibilities. [FGD4, male-9, 48 years old, Mille area]

This study discovered that, ironically, the gathered data from Fimma group representatives indicate that forest areas and restricted grazing lands (*desso*) are protected by the nominated youths. Any violation of the rules, either cutting trees or animals trespassing into restricted areas, is reported by the leader of the group (*fimma abba*) to the traditional judge (*dinto*), who decides on the severity and type of punishment and fines to be imposed on the perpetrators. Concerning the youth group's basic duties, one of the research participants outlined that:

Often Fimma groups have delegated the responsibility of keeping the rules of social relations and performing different tasks, as devised by the clan leaders, Makaban. Hence, the four Fimma groups, for instance, in the lower valley areas of Dubti, Asaita, and Afambo are Galli Merra (camel rearing), Kadda Burra (cattle rearing), Dala Himera (cattle rearing) and Dermo Merra (cattle rearing). [KI6, male-3, 65 years old, Asaita area]

Regarding the internal hierarchies, each Fimma group has its own structures and leaders, with *Fimmet Abba* representing the highest hierarchy. *Fimmet-Sheki* is the religious father, and *Kedoo Abobti* grants the clan and its members the highest authoritative power. As far as the lifespan and nature of Fimma membership are concerned, one of the FGD participants firmly stated the following:

The fimma group is inclusive and consists of members from different clan groups, and unless incompetence is discovered, leaders serve until death. Fimma clan membership is not deliberately changeable but for persuasive reasons like permanent change of settlement area and death. Thus, Afar pastoralists preserve tight living values due to the need for skills and knowledge of pastoral livelihoods. Fimma is the administrative hierarchy that oversees and manages tasks in a clan or community. [FGD6, male-1, 36 years old, Dubti area]

The Sultan (amoita or derder)

Administrative hierarchy: FGDs and KIIs were examined to determine how the sultanate established and administered the Afar society. The Afar people's internal social structure and administrative hierarchies influence their social, cultural,

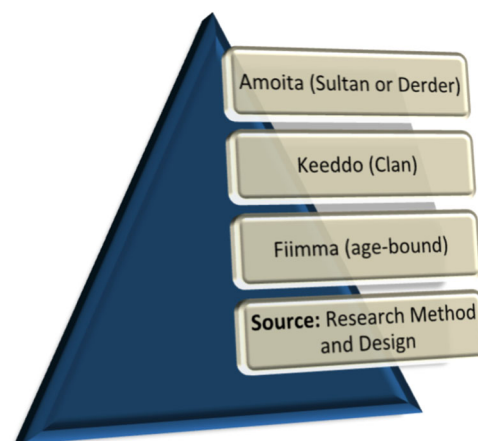


Fig. 4 Administrative Hierarchies of Afar People. Source: research method and design.

economic, and traditional laws. Accordingly, the *sultan* is at the apex of the administrative chain (Fig. 4).

Higher authority different nomenclature: Participants in the study collectively claimed that the authority names the Sultanate called different names. In this instance, *amoita and derder* are official names that many sultanates have alternately used at various times and locations. For instance, *derder and amoita*, which Awsa and Birru Sultanates employed as equally as the *Sultan* and used by Tajoura and Rhaetia Sultanates in Djibouti, respectively. Because of their geographical location, the Sultanates' hierarchical administrative systems and organizational structures depend more on the historical contexts and customary practices. The Sultan Council consists of members like those who are at a mature stage and have high consultation skills with elders and religious leaders. So, this council can design, implement, and adjust its proclamations, principles, rules, and procedures. Especially at administration levels, the proclamations, principles, and rules have been assumed to play great roles in managing the socioeconomic issues of society at large. Furthermore, one of the key informant participants stated the sultan council section:

The Sultan (sengera-royal/owners of the authority), benoyta (vice or heir of the sultanate), mulukti (sub-sector administrators or heads), ressie (baroh)-eidola (elders), kedoo abobti (different clan heads), dinni-abbobti (religious leaders or fathers); and amoiti-asker (the military wings of the sultan). [KI5, male-2, 70 years old, Asaita area]

Functions and responsibilities: This study discovered that *amoita* means *sultan*. The word *amoita* is an Afar nomenclature meaning *sultan*, which emanates from an Arabic word. It serves as alternatively. So, *amoiti-asker* means military of the Sultanate. The functions and responsibilities of the sultanate stated by one of the research participants:

Among its hierarchical and functional importance, the amoiti-asker fulfils such different tasks and responsibilities as it practices the sultan's legislative section. It plays its role in working as a police force. When external challenges and attacks occur, the first body to defend this intervention is the amoiti-asker. In general, it serves as what defense force has currently accomplished. [KI2, male-2, 80 years old, Afambo area]

Furthermore, this group can participate in public works or community development tasks, such as constructing roads, bridges, and other infrastructures. So, its internal hierarchy consists of *youth (oundanaeity)*, the close relatives of the sultanate family lineages. The criteria to be a member of the amoiti-asker group stated by one of the key informants as follows:

They could be nominated from different places and clan groups as well. To be a member of an amoiti-asker, being skilful and a community member are the primary criteria. In general, the amoiti-asker has a leader who coordinates all the tasks concerned. [KI5, male-2, 70 years old, Asaita area]

Categories and functions of customary laws

Classifications and functions: This study identified, according to the gathered primary data sources, two significant categories of Afar traditional laws, *maa'da* or *afree*, and *dintoo*, which are responsible for administering the essential ways of life, social interactions, economic reciprocities, mutual trust, norms and regulations, and customary practices among the Afars. *Maa'da* is an immediate reference to the *law*, which concerns customary laws and regulations. *Afree* is an alternate name for *maa'da*.

As far as the collective functions and administration systems are concerned, *afree* legislation governs Afar's socioeconomic relations. At the same time, *adan'le* administers and manages how Afar people interact with *Non-Afar* relatives and other social members. *Dintoo* refers to the social and organizational structures of working and interacting with *non-Afar* people. This also governs how agreements are reached and socioeconomic guiding principles are administered. In connection, one of the Dahimela clan members described the functions of customary law sections as follows:

Dintoo manages agreements and design guidelines and principles from individuals to the larger society. Along with *maa'da*, the customary law head *maa'da* abobti seems to control the social structures of the community, from the lower hierarchy, "burra" to the higher, the "Sultan." Because of this, *maa'da* abba is viewed as a legislative body overseeing the upper echelons of each social organization. [C2, male-3, 51 years old, Asaita area]

In addition, the places, representative names, and degree of punishment vary from clan to clan rather than the *maa'da*. Regarding this, one of the key informants firmly stated:

The contents and practices of *maa'da* customary law in all Afar land are not different. However, the type and kind of punishment related to the available natural resources vary. The type and amount of livestock vary according to their land use and range of land locations. Thus, the punishment considers all these conditions. Although there are five customary law categories called by different names (*burr'ili maa'da*, *budiito maa'da*, *afaakee'ekk-maa'da*, *bedooyta maa'da*, and *deebnek waaeeimih maa'da*), they have functioned as alternatives to serve the society based on their settlement patterns. [KI11, male-2, 48 years old, justice expert, Logya-samara area]

At this juncture, *maa'da (afree)* and *dintoo* administrative practices and functions are compared by one of the key informants as follows:

Adan'le would oversee how Afar people interact with relatives and other individuals in non-Afar culture. Hence, in this situation, *maa'da* law serves two purposes: the first is *afree*, which governs all socioeconomic interactions among Afars, and the second is *adan'le*, which administers and follows economic exchanges and other social

communications with Non-Afars. As a result, Adan'le is believed to have connotations for "Adam"-all humans; hence, Adan'le's customary practices allude to Afar people's interactions with the rest of Adam's family. [KI11, male-2, 48 years old, justice expert, Logya-samara area]

Managing disagreement: The Interviews were examined to determine how disagreements were settled by the cultural values that connect the society in several aspects and practices. If a disagreement occurs among members of the same *fimma* clan groups and is connected through the '*affehina*' network and '*negeltinu*' (interactions among daughters of many mothers from the same clan networks), the case is not seen by *meblo*. It is why disagreements between members from the same clan or *Fiimma* groups are resolved with punishment or through conciliation, not by dispute resolution or traditional court decision, *meblo*. Other procedures are not accepted. One of the research participants described the reasons how these cultural values have emanated from different sources of agreements or beliefs as follows:

Primarily, members from the same clan, *fimma*, *affehina*, or *negeltinu* are considered each other as relatives (like bloodline inheritances). The other reason is that the primary objective of establishing such a network is protecting, defending, and even eliminating conflicts. These procedures help to defend against external threats in a collaborative manner and mutual trust. Thus, it is believed that it is impossible to defend external enemies without controlling internal agreements. [KI16, male-3, 44 years old, Mille area]

Social relationships, cultural values, and clan network ties via traditional communication systems

The benefits: This study identified that the Afar people's hierarchical social status, cultural and economic interactions, and participation have still been achieved through effective *dagu* communication. There are three types of *dagu*. The first one is making communication when community members or visitors from other locations meet. The second occurs when a person is known to visit or go to another location. The other one is when there is a need to gather data on where there is peace and security and available rain, water, and pasture. These varieties of *dagu* are not restricted to only these instances but are based on their inherent benefits. Here, one of the research participants remarked *degu's* benefits as follows:

In *dagu*, communication issues must be included in Afar people's daily life activities and important events, such as rain, water, personal conflicts, diseases, peace and security, birth, ritual performances, etc. These are essential to avoid insecurity and assess social relationships. All of Afar society considers them to be from one family lineage. [KI13, male-7, 56 years old, Logya-samara area]

The communication process: The gathered primary data revealed that the *dagu* communication exchange process is carried out among persons. If persons meet to cross paths, they pick a comfortable spot to rest and sit while *half-kneeling* and *holding onto a stick*. If they meet at home, the guest is provided with whatever accommodations are accessible. It was discovered that when a guest appears in a village, he/she greets him/her by shaking hands; *hugging is forbidden*, and he/she is mostly given a resting place in the mosque. This is known as *ebnitu (guest)*, and the process is called *ebnitiimoo*, which means accepting and serving a guest.

Apparently, in any dagu conversation, the process starts by saying, “Peace is with you and your family!” this is the word that is used, to begin with the person who is meant to be the eldest, and added that “Given that you are the one who shares genuine knowledge, sharing information is given the highest value, as well as longer lives.” Then, if the host and guest meet after a long period of separation, they start their communication from the onset or time of separation. All events will be covered step-by-step and turn-by-turn. This view is supported by one of the research participants who said:

Dagu begins by introducing themselves with respect and asking for the traveller’s name, home and current addresses, clan group, destination, other relatives with whom he/she is staying while travelling, the reason for the trip, and other pertinent information. This is done to verify, check, and gather more data to determine if the person is a criminal. The news quickly spreads to various places (kebele, villages, or gulub) through such communication systems. Children, at the age of comprehending and understanding everything, can participate, hear, and listen to dagu’s conversation. [FGD5, male-4, 59 years old, Eli’dar area]

When treating the guest, at least delicious critical internal organs (of a cow, camel, or goat) will be separated and prepared while removing the skin. Both raw kidneys and stomachs with fatty meat will be served to the guests. For instance, one of the Hamedian Siret clan members described the guest recipient processes in detail as follows:

The Hamedian Siret clan (mainly settled in Kori, Dubti, and around Samarra) has unique guest-receiving and accommodating procedures. The guest will be invited to rest and sit on a material made from animal skin, which is prepared like soft and comfortable cloth [mostly considered very expensive as well] known as “Woollo.” After a while, water and food will be given, animal meat being the most recommended. If not, the invitation will not be considered. If the guest is an elder, religious father, or clan leader, the invitation is called “Sedeka”, and if it is an ordinary person, it is referred to as “loggi.” The Modaitu clan also practices the same procedure. [C3, male-4, 68 years old, Logya-Samara area]

Communicators who meet in structurally equivalent positions often have similar characteristics. This makes them more likely to receive/deliver information similarly or with social influences. Afar’s people use social communication as a central mechanism for communication and social relations processes. At the same

time, *dagu* is associated with being influenced in specific domains due to personality traits, status, demographics, clan or kinship lineage, and socioeconomic backgrounds.

The phrase “Hayee or Ehee” confirms that the listener is paying attention and internalizing what is being spoken accurately. It is meant to imply that the guest must thoroughly explain “the location and sources of what he/she saw and heard.” The receiver responds, “Hayee...Hayee...Eheee....Ehee,” and the narration continues. The receiver must transmit the information to each recipient without altering any of the message’s or information’s contents. When errors or mistakes are found, a *source-based inquiry* is conducted. Besides, one of the research participants stated misleading information and the consequences of exchanging messages as follows:

Revealing information that puts at risk the security of the nation, the public, or even a clan, the customary law puts one in jail. For example, suppose someone divulges information regarding rain, water, or pasture that is not present or available while peace and conflict are present. In that case, he will be penalized since the others realize that their knowledge may hinder efforts to find pasture and water for cattle. Therefore, the two sides must have equal weight and contributions while exchanging information from a social networking analysis perspective. [KI11, male-2, 48 years old, Logya-samara area]

Network ties and communication flows: This study discovered that people may have much influence in the communication network sector not only because they have particular qualities but also because they are situated in networks that allow them to distribute and receive information and exercise personal influence efficiently. As a result, in *dagu* communication, *centrality measures* would undoubtedly help identify what information contents carry more about every person’s status based on their location in the network system. In addition to *contact frequency*, various characteristics, including the length of engagement, the effort people put into a connection, and the *degree* to which the social ties generate reciprocal benefit, also determine the strength of social relationships.

According to the qualitatively assumed network structure shown in Fig. 5 above, there are intersection points that depict clan members’ connections through *dagu*. This is the common network area for exchanging social participation events, economic reciprocities, information, and mutual influences.

Here, it is identified that in the *dagu* communication system, *degree centrality measures* links or connections to and from an

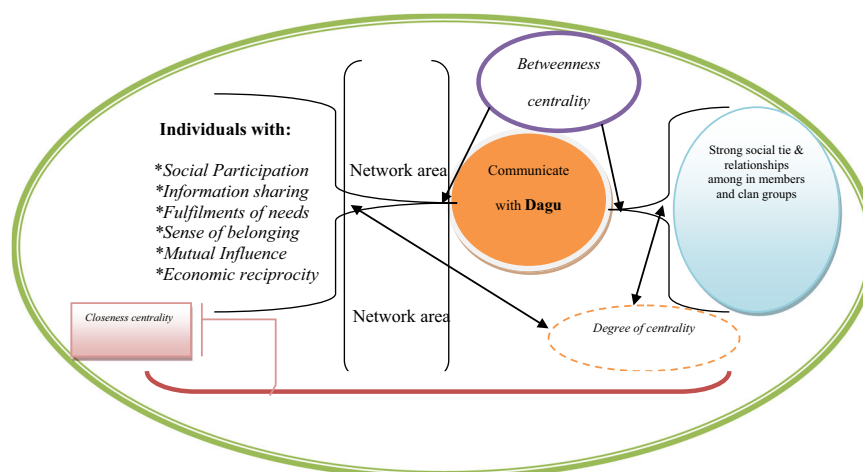


Fig. 5 Social relation variables, social network ties and communication flow. Source: research method and design.

individual in a clan group and individual clan members within a clan network. Individuals with a high degree of centrality are likelier to be near the information (*as the arrow line within the oval direction to communicate and share tendencies depicts*). Betweenness centrality measures the frequency at which an individual lies on the shortest path connecting other members in any possible direction in the network. One of the key informants outlined the link and how it works when clan groups communicate as follows:

Individuals with high betweenness centrality are likelier to serve as bridges in the network through dagu communication. Furthermore, closeness centrality measures the average distance [as the red bounded line depicts] between an individual from another group of clusters within the clan territory (the outside oval shape represents) and all other members in the clan group communication network. [FGD3, male-3, 45 years old, Logya-samara area]

At this juncture, it was discovered that more social ties in the Afar context could mean more significant opportunities to receive and disseminate information within each level or social unit of the social structure.

Cultural value and traditional social network practices: The interviews and FGD results indicated that the social relation process can be established from individual levels (*aallaa*), family (*onee oree*), gender-based relation (*nonegelta* or *negeltinu*), and clan group level (*affehina* and *tehaluf*). *Aallaa* is a culture of establishing connections among individuals to have close relationships. *Aalla* or *hindda* is a relationship created among individuals that can be initiated by asking someone to be a close friend. An FGD participant about the connection stated:

If there is a disagreement before saying *Aalla*, the friendship interaction can start after the conversation. The presence of witnesses is mandatory to ensure clear and accessible interactions. [FGD6, male-5, 57 years old, Dubti area]

Onee Oree is the practice that prefers to create a relationship with another family or person. It involves giving water to the newborn baby before milk. The person who gives the water must not be a family member but someone chosen for new relationships. About the process, one of the Hassoba clan members described the scenario as follows:

The water is prepared when a mother is ready to give birth, and dates, honey, or milk are used as alternative inputs. In this context, this social relationship is conducted to fulfil three basic criteria. The first one is a welcome notification for a bay. The second is wishing the baby to develop good behaviour, character, and manners. The last one is to be called by the name of a chosen or symbolic person. This culture is still practised in Afar, where a chosen person is preferred to maintain relationships. [C4, male-4, 64 years old, Mille area]

Nonegelta or *Negeltinu* is a relationship between mothers and their daughters within a clan, where they are expected to be cooperative, interactive, and mutually respectful. If they disagree with the process of interactions, the family does not intervene; instead, they are expected to solve it by themselves.

In line with the above cultural practices, while conducting field visits, some cultural practices were observed and participated in, such as weddings, condolences, market, and economic reciprocity events; keeping animals in pasture areas (*desso*); serving water for cattle from ponds (*deera*) and groundwater holes (*aella*); birth ceremonies; public praying (*duu'qaa*); and annual religious festivity (*sada'qa*); and also conducting non-participant

observation on the overall situations that appeared in the research sites during the field visit periods. It implies that customary law and clan networks work in dispute resolution tasks and facilitate, govern, manage, and coordinate how social interactions will be performed. So, the benefits of networking rely on socioeconomic reciprocities, support, and becoming a solution for problems.

The study explored the central traditional networking system. The one is *affehina*. It is a cultural practice that initiates family relationships and networks among different clan groups. It is one of the mechanisms to establish socioeconomic interactions and reciprocities. Most research participants believe such interaction should prevent upcoming conflicts. In line with this, the overall benefits of the *Affehina* network described by one of the key informants as follows:

Affehina social network can be established among two or more clan groups out of bloodline relatives' cases. If clan groups are networked in this way, they are supposed to support each other from any socioeconomic perspective. In this case, a member may not provide support or reciprocity to his clan but may be forced to reciprocate with a clan that has been established through *affehina* networks. In *affehina*, marriage is forbidden because the relationship is duly considered a bloodline relationship. Very close interactions, mutual trust, respect, rehabilitation, and other connectivity are respected and expected more from both sides. This interaction may not support *burra*, *dahala*, and *kedoo*, but the relationship is powerful individually. In any way, a relationship among individuals will also be established at the *burra*, *dahala*, and *kedoo* levels. In turn, this would strengthen clan groups' networks as well. [KI3, male-3, 66 years old, Afambo area]

Affehina interaction highlights the bridging function of solid ties and clan heads' and members' abilities to strengthen their social connections. In this kind of interaction, clan chiefs play essential roles in the administration of economic reciprocities and in resolving disputes between clans. According to one of the interviewees of the Dahimela clan group:

The strength of strong ties is determined by the number of connections among clan members and their ability to reach a broader and potentially more convincing set of information and sharing sources. In addition, the *affehina* network provides safety for members while they travel through various escarpments in searching for water, pasture, and other resources for household purposes. [KI2, male-2, 80 years old, Afambo area]

Ironically, various clans in settlements belong to a significant clan group network that is indirectly connected to the different sub-clan groups. According to the data gathered, clan groups descended from Arab lineages, such as *Dahimela* (*Bedoita-mela*), *Kuleya*, *Ankela*, *Hassoba*, *Beedal*, *Maandita*, *Hadermo*, *Beluee-sewa*, and others, are supposed to have the above competitive social relationship advantages. In addition, historically, and even currently, there are ancient Afar clan groups in the Afambo area, under the Awsi-Rasu administrative council, like *Eindi-galo*, *Kuleya*, *Eingalo*, *Ankatto*, *Einteger*, *Harela*, *Dobaaa*, *Bayrikoo*, and *Derder*, which have been connected through the *affehina* ties. For detail, one of the Bayro'oo clan members about the clan-to-clan interactions outlined the following:

I am from the Kolomera prominent clan, Beyro'oo sub-clan, in the border area. The same clan groups are also found in Djibouti. They are in better living conditions economically; they own cars, houses, and other properties.

We are all from the same clan lineage, although the nation's interventions in different political philosophies affect some of our connections at border areas. [C1, male-2, 29 years old, Afambo-Mogorro area]

The other type of traditional social networking practice is *tehaluf*. It is the connection through networking among clan groups to support each other during problems arising from territorial and border disagreements. As one of the key informants elaborated on the connection type:

This *tehaluf* essentially meant an agreement to stand together as one strong clan family with solid networks of helping each other during quarrelling because of territorial claims. [KI6, male-3, 65 years old, Asaita area]

Regarding this, one of the FGD participants recounted how this type of networking helps to fulfil collective accountability (Fig. 6):

This networking tie aims to withstand, defend, and protect if one of the clan groups faces an attack, mainly in case of territorial or border claims. Although each clan administered through *tehaluf* commonly fulfils collective accountability, they practice their clan structure and foundations of the establishment. Thus, all acts under the rule of *tehaluf*. For instance, 'Dibni' and 'Woima,' 'Dahimela' and 'Segento,' 'Geleela' and 'Kebriti' and other clan groups can exemplify such practices. [FGD2, male-6, 69 years old, Asaita area]

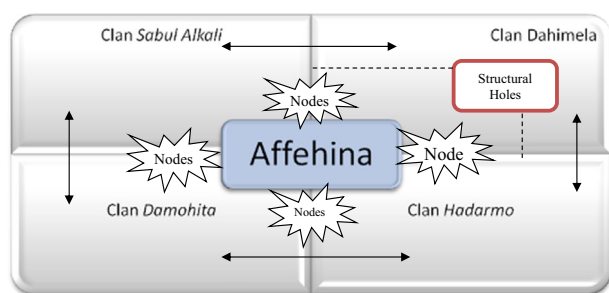


Fig. 6 Affehina networks among clan groups. The figure depicts the affehina traditional networks among clan groups. In this figure, a structural balance, structural hole, triads of relations and network ties are indicated on lines and directions which bases the traditional communication among different clan groups in the lower Awash valley zone.

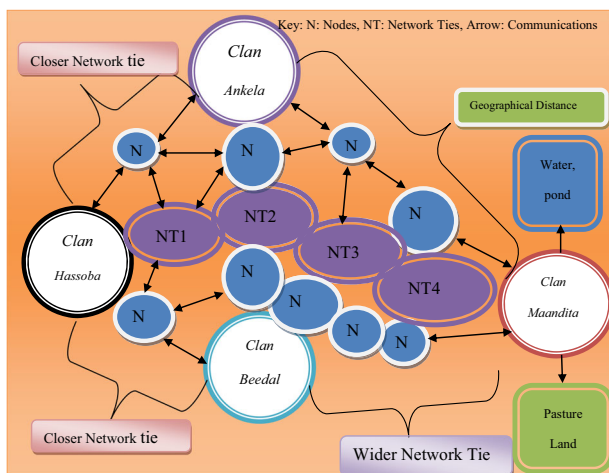


Fig. 7 Networking ties and geographical distances. Source: research method and design.

This study identified and made to connect the results with the stated theoretical perspectives. Social networking analysis maps and measures relationships, flows between people, groups, organizations, or other information or knowledge-processing entities. It refers to any network of people known as nodes connected through associations or connections. As Fig. 7 below depicts, a conjunction point (*black double arrow line*) that represents a clan member's attitude towards other clan groups, reciprocity, or social interactions within their clan group network (*affehina*). Within a clan, each member is subjected to a reciprocate set of activities, such as conducting social relationships, helping each other during marriage (*harraynaa kurraa*), and sharing available resources in emergencies (*edebbontaa*). The clan heads are responsible for the clan's integrity and individual well-being. This is similar to how a clan connects its members, or a clan union creates an assembly.

It is vital to see a structural balance of clan networks because at least one clan has one Affehina network. From examining triads of relations, for instance, among the above four clans' heads and members, it can be readily seen that some triads are balanced because of the Affehina network. If Clan Sabul Alkali members communicate with Clan Dahimela, Clan Dahimela members and heads interact with Clan Bedoiti, and Hadarmo interacts with Damohita, the triad is balanced; if Clan Sabul Alkali members interact with Clan Damohita, the same connection is becoming balanced.

Furthermore, *structural holes* are the gaps in a network pattern and provide entrepreneurial opportunities for those in the existing pattern to move into and exploit, as the red bound in Dahimela clan territory (*a person with an administrative or political post*) indicates, and the dotted lines exemplify the gap (*disconnection*) in the network. At this juncture, one of the research participants outlined the issues in brief as follows:

Suppose one of the clan members, who is supposed to have an administrative post and political authority, can provide additional support to his respective clan members. In that case, it may provide insights into society. However, as well as being known by social groups, it does not mean that the prominent social structure constrains his interests. [FGD3, male-3, 45 years old, Logya-samara area]

Spatial network dynamics: Geographical proximity and distances, communication speed, time, and skills affect clan network ties and information exchange. As Fig. 7 below depicts, network ties concentration, represented as NT 1, NT 2, NT3, and NT4, facilitates easy communication processes. Nodes, or communicators, play a crucial role in supporting the flow of essential messages to wider social groups.

Geographical distance impacts communication flow and network ties. The gathered data confirm that the gaps in social interactions and clan network ties would be filled by 'dagu' speed, which refers to the distance messages reach network areas. Node participation fills the communication gap, regardless of the clan group's proximity. For example, the network ties among Ankala, Hassoba, Beedal, and Maandita maintain structural equivalency due to high network flows in the Network Ties (NT) of 1, 2, 3, and 4 network areas. As shown in Fig. 7 above, the network consists of multiple nodes and structural equivalence among Ankala, Hassoba, Beedal, and Maandita, with a sparse and more comprehensive network structure. Hence, information concentrates adequately on NT 1 and NT 2. The average distance between individuals from different clusters within the clan territory and all network members reveals the closeness centrality measures. In this network tie process, a communication gap may

occur. As to one of the participants, this limitation can be recovered through different mechanisms, such as:

The dagu communication process can recover communication gaps caused by distant settlements, contributing to balancing social structure and maintaining the interactions. [KI13, male-7, 56 years old, Logya-samara area]

Based on the gathered data and analysis made on it and the qualitatively grounded network map, the black double-head arrows in Fig. 7 above disclose the socioeconomic reciprocities and network ties between different clans through nodes (elders, youth leaders, administrators, and clan heads). The importance of node communication counted by one of the participants:

When this occurs, the overall link becomes highly significant regarding proximity, sharing of resources, and utilization by rules and management practices for resource use (faggee). The procedures of customary law govern and administer the overall function of members in the social structure. [KI16, male-3, 44 years old, Mille area]

Two main effects (dynamics) of spatial network flows appear to have been noticed in the interactions, network process, and clan cohesion of members following changes in settlement patterns, seasonal mobility, and environmental hazards. Initially, a few clan members, such as women, older people, and children, for example, might stay. These trends possibly affect socioeconomic reciprocity proximities as well as network ties. For instance, as Fig. 7 shows, having the geographical distances of proximities matter, Hassoba with Ankala, Ankala with Beedal, and Ankala with Maandita would have relatively best member interactions. Similarly, Hassoba with Beedal and Beedal with Maandita interact more likely than Beedal connects with Hassoba, Ankala, and Maandita. However, Hassoba with Maandita would have had less likely interactions, either socially or economically, with very wide proximity had there not been the challenge that could have been solved by the *affehina* and *tehaluf* clan network tie process. The reason was that at least one clan had an *Affehina* connection with another clan group.

Challenges that affect the functions of social structure

Accessing limited resources and drought: After determining the KIIs and focused group discussion information, this study discovered that the Afar pastoralists have strong social organizations and leadership, organizing to manage herds, control access to communal grazing areas, manage water for livestock, and provide security. This organization is crucial for the socioeconomic development of society in utilizing scarce resources. At this connection, one of the pastoral livelihood experts remarked:

Pastoralism is crucial for the Afar people, who comprise the smallest of Ethiopia's land masses. They consume at least half of their total value of marketed and subsistence production from livestock. Raising livestock is the most practical way to utilize limited biomass resources, as Afar pastoral areas are less suitable for crop farming. Pastoralism contributes to preserving and protecting these resources, as the society is the custodian of critical national resources in arid and semi-arid regions. [KI6, male-3, 65 years old, Asaita area]

On the other hand, Afar pastoralists are becoming more and more vulnerable due to changing demographics, protracted conflicts, decreased access to grazing land and water, and, in some areas, climatic changes. Most FGD participants outlined in common the challenges that the Afar society exposed. For a better understanding of the situation, the significant reasons are enumerated by one of the FGD participants in brief as follows:

The drought worsens, leading to hunger and poverty in certain areas. This is exacerbated by pastoralists' limited political representation in decision-making and geographical isolation from political and economic centres. The belief that their hardships are self-inflicted due to traditional lifestyles contributes to overlooking their suffering. [FGD3, male-3, 45 years old, Logya-samara area]

State border divisions and urbanization: Participants in the study claimed that the Afar society, divided into three Horn African nations, is impacted by geographical, economic, social, and behavioural changes due to the growth of urbanization. This view is supported by another research participant who said:

The pastoralists' livelihoods depend on livestock production and seasonal mobility to cope with the impacts of climate change. However, urbanization, rural-to-urban migration, and the expansions of mechanized farming, and service industries have disintegrated pastoralist clan integration, social structure, and network ties. Even, when youths migrate to urban areas, older people are exposed to household burdens. [KI6, male-3, 65 years old, Asaita area]

At this juncture, this study discovered that the Lower Awash Valley, a semi-arid climate with fertile soils, rivers, streams, and urban centres, is a developed area in the Afar region. Due to its proximity to Djibouti and large pastures, it has been a hub for pastoralists and herders since ancient times. This has led to the growth of small cities, expanded infrastructure, and changes in population settlement patterns. Positive impacts include increased diversity, intercultural communication, and socio-cultural dynamics. One of the research participants, about the negative side of the expansion of urbanization, stated firmly as follows:

However, the impact of urbanization can have negative implications. It would include disturbed pastoral mood, weakening clan cohesion, dispersed settlement patterns, loss of socioeconomic reciprocities and proximities, burdens on elders due to youth migration, remote desert territories, and weak social networks. To compare the impacts, the situation can be seen in two phases. The one is before the prevalence of such dynamics, when the socioeconomic interactions were not disturbed. The other one is that after the socioeconomic, geographical and environmental dynamics occur, the social cohesions and livelihood status of the community are exposed to various venerable situations. [KI13, male-7, 56 years old, Logya-samara area]

Discussion

Theoretical and conceptual framework

Social structure and social unit: theoretical underpins with comparative perspectives. Scholars have debated and studied social structure concepts, meanings, elements, and characteristics. This literature focuses on its importance in exploring relationships among individuals and groups at social organization levels, identifying relations among people, and investigating connections among categories and cultural forms. The conception of social structure influenced the development of both *Systems theory* and *Structuralism* schools of thought.

In the context of social science, systems theory explores how societies remain stable and functioning as their constituent parts cooperate and adapt to one another. Here, system theory had effects on notions of social structure. Talcott Parsons (1951) first popularized a systems approach to studying social structure in *The Social System*. He tended to propose subsystems that were

defined *wholly functionally* and not structurally. To the extent that such systems thinking were taken seriously, it tended to lessen interest in social structure.

Further divergence of systems and structural thinking came with the work of Luhmann, who developed a rival approach to systems theory whose core is communication rather than action. He stated, “*Humans are not coordinated into action systems but systems of observing and sense-making. Actors confront an external environment in which massive amounts of information circulate, as they observe, select out, and make sense of, bits of information, the system is constituted*” (Luhmann, 1996, p.24). The observer of the environment distinguishes between themselves and the environment. This act of distinction brings them into being. Concerning this, Luhmann argued that:

“What is essential for us are three points: first, the components here are acts of communication, not social relationships. Second, there is self-organization (autopoiesis) in this set of communications that may be largely decoupled from the needs of organic individuals. Third, such systems are more than a mere analytical tool that elucidates societal processes; rather, ‘systems exist’” (Luhmann, 1996, p.12).

Although Luhmann did argue that the significant social subsystems corresponded to well-understood realms (*which he successively explored: law, art, politics, religion, economy, and education*), there should be an argument prepared for the functionality of the subsystems that are potentially deviated from needs of individuals and even from the role structure (Martin and Lee, 2015). At this point, in the works of Luhmann, the roles of individuals in the functioning of the social structure did not get a place to argue more on social relationships either among individual actors or the functioning of social groups. Therefore, the influence of *system theory* on the structure of society seems to diverge from the reality of social interactions and the importance of individual actions on the functioning of *social structure* from many perspectives.

In many ways, the other school of thought, the structuralism tradition, branched off from Comte and Durkheim. However, it is generally understood to have originated with the structural linguistics of According to Martin & Lee,

“.....in all cases, structuralism proposed two types of relations (syntax/system, metonymy/metaphor, affine/cognate) that, brought into the realm of social structure, suggested attention both to empirical relations of interaction (on the one hand) and relations of structural equivalence – functional substitutability (on the other).” (Martin and Lee, 2015, p.25)

On the other hand, Claude Levi-Strauss (1969) applied these structuralist principles to the study of social structure in *The Elementary Structures of Kinship*. So, Levi-Strauss examined the structural logic that organizes complex patterns of kin relationships by understanding them as formal laws of transfers (*as a marriage may be seen as the transfer of a daughter (or son) from one lineage to another*). Levi-Strauss went on to focus on *cognitive* structures, but the encouraging results of this work on kinship led to a shared enthusiasm for ‘*structure*’ in the *social sense*. At this juncture, there were relatively few rigorously structuralist approaches to social structure, but for the case of this literature, let us examine the following selected works.

Social structure is a concept used to capture the collective properties of social entities, identify their characteristics, and specify the relationships among their component elements. It is widely considered one of the most essential concepts in the social sciences, a particularly central concept in sociology, and

important in other social sciences. However, writing on the social structure has been scattered, piecemeal, and not particularly cumulative. Strangely, social theorists have been reticent in making their social structure analyses more explicit (Callinicos, 2007; Wallerstein, 2004). As Crothers (2010) summarizes, there are at least four *primordial images* of social structure, which have to be somewhat separately attended to, although for adequate understanding, each must be evoked, such as *Social Organization* (as social structure is the concrete relations among concrete individuals and concrete groups, e.g., Networks), *Social Background Characteristics* (as social structure is the relations among people sharing the same social background characteristics, or differing in terms of social background characteristics), *Institutional Structures* (as social structure is the relations among people, categories, etc. laid down by ongoing organizations and cultural forms), and *Underlying (Deep) Social Structures* (in which social structures exist (somewhat irrespective of the actions of those ‘carrying’ them) at more profound (and more abstract) levels).

This study conceptualized social structure to explore relationships among individuals and social groups of Afar society, such as clan members, communities and social interaction processes within the social structure. In the structure, the social units follow the sequence and build up from a foundation towards higher levels of organization. This hierarchy has been carefully developed, and each of the social unit levels has particular properties that separate it from those lying at other levels in the hierarchy (Crozers, 2012; Easterly et al. 2006).

At each of these levels, the social unit focused on has ‘*internal*’ and ‘*external*’ features: the elements that make it up and its relationships to other units within which it is contextualized. In a network approach, which is a major way of investigating the latter issue, relations between nodes are studied, not the characteristics of nodes themselves. Network linkages within any social entity (e.g., *between individuals, social organizations, or clan groups*) are possible. This interest in relations can be taken to follow approaches looking at characteristics of social entities (*because someone needs to know something about ‘x’ and about ‘y’ before they examine their relationship*). It is important to note that the various levels do not neatly (*at least not necessarily*) nest within each other in a linked-up hierarchy. “Social structures at various levels cross-cut and interweave and may (or may not) have any connection with others operating at different scales or with different trajectories” (Crozers, 2012, p.5). However, network analysis is seen as the study of relationships among people, social groups and then the relations amongst any social unit, as it has been depicted more in this literature.

Afar clan groups ancestors and social structure. About the population pattern and how they are evolving, the Afar clan ancestors have a connection with Arab migrants. There are different reasons why the Arabs were forced to migrate to Afar land. The first was to live a better life. There are assumptions that these migrants came a long time ago and laid the foundations for the current Afar people. The second reason was to disseminate Muslim religious doctrine. These migrants were settled in Awsa, Dahilak, on Zeila and the Red Sea coasts. The last speculation was to escape from the cruel administration of the then Yemeni governors (Jamaladin, 2015, p.45–49). In line with this, the two genealogical maps provided below indicate the Afar clans’ ancestors who were divided into two groups, originating from *Yemeni Arabs* and their *original Afar ancestors* (Fig. 8).

The *Hadal Mahis* clan has taken over three-fourths of administrative posts and political authority and is considered Afar’s “greatest” royal clan group. All those Afar sultanates who took power after the 17th century were from this clan lineage

(Habib, 2019). The *Dahimela* clan is categorized as part of the *Hadal Mahis* clan lineage, including those settled in Awsa, Awsi-Rasu zone. In addition, the *Ankala* clan, administered by *Humed Alkali*, migrated from the Arabian Peninsula and claimed that their ancestors were the first to arrive in *Afar* land. Furthermore, the *Geninto* clan, from the *Abdalgeni Al Sedik* family, settled in *Afar* land (Jamaladin, 2015, p.45–49) (Fig. 9).

Politically, *Afar's* territory is divided into seven sub-clans for the north (*Danakil*), under the theoretical suzerainty of *Birru* (*Damohita* clans group); and other ruling clans are the *Mogorro*, linked to the *Asabakeri* (*Assayamara*); the *Dahimela* in the *Danakil* depression; and the *Bel'Oossuwa*, both belonging to the *Adoyamara* group (Piguet, 2001). In the South, there are at least twelve sub-clans. Half of the territory belongs to the sultanate of Awsa. It has been ruled by the *Modaitu* group, which constitutes a federation of clans with the *Aba Koroita* or *Asabakeri* and the *Arapta* on the western periphery, the *Afke Ek Maa'da* as central occupants, and the *Adali Aeroita* on the southern periphery (Cossins, 1973, p.17 in Piguet, 2001).

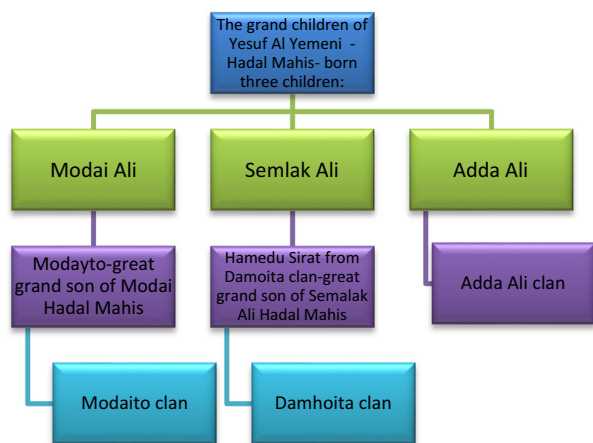


Fig. 8 Arab ancestor clan groups. Source: Habib (2018:24).

Many argue that clan-based institutional arrangements administer the *Afar* people. During the reign of *Hadal Mahis*, all clans were allowed to take and fulfil individual and collective responsibilities (Habib, 2019, p.266). At times during field visits, the key informant and FGD participants believed that the tradition of superiority and dominance would always have been maintained by the royal *Idu Hissu* (*Adahisu*) clan family of the *Afek' Ek Ma'd* clan within the *Assayamara* ancestral group. Although the *Afar* society was divided into three-nation-states of the horn, the customary practices of Sultanate coronation took place in Ethiopia, Asaita Palace. For instance, recently, the ceremony to coronate Ahmed Ali Mirah Anfre, as the 15th sultanate of *Afar*, took place on March 13, 2023, in Asaita. Participants, clan leaders, elders, and others were cordially invited from Eritrea and Djibouti.

The social problems faced by *Afars* in Horn African nations are attributed to colonialism's socioeconomic changes, including inter-clan conflicts, erosion of traditional values, and illicit trade routes (Tadesse and Yonas, 2007). Despite these challenges, some claim their relationships continue due to shared values and cultures. However, how they functioned is not well explored. Thus, this study examines the factors taking the social capital and social structure models to understand the *Afar* society's social hierarchies and clan networks. Social capital considers geopolitical, socioeconomic, and environmental factors, while the social structure pyramid assesses social relationships between different social groups.

Social network theory and social network analysis: concepts and approaches. The social network theory emphasizes the importance of interpersonal relationships and interaction. Numerous fields of social science study fields, including criminology, anthropology, business, psychology, and sociology, have extensively used it. The definition may alter depending on how it is viewed. It may be a platform for enforcing social norms in close relationships where significant others can impose sanctions. In terms of defining the type, degree, and type of social support necessary to develop social capital among groupings, the exchange of goods and services between connected individuals within a social group may be called the social network. Many

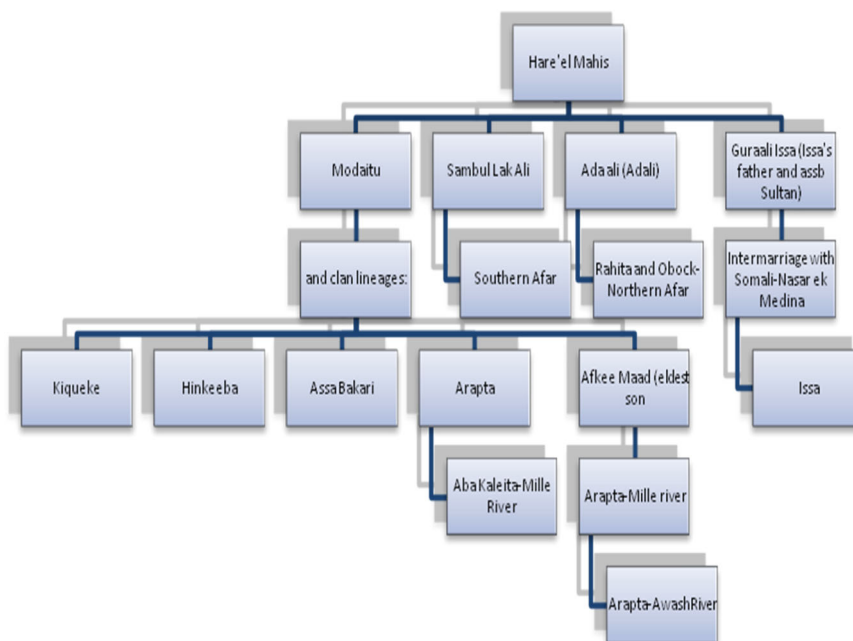


Fig. 9 Afar ancestors-assayamara eponomic genealogy. Source: Cossins (1973:10) in Piaguet (2001:30).

research traditions have influenced the current state of social network theory. Several studies looked at the impact of social networks on the interactions between parents (Lois, 2016), on fertility (Bernardi and Klarner, 2014), in the science of social work (Rice and Yoshioka-Maxwell, 2015), in gender roles (Ma, 2022). Its analyses are used to find patterns in social networks. Other researchers have also concentrated on figuring out what influences the structural balances of network relationships and what other societal barriers play in these processes.

Social network analysis is a cutting-edge paradigm for social science research and a vital instrument for comprehending social structure. This method in social network theory can be used to gauge how players interact in social networks. Thus, some network ideas, such as *centrality*, *density*, *structural hole*, and *clustering coefficient*, are the primary measurements used to evaluate the network relationships, contents and interactions among social groups. In other words, a symbiotic relationship between people and content is used to find each other (Crothers, 2010). Social network analysis emphasizes the significance of structure in describing the social environment (Rice and Yoshioka-Maxwell, 2015). Freeman (2004) suggested separate metrics to identify *structural centrality*, which sparked further investigation to see how various network links worked. In addition, a connection between ties of a particular type constitutes a social relation, and each contact of actors defines a different network with connections referred to as a networking relationship (Wenlin et al. 2017). This implies that the strength between ties will determine the value of the relationship between actors. Thus, from multiple perspectives, strong social interactions could contribute to prevailing social trust and build social capital. Furthermore, social networks provide a resource for information that users can utilize in practice in various ways (Roldan et al. 2017). For this reason, a notion known as *social structure* describes the qualities of and interactions between the parts of social entities that display collective attributes (Callinicos, 2007; Wallerstein, 2004).

Insofar as this particular study's objective is concerned, various methodologies for analyzing links or structures are included in social network analysis, a widely used theoretical approach to structural analysis (Ma, 2022, p. 8). The definitions of network attributes are conceptualized. A *group* in a network is initially just a subset of the actors who share specific characteristics. One clan group, for instance, could be made up of all the actors in a network of clan groups, such as clan leaders and members, who communicate with one another through social ties. A collection of qualitative analytical methods called social network analysis can potentially include sociocultural phenomena. It is based on investigating social actor interactions and the relationship between the structure and features of social networks. Second, nodes are frequently used to refer to individuals and clan groups. Actors interact with others both internally and externally within social structures. A group of nodes, or social actors, and their connections make up the social network. The main variables affecting these linkages are social support, economic reciprocity, and interpersonal interactions. As a result, social interaction and support could be seen as the two most important components of social network analysis. Consequently, a network consists of players connected by internal or external network linkages. Thirdly, *network ties* act as connections among clan members.

There are currently two approaches to studying social networks: *ego-centric analysis*, which focuses on personal interaction networks, and *sociometric analysis*, which considers connections among the entire cast of network participants. Sociometric links, however, can focus on various social interactions, including friendships, romantic partnerships, individuals with whom a person engages in criminal activity or other

inappropriate behaviour, or networks of collaboration between social service organizations (Roldan et al. 2017). At this juncture, individuals, families, communities, and organizations can all be network participants, or '*nodes*,' as they are known, in social network analysis because it can occur at different conceptual levels. The way actors interact with one another can also take many other forms.

Social relationships and traditional network ties. In this instance, networking relationships form bonds between members of the same social units and clan groups. Actor connections, also known as *ties* or *connections* exist. Friendship, shared interests, interdependence, and other advantages are just a few causes for connecting with other actors (Crothers, 2010). For instance, when advising another person (or social group), an actor can be managed by another actor in a one-directional effect; in this case, the Sultanates work with clan leaders, and clan leaders administer clan members. Whether they are present or not, whether they are friends or not, actors can have a dichotomous connection with other actors based on their physical proximity (Nevard et al. 2021). Thus, in this case, a social structure called a *network links* people together formally or informally and ties them together within a particular social group or more clan-based group. The concept of indirect "*connectivity*" is an important one that can be used to coordinate or govern formally independent social entities (Crothers, 2012, p.10).

In connection with social network analysis, this study focuses on the impact of access and control over resources, well-being, decision-making, benefits, and workloads on social relations, social structure activities, and resource control. It conceptualizes major social relations perspectives to understand both practical and strategic needs. At this point, "*social relations*" refers to a broad range of interactions, connections, and exchanges between people and their surrounding social and physical environment (Burt, 2000). Social relationships may improve performance by increasing ownership, creating a dominant coalition on the firm to rule, and granting access to priceless resources (Newman, 2003). On the other hand, a strong sense of shared identity is essential for communal interactions, which can be influenced by birth, clan member, ethnicity, or locality, but also by shared experiences or socialization (Fig. 10).

The study discovered that the network locations of individuals change through social and economic reciprocity. In a given clan, each member forms a network centred on that specific clan. Analysis based on structural equivalency indicates that a particular person would have a structurally equivalent role, such as clan leader, council head, or youth leader.

This study conceptualized that the council members would try to conduct deep discussions and find solutions for any problems. Then, after reaching a certain common point, they may prepare principles and rules together. If a clan head does not participate in a council meeting, he must respect, accept, and practice the ratified decisions. Working in such a functioning authoritative power-holding system may have many benefits, such as keeping the cultural values and norms of the larger social groups and helping to strengthen the functions and nature of the social structure. The interactions are done via a structural bridge, as Cote (2019) argued in his study, which is the connection between different networks or social circles. This is because when security issues and concerns arise, the first essential and figurative people (like clan leaders and clan council members) are closely involved with no direct or indirect connections. The exchange of information and knowledge creates networking opportunities that would eventually be beneficial as networking relationships with other people develop. Thus, it has been argued that network ties and

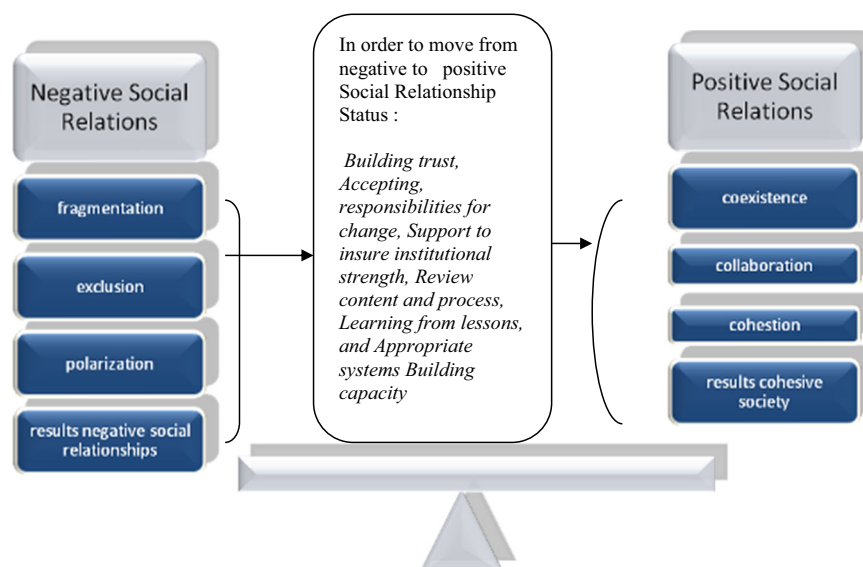


Fig. 10 Stages of building social integrations. Source: Adapted from Newman (2003) and conceptualized based on the research design.

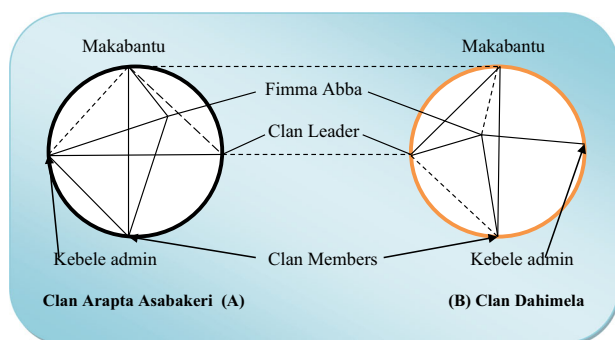


Fig. 11 Social network ties structural diagram of social actors. Source: Adopted from Cote (2019:22).

relationships would be more commonly used to depict member interactions and clan network tie structures. Therefore, *internal clan* hierarchies and administration systems are portrayed differently in the Afar environment. Social relationships and clan group networks are also portrayed differently.

The functions of significant social actors have still guided the social and administrative hierarchies and structure of Afar society, that is, the nodes. Figure 11 above represents interactions and connections of different networks within the social system. Clan leaders, kebele administrators, members, Makabantu, and Fimma Abba are one network within the Arabta Asabakeri clan. Similarly, nodes are also connected to the network ties within the Dahimela clan. The dotted lines represent the structural bridges connecting the clan leaders' network from both clan groups. Therefore, it is unlikely that the interaction among weak ties involves as much interaction as among strong ties, depends on status similarity between individuals, and is embedded in the same networks. So, the nodes of both clan groups, A and B, connect individuals who may have distinctive administrative skills, decision-making abilities, and positive social perspectives.

Thus, stronger ties are suitable for connecting through a *structured bridge* and being more familiar with each other's networks. Influential individuals interact more frequently in a strong relationship and tend to gravitate towards similar interrelated network ties, which have the potential for clan

group solidarity. At this point, Ma (2022) argued that a social network may integrate sociocultural and economic phenomena. It is based on examining the interactions of social actors and the link between the structure and characteristics of social networks. The other reason is that the primary objective of establishing such a network is to protect, defend, and even eliminate conflicts. Such procedures help to defend against external threats in a collaborative manner and with mutual trust. As one of the critical informants remarked, among the Afar society, it is believed that "*without controlling internal agreements, it is impossible to defend external enemies*" [KI6, male-3, 65 years old, Asaita area]. In this case, the study argued that the components of a clan (primarily clan heads) are responsible for the clan's integrity and individual well-being.

Theoretical and practical implications. In the communication process, the message exchange network centralization measures the unevenness of the centrality scores of actors (nodes), the message givers and recipients, in a network (Cote, 2019; Barabási, 2013). Accordingly, communicators who meet in *structurally equivalent* positions often have similar characteristics, making them more likely to receive or deliver new information similarly or under social influences (Crozers, 2012). It is why people may have much power in the communication network sector, not only because they have particular qualities but also because they are situated in networks that allow them to efficiently distribute and receive information and exercise personal influence (Wenlin et al. 2017). Hence, Afar people use social communication as a central mechanism for communication and social relations processes. At the same time, *dagu* is associated with being influenced in new specific domains due to personality traits, status, demographics, clan or kinship lineage, and socioeconomic backgrounds. According to the qualitatively assumed network structure, there are intersection points that depict clan members' connections through *dagu* at the common network area in exchanging social participation events, economic reciprocities, information, and mutual influences.

Many real networks in nature and society share two generic properties: *scale-free* and display a *high degree of clustering*. It has shown that these two features result from a hierarchical organization, implying that small nodes organize hierarchically

into increasingly large groups while maintaining a scale-free topology. The measurements indicate that the clustering coefficient characterizing the hubs decreases linearly with the degree. This implies that while the small nodes are part of highly cohesive, densely interlinked clusters, the hubs are not, as their neighbours have a slight chance of linking. Therefore, the hubs play the vital role of bridging the many small communities of clusters into a single, integrated network (Ravasz and Barabasi, 2003, p.1–6).

The result shows that sociometric links can concentrate on various social interactions, such as friendships, people with large social group domains, or networks of cooperation amongst social service organizations (Ma, 2022; Borgatti and Foster, 2013). At this point, from a clan group networking perspective, resources were found to be utilized with the sharing and reciprocity habits of Afar society (Abdu and Adem, 2021). Controlling resources by a particular clan might result in conflicts and erode social relationships. Consequently, access to networks was determined to be a protective factor against unfavourable outcomes. Social links, particularly those with close family members, offer access to personal resources, and network ties are protective factors (Rice and Yoshioka-Maxwell, 2015). A conjunction or network ties represents a clan member's attitude towards other clan groups, reciprocity, social interactions within their clan network, and other partners' support. Each member is subjected to a reciprocate set of activities within a clan. Accordingly, this study argues that the social networking process and clan group networking emanated from the individual to the group (institution) level. The most important was found to be clan network ties.

The Afar society's customary law practices facilitate clan group networks, administer social relationships and govern the social structure. It is an immediate reference to law (Abdulfetah, 2018, p. 149). In addition, it is identified that the customary law has functioned as an alternative to serving society based on their settlement patterns but has not independently worked with each other.

To conclude the discussion, the main findings indicated that an Afar individual with high closeness centrality has fewer steps to reach others in the strong network tie, and information moves fast. Individuals in all social structures who could effectively get other contacts in their clan group network became active participants. Thus, in the case of Afars' social relationship status, strong and weak ties may be working in an equal sense as detailed interrelated social relationship variables. So, the benefits of networking rely on socioeconomic reciprocity, support, and becoming a solution for problems. Furthermore, a clan group's members share resources or help each other. However, this is sometimes difficult to claim when a particular clan member is far from the group due to economic reasons, geographic distance, migration to urban centres, conflict, etc. Therefore, the divisions of clans according to state borders will likely lead to multiple competing socio-political hierarchies, and the clan system may no longer maintain its mutual aid system. These dynamics could determine whether and when social relationships within a given clan group's members continue or change and how and when a given clan fails to keep interactions.

Concluding remarks and policy implications

As networking relationships evolved, exchanging information and knowledge would provide networking opportunities that benefit over time. According to this study, for showing clan members' interactions and network ties are referred to more. Hence, it could be figured out that social relationships among different clans and members were relatively smooth throughout the entire network. It was also discovered that one connection would include many

clans and their members. The individual had reached optimal social closeness on each subsequent social unit layer, whether moving up or down. As a result, Afar people's social structure pyramids into a social unit level were amplified at every level of interaction.

Still, clan networking provided predictions about the longer-term stability of clan groups based on the characteristics of their constituent triads. However, it was discovered that the new generation could not create new or better networking systems or even could not handle what had already been established, knowingly or unknowingly disregarding cultural values. In addition, it was also identified that insufficient space for traditional cultural values, the harsh environment and seasonal settlement pattern, urbanization and spatial network dynamics, insignificant stakeholder interventions, immature infrastructures, and weak public service provisions had been the main challenges that affected widely the functions of the social structure and clan network ties.

The social interactions may also influence the dominant social capital coalition's desire to pursue specific economic and non-economic goals. It was discovered that a strong sense of shared identity is essential for communal interactions. Cultural values, such as communal and individual accountability, would help to balance the economic strength and prestige of the Afar society. Network ties and relationships should be considered heavily when illustrating member interactions and clan group network structures. Hence, the government, concerned social actors, and stakeholders shall formulate and implement efforts to acquire traditional knowledge and strength. These would be done by focusing on identifying disturbances in shaping network relationships and, secondly, recognizing the role of other societal barriers to network involvement. If so, a clan network tie system would be conceptualized with visible policies. Therefore, the study suggests that researchers, policy planners, academicians, and other stakeholders would be more engaged in searching for remedies for community cohesion and sustainable social relations.

Data availability

Qualitatively collected data using open-ended interviews and focused group discussions are organized and thematically arranged manually but bulky in contents. They are digitalized, and the selected data have been interpreted into English and included in the Data Analysis Section. For more information, the dataset named Replication Data for Interviewed Audio file (view at <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/KOKWGX>) was published in Harvard Dataverse (view at <https://dataverse.harvard.edu/dataverse/harvard>). Thus, the qualitative raw data and analyzed sets during the current study are available from the corresponding author upon reasonable request.

Received: 17 May 2023; Accepted: 13 June 2024;

Published online: 22 June 2024

References

- Abdu, E., & Adem, M. (2021). Determinants of financial inclusion in Afar Region: evidence from selected woredas. *Cogent Econ Finance*, 9(1). <https://doi.org/10.1080/23322039.2021.1920149>
- Abdulfetah A. (2018). *Maa'da-Afar People Customary law*. (Amharic version). Ethiopian Centers for Justice and Afar National Regional State Culture and Tourism Bureau, Published by Empress Printing Press, 149
- Ali S (1997) Resource use conflict in the Middle Awash valley of Ethiopia: the crisis of Afar Pastoralism. In: Hogg R (Ed) *Pastoralists, Ethnicity and the State in Ethiopia*. Haan Publishing, London
- ANRS. (2022). Afar Regional Council, Annual Report. Semera: Non-published

- Aspers P (2009) Empirical phenomenology: a qualitative research approach. *Indo-Pac J Phenomenol* 9(Edn 2):1–12
- Awol Y (1999). Afar women in the process of socio-economic and political development of Afar national regional state. B.A Thesis. Addis Ababa University, Department of Political Science and International Relations
- Balsa-Barreiro J, Morales AJ, Lois-González RC (2021) Mapping Population Dynamics at Local Scales Using Spatial Networks. *Complexity* 2021:1. <https://doi.org/10.1155/2021/8632086>
- Barabási, AL (2013). The Barabási-Albert Model. *Network Science*, 1–45. http://barabasi.com/networksciencebook/content/book_chapter_5.pdf
- Bernardi L, Klärner A (2014) Social networks and fertility. *Demogr Res* 30:641–670
- Borgatti S, Foster P (2013) The network paradigm in organizational research: a review and typology. *J Manag* 29(6):991
- Bujra, A (2002). African conflict: their causes and their political and social environment, development policy management forum (DPMF), Occasional Paper, No. 4. <http://www.dpmf.org>
- Burt RS (2000) The network structure of social capital. *Res Organ Behav* 22:345–423. [https://doi.org/10.1016/S0191-3085\(00\)22009-1](https://doi.org/10.1016/S0191-3085(00)22009-1)
- Callinicos A (2007) Social theory: a historical introduction. (2nd Ed.) Cambridge: polity. Callinicos, A.T. “Anthony Giddens: A Contemp Crit Theory” *Soc* 14(1985):133–166
- Cossins, NJ (1973). Green land of dying land. A study of new cotton wealth of the old Afar Sultanate of Aussa. p.17
- Cote R (2019) The evolution of social network theory: perceived impact on developing network king relationships. Lindenwood University. *Am J Manag* 19(3):19
- Cresswell J (2014) Research design: qualitative, quantitative, and mixed methods approaches. SAGE Publications, Inc, USA
- Crothers, C (Ed.). (2010) History and development of sociology. In: *Encyclopaedia of Life Support Systems (EOLSS)*, developed under the auspices of the UNESCO, Eolss Publishers, Oxford, UK, p. 5. [<http://www.eolss.net>]
- Crozers, C (2012) Analyzing social structures. Sociological landscape, theories, realities, and trends. Auckland University of Technology, New Zealand. p. 10, and Available at: <https://www.researchgate.net/publication/224829004>
- CSA (Central Statistical Authority) (2016) Agricultural sample survey. Volume II Report on livestock and livestock characteristics (Private Peasant Holdings). Central Statistical Authority, Addis Ababa, Ethiopia
- onilee & Spencer (2007) Research design: qualitative and quantitative approaches. Sage, Thousand Oaks, CA, p 419
- Easterly, et al. (2006) Social cohesion, institutions, and growth. *Econ Politics* 18(no. 2):103–20. <https://doi.org/10.1111/j.1468-0343.2006.00165.x>. (July 1, 2006)
- ECA/AFDB, O. (2022). Africa’s Urbanisation Dynamics, p.4. https://www.oecd-ilibrary.org/development/africa-s-urbanisation-dynamics-2022_3834ed5b-en
- EEA-SDARAGP. (2021). Socioeconomic development in Afar region achievements, gaps, and priorities, Ethiopian economics association, Ethiopian economic policy research institute (EEPRI). ISBN – 978-99944-54-80-8, p.18–33, Printed in Addis Ababa, Ethiopia’
- Freeman LC (2004) The development of social network analysis: A study in the sociology of science. Empirical Press, Vancouver
- Getachew K (2002). Overview of interventions in and prospects for social development. In: Baye et al. (ed.) *Ethiopian studies at the end of the second millennium*, Vol. 2, Institute of Ethiopian Studies
- Getachew K (2004) Settlement among the Afar pastoralists of the Awash Valley. In: Pankhurst A, Piguet F Eds. *Migration, Resettlement and Displacement in Ethiopia*. ESSSWA, Addis Ababa. Ethiopia, p 222–242
- Habib M (2019) The History of Afar (Adal) People. (Amharic Version). Printed By 3H Printing Press, Afar, and Ethiopia, p 266
- Jamaladin, I (2015). Ya Afar (Danakil) Hizb Tarik Arki Minch. History of the Afar and its Sources and sources). Trans. Ahmed Mohammed. p. 45–49
- Kelemwork TR (2011) Conflict and alternative dispute resolution among the Afar pastoralists of Ethiopia. *Afr J Hist Cult (AJHC)* 3(3):38–47. Sandfors, Sandfrod University Press
- Levi-Strauss, C (1969). The elementary structures of kinship (J.H. Bell, J.R. von Sturmer, R. Needham, Trans.). Beacon Press, Boston
- Lois D (2016) Types of social networks and the transition to parenthood. *Demogr Res* 34(1):657–688. <https://doi.org/10.4054/DemRes.2016.34.23>
- Luhmann K (1996) Social Systems. Stanford University Press, Stanford, p 12. (24)
- Ma CMS (2022) Relationships between social networking sites use and self-esteem: the moderating role of gender. *Int J Environ Res Public Health* 19(18):8. <https://doi.org/10.3390/ijerph191811462>
- Markakis J (2011) Ethiopia: the last two frontiers. James Currey, Oxford
- Martin, Lee (2015) Social Structures. Princeton University Press, Princeton, p 25
- Michael et al. (2004). Sociology: themes and perspectives. (6 Ed) Harper Collins P. L.PP-179, 184, 234–235
- Mohammed H (2011) Indigenous Governance among the Southern Afar (ca.1815–1974). *Ethiop EJOSSAH VII:Nos.1&2*
- Muauz GA (2018). A critical analysis of ISSA-AFAR violence in Ethiopia and the imperative for constructive transformation. A Ph.D. Dissertation, University of Pretoria: URI: <http://hdl.handle.net/2263/70597>
- Nevard I, Green C, Bell V, Gellatly J, Brooks H, Bee P (2021) Conceptualizing the social networks of vulnerable children and young people: a systematic review and narrative synthesis. *Soc Psychiatry Psychiatr Epidemiol* 56(2):169–182. <https://doi.org/10.1007/s00127-020-01968-9>
- Newman M (2003) The structure and function of complex networks. *SIAM Rev* 45:167–256. <https://doi.org/10.1137/S003614450342480>
- Parsons T (1951) Illness and the role of the physician: a sociological perspective. *Am J Orthopsychiatry* 21(3):452
- Piguet, F (2001). Even after good rains, Afar Pastoralists remain vulnerable: UN-emergencies unit for Ethiopia, multi-agency assessments missions: 15–23 June and 19–23 August 2001
- Ravasz E, Barabási AL (2003) Hierarchical organization in complex networks. *Phys Rev E - Stat Phys, Plasmas, Fluids, Relat Interdiscip Top* 67(2):1–6. <https://doi.org/10.1103/PhysRevE.67.026112>
- Rice E, Yoshioka-Maxwell A (2015) Social network analysis as a toolkit for the science of social work. *J Soc Soc Work Res* 6(3):369–383. <https://doi.org/10.1086/682723>
- Roldan MMH, Sutanonpaiboon J, Burkhard R (2017) Professional and personal social networking and enhancement of social capital in young adults. *J Int Technol Inf Manag* 26(3):46–80. <https://doi.org/10.58729/1941-6679.1311>
- Tadesse B, Yonas A (2007) Afar, the impact of local conflict on regional stability. The Institute for Security Studies at The Center for Policy Research and Dialogue. Capture Press, Pretoria
- Trochim, W (2005). Research methods: the concise knowledge base. Printed In USA by Atomic Dog Publisher, Cornell University, p. 123
- Wallerstein, I (2004). World-systems analysis: an introduction. Durham/London: Duke University Press
- Wenlin L & et al. (2017). Social network theory. The International Encyclopedia of Media Effects. Patrick Rössler (Editor-in-Chief), Cynthia A. Hoffner, and Liesbet van Zoonen (Associate Editors). John Wiley & Sons, Inc. Published 2017 by John Wiley & Sons, Inc. University of Southern California, USA: <https://doi.org/10.1002/9781118783764>
- Yasin M (2010) Regional dynamics of inter-ethnic conflicts in the horn of Africa: an analysis of the Afar-Somali conflict in Ethiopia and Djibouti. A Ph.D. Dissertation, University of Hamburg, Germany

Acknowledgements

I sincerely thank my family and colleagues, who supported me in finance and material provisions, Afar regional state pastoral livelihood expertise, the district culture and tourism bureau, and all research participants.

Author contributions

The author, Bisrat, has collaboratively been working since the initial steps of drafting the research proposal, identifying the problems, selecting methodology, visited to the research sites and collecting the necessary data, writing and editing, and structuring this manuscript. The Corresponding author Getachew Kassa (PhD) has been participating in this research since the initial steps of drafting the research proposal, selecting methodology, and writing the manuscript. He also contributed to organizing themes, editing content; provide relevant suggestions, kinds of literature and other relevant information.

Ethics approval and consent to participate

All procedures performed in studies involving human participants were under the ethical standards of Addis Ababa University, Center for African and Asian Studies research with the international and national ethical guidelines and their amendments. The study was approved by the Center for African and Asian Studies post-graduate research committee, which consists of four review committees, Addis Ababa University (July 12, 2022; Ref. No: CAAS/104/2021-22).

Consent for publication

No participants were contacted without their permission and consent.

Competing interests

The authors have no competing interests.

Additional information

Correspondence and requests for materials should be addressed to Bisrat Teklesilassie Yazew.

Reprints and permission information is available at <http://www.nature.com/reprints>

Publisher’s note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2024